Prepared for



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

### 2019 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

### PLANT HAMMOND HUFFAKER ROAD LANDFILL

Prepared by



engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200 Kennesaw, Georgia 30144

Project Number GW6581B

January 2020



#### **CERTIFICATION STATEMENT**

This 2019 Annual Groundwater Monitoring and Corrective Action Report - Plant Hammond – Huffaker Road Landfill has been prepared in accordance with the United States Environmental Protection Agency coal combustion residual rule [40 Code of Federal Regulations 257 Subpart D], specifically 40 CFR 257.90(e), and the Georgia Environmental Protection Division Rules for Solid Waste Management, Rule 391-3-4-.10 Coal Combustion Residuals and Rule 391-3-4-.14 Groundwater Monitoring and Corrective Action by a qualified groundwater scientist or engineer with Geosyntec Consultants.



Whitney Law Georgia Professional Engineer No. 36641



Geosyntec<sup>></sup>

#### **TABLE OF CONTENTS**

1.0	INTRODUCTION 1
	1.1 Site Description and Background 1
	1.2 Regional Geology and Hydrogeologic Setting
	1.3 Groundwater Monitoring Well Network
	1.4 Landfill Underdrain Monitoring Point
2.0	GROUNDWATER MONITORING ACTIVITIES
	2.1 Monitoring Well Installation and Maintenance
	2.2 Alternate Source Demonstrations
	2.3 Detection Monitoring
3.0	SAMPLE METHODOLOGY & ANALYSIS
	3.1 Groundwater Level Measurement
	3.2 Groundwater Gradient and Flow Velocity
	3.3 Groundwater Sampling Procedures
	3.4 Laboratory Analyses
	3.5 Quality Assurance and Quality Control
4.0	STATISTICAL ANALYSES
	4.1 Statistical Methods – Appendix III Parameters 12
	4.2 Statistical Methods – Appendix I D&O Parameters
	4.3 Statistical Analysis Results
	4.3.1 First Semiannual Event
	4.3.2 Second Semiannual Event
5.0	MONITORING PROGRAM STATUS 15
6.0	CONCLUSIONS AND FUTURE ACTIONS 16
7.0	REFERENCES



#### LIST OF TABLES

Table 1	Monitoring Well Network Summary
Table 2	Groundwater Sampling Event Summary for 2019
Table 3	Summary of Groundwater Elevations
Table 4	Groundwater Gradient and Flow Velocity Calculations for 2019
Table 5	Summary of Groundwater Analytical Data

#### LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Monitoring Well Network Map
Figure 3	Potentiometric Surface Contour Map – April 2019
Figure 4	Potentiometric Surface Contour Map – September 2019

#### LIST OF APPENDICES

Appendix A	Well Inspection Forms
Appendix B	Prepared Alternate Source Demonstrations
Appendix C	Laboratory Analytical and Field Sampling Reports
Appendix D	Statistical Analyses



#### LIST OF ACRONYMS

Alternate Source Demonstration
centimeters per second
coal combustion residual
Code of Federal Regulations
Design and Operations
dissolved oxygen
feet
feet mean sea level
feet per foot
feet per day
Georgia Environmental Protection Division
Georgia Power Company
maximum contaminant level
milligrams per liter
National Environmental Laboratory Accreditation Program
Nephelometric Turbidity Unit
Oxidation/Reduction Potential
Pace Analytical Services, LLC.
professional engineer
prediction limit
practical quantitation limit
quality assurance/quality control
regression on order statistics
Site Acceptability Report
Southern Company Services
statistically significant increase
standard method
total dissolved solids
United States Environmental Protection Agency



#### **1.0 INTRODUCTION**

Groundwater monitoring is currently conducted at the Georgia Power Company (GPC) Plant Hammond, Huffaker Road Landfill (the landfill or the site) to comply with the landfill's Solid Waste permit number 057-022D (LI) (the permit), as issued by the Georgia Environmental Protection Division (GA EPD), and in accordance with Georgia Solid Waste Management Rules for Groundwater Monitoring and Corrective Action of a municipal solid waste landfill, Rule 391-3-4.14. The landfill is also subject to the United States Environmental Protection Agency (USEPA) coal combustion residual rule (CCR Rule) [40 Code of Federal Regulations (CFR) 257 Subpart D] and the GA EPD Rules for Solid Waste Management 391-3-4-.10. Geosyntec Consultants has prepared this 2019 Annual Groundwater Monitoring and Corrective Action Report to document groundwater monitoring activities at GPC Plant Hammond Huffaker Road Landfill. This report documents groundwater monitoring activities completed for the landfill during the 2019 calendar year. A semiannual groundwater report documenting activities from January through July 2019 was prepared and submitted to GA EPD in August 2019 (Geosyntec, 2019b). This report satisfies the reporting requirements of applicable GA EPD Solid Waste Management Rules (391-3-4-.14) and federal and state CCR Rule [40 CFR 257.90(e), 391-3-4-.10]. For ease of reference when discussing aspects of the CCR Rule, only the USEPA CCR rules are cited within this report.

#### 1.1 Site Description and Background

The Huffaker Road Landfill is a GPC-owned property located in Floyd County approximately five miles northeast of Plant Hammond (**Figure 1**). The landfill was built between 2005 and 2007 over a closed surface clay mine, previously owned by Boral Bricks, Inc. The landfill is comprised of constructed Parcels A, B, and E, with Parcels C and D proposed for future expansion. The three existing parcels were permitted and constructed with a minimum 24-inch compacted clay liner with a maximum hydraulic conductivity of 1 x 10<sup>-6</sup> centimeters per second (cm/sec) underlain with a compacted soil barrier designed to provide a minimum five-foot thick barrier between the bottom of the clay liner and seasonal high groundwater levels. GA EPD approved Solid Waste Permit No. 057-022D (LI) in a letter dated May 26, 2006, and disposal operations commenced on May 5, 2008. No CCR materials were stored in the landfill prior to May 2008 (ERM, 2018). In 2016, Parcels A and B were retrofitted with a leachate collection system and a 60-mil HDPE geomembrane overlaying the 24-inch clay liner, which was recompacted to obtain a maximum hydraulic conductivity of 1 x 10<sup>-7</sup> cm/sec (GPC, 2016).

Based on discussions with GPC personnel, Parcels A and B have historically received coal ash whereas Parcel E has typically received gypsum. Currently, Parcels A and B are active, and Parcel E is temporarily inactive and covered with an intermediate closure system of 18-in of soil compacted to obtain a maximum hydraulic conductivity of  $1 \times 10^{-6}$  cm/sec.

A groundwater monitoring plan was developed as part of the landfill's pre-construction Design and Operations (D&O) Plan and approved in September 2004 with subsequent modifications submitted to GA EPD in September 2005, April 2009, and May 2013. Groundwater monitoring in accordance with the D&O Plan began in 2007, prior to disposal activities, and continues to date. The D&O Plan stipulated the following parameters are to be analyzed by an accredited laboratory: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, silver, thallium, vanadium, and zinc. Field parameters that are to be recorded include: pH, temperature, turbidity, dissolved oxygen, specific conductance, and oxidation-reduction potential.

Groundwater monitoring and reporting activities in accordance with 40 CFR 257.90 through 257.94 of the federal CCR Rule were initiated in 2016. Pursuant to 40 CFR 257.94(b), the eight baseline sampling events were conducted March 2016 to March 2017, with the initial detection monitoring event occurring October 2017.

Groundwater samples from wells in the detection monitoring system are collected from each monitoring well and analyzed for:

- Appendix III constituents according to 40 CFR § 257.94(a); and
- A state-modified Appendix I list of detection parameters according to GA EPD Rules for Solid Waste Management 391-3-4-.14 and the approved D&O plan. The state-modified analyte list includes antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, silver, thallium, vanadium, and zinc.

#### 1.2 <u>Regional Geology and Hydrogeologic Setting</u>

The regional geology was summarized in the Southern Company Services (SCS) prepared Site Acceptability Report (SAR) (SCS, 2002) based on the work of Cressler (1970). The landfill is located in the Floyd Shale member of the Judy Mountain Syncline. The Floyd Shale is Mississippian in age and ranges from 200 to 1,200 feet thick in Floyd County. The unit is composed of clay and shale, transitioning to limestone at its base. Boring logs presented in the SAR indicate sandy clayey silt and silty clay with rock fragments described as shale extending to depths of up to approximately 30 feet below ground surface. Underlying this material is a medium gray to dark gray and dark olive gray, heavily to moderately weathered shale. Rock cores collected at the site are described as slightly weathered to unweathered, thinly bedded shale. Descriptions provided in the boring logs are representative of recorded observations on the Floyd Shale.

The landfill is underlain by a regional unconfined groundwater aquifer that occurs within the overburden. Groundwater recharge at the landfill is from infiltration of precipitation. Prior site investigations indicate groundwater within the unconfined aquifer flows predominantly through the heavily to moderately weathered shale layer (SCS, 2002). Groundwater occurring in bedrock below the site is controlled by the degree of enhanced secondary permeability. In general, groundwater occurring in the bedrock is a result of water infiltrating through areas in the overburden where enhanced permeability exists. Review of the available boring logs does not identify a confined aquifer beneath the landfill.

#### 1.3 <u>Groundwater Monitoring Well Network</u>

The existing groundwater monitoring system meets the requirements listed in 40 CFR 257.91 and 391-3-4.14, and (1) consists of a sufficient number of wells, (2) installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer, and (3) represents the groundwater quality both upgradient of the unit (i.e., background conditions) and passing the waste boundary of the unit. The number, spacing, and depths of the groundwater monitoring wells were selected based on the characterization of site-specific hydrogeologic conditions. Pursuant to the 40 CFR 257.91, the well network was certified by a professional engineer (PE) on October 17, 2017; the certification is maintained in the site's operating records.

The certified compliance monitoring well network for the landfill consists of 17 wells installed between September 2001 and February 2007. Five monitoring well locations were designed to monitor background, upgradient groundwater quality conditions, with 12 wells installed downgradient of the landfill to serve as compliance wells. The locations of the compliance wells are presented on **Figure 2**; well construction details are listed in **Table 1**.



#### 1.4 Landfill Underdrain Monitoring Point

In addition to the groundwater monitoring well network, the D&O Plan requires sampling the landfill underdrain monitoring point SWC-1 during each semiannual monitoring event and performing analysis for the same constituents monitored in groundwater. The monitoring point is located west of Parcels A and B, as shown on **Figure 2**. Historically, there has been no liquid discharge from this underdrain point in order to collect a sample. The discharge status of the monitoring point is confirmed during each sampling event.

#### 2.0 GROUNDWATER MONITORING ACTIVITIES

The following describes monitoring-related activities performed during January through December 2019 and discusses any change in status of the monitoring program. All groundwater sampling was performed in accordance with 40 CFR 257.93 and the D&O Plan.

#### 2.1 <u>Monitoring Well Installation and Maintenance</u>

The monitoring well network at the landfill has remained unchanged for the 2019 reporting period.

The well and piezometer networks are inspected during each groundwater monitoring event using GA EPD-based inspection criteria. Any issues identified with the wells (e.g., clogged weep holes within the outer protective casing, faded well identification signage, rusted locks and/or latches, etc.) are addressed before the following groundwater sampling event. Only routine maintenance of the well network was required during 2019. The well inspection forms are provided in **Appendix A**.

#### 2.2 <u>Alternate Source Demonstrations</u>

A statistically significant increase (SSI) of barium and pH in compliance well GWC-8 and sulfate in well GWC-20 was reported in the *First 2019 Semi-Annual Groundwater Monitoring Report* (Geosyntec, 2019b), which was submitted to GA EPD in August 2019. Pursuant to Rule 391-3-4-.14(23)(c), two Alternate Source Demonstrations (ASDs) were prepared that present multiple lines of evidence to demonstrate that the SSIs of barium and pH in well GWC-8 and the sulfate in well GWC-20 are not associated with a release from the landfill, but instead associated with natural variation in the groundwater quality. The completed ASD reports are provided in **Appendix B**.

ASDs have been previously prepared to address SSIs of the following parameters at the indicated wells: barium (GWC-10); chloride (GWC-8); cobalt (GWC-7); nickel (GWC-7); TDS (GWC-6 and GWC-8); and zinc (GWC-7). These ASDs were previously provided under separate report covers.

#### 2.3 <u>Detection Monitoring</u>

GPC currently monitors groundwater associated with the landfill under the detection groundwater monitoring program in accordance with Solid Waste Management Rule 391-



3-4-.14(22) and federal CCR Rule 40 CFR 257.94. The two detection and four verification monitoring events occurred April, June, September/October, and November 2019 (**Table 2**). Groundwater samples were collected from each compliance monitoring well shown on **Figure 2** and analyzed for the state-modified list of Appendix I parameters and Appendix III parameters stipulated by the August 2017 permit modification (Section 1.1). The analytical and statistical results of these events are discussed in Sections 3 and 4, respectively.

#### 3.0 SAMPLE METHODOLOGY & ANALYSIS

The following section presents a summary of the field sampling procedures that were implemented and the groundwater sampling results that were obtained in connection with the detection monitoring program conducted during January through December 2019.

#### 3.1 Groundwater Level Measurement

Prior to a sitewide sampling event, a synoptic round of depth to groundwater level measurements are recorded from the monitoring well network and used to calculate the corresponding groundwater elevation. The calculated groundwater elevations for the April and September/October 2019 sampling events are presented in **Table 3**. The groundwater elevations observed for the April 2019 semiannual detection monitoring event ranged from 690.32 feet mean sea level (ft MSL) (referenced to the North American Vertical Datum of 1988) in well GWA-1 to 613.58 ft MSL in well GWC-21. For the September/October 2019 sampling event the groundwater elevations ranged from 683.66 ft MSL in well GWA-1 to 608.32 ft MSL in well GWC-21.

The groundwater elevation data were used to prepare potentiometric surface maps for the April and September/October 2019 sampling events, which are presented on **Figures 3** and **4**, respectively. Interpretation of the potentiometric surface contours indicate that groundwater flow beneath the landfill is generally to the southeast in vicinity of Parcels A and B, and then south-southwest beneath Parcel E. These observed flow directions are consistent with previous observations.

#### 3.2 Groundwater Gradient and Flow Velocity

The groundwater hydraulic gradient beneath the landfill was calculated using the groundwater elevation data from the April and September/October 2019 events, and between two pairs of data points along interpreted groundwater flow paths to account for changing flow directions across the site, as discussed in Section 3.1. For Parcels A and B, the hydraulic gradient was calculated between wells GWA-1 and GWC-7; for Parcel E, wells GWC-9 and GWC-20 were used for the gradient calculation. The gradient calculations are presented in **Table 4**. The general trajectory of the flow paths used in the calculations are shown on **Figures 3** and **4**.

As presented in **Table 4**, the average hydraulic gradient underneath Parcels A and B, applying the 2019 data, was calculated to be 0.025 feet per foot (ft/ft), whereas the average hydraulic gradient underneath Parcel E equaled 0.016 ft/ft.

The horizontal groundwater flow velocity was calculated using Darcy's Law, as follows:

$$V = linear \ velocity = \frac{K\Delta h}{n\Delta l}$$

where:

$$\begin{split} &K = hydraulic \ conductivity\\ &\frac{\Delta h}{\Delta l} = hydraulic \ gradient = \frac{(h_1 - h_2)}{L}\\ &n = effective \ porosity\\ &h_1 \ and \ h_2 = \ groudwater \ elevation \ at \ location \ 1 \ and \ 2\\ &L = \ distance \ between \ location \ 1 \ and \ 2 \end{split}$$

Prior site investigations indicate groundwater within the unconfined aquifer flows predominantly through the heavily to moderately weathered shale layer (SCS, 2002). The average hydraulic conductivity for this zone [0.248 feet per day (ft/day)] was computed from slug test data derived from five locations across the site (SCS, 2002). An estimated effective porosity of 0.20 is used for the flow rate calculation, based on interpreted values for weathered shale (Freeze/Cherry, 1979). With these variables determined, and accounting for the hydraulic gradients discussed above, the 2019 average groundwater flow velocity underneath Parcels A and B was calculated to be 0.026 ft/day. Similarly, the average flow velocity underneath Parcel E was calculated to be 0.020 ft/day. The flow velocity calculations are provided in **Table 4**.

#### 3.3 Groundwater Sampling Procedures

Groundwater samples were collected from the compliance monitoring well network in accordance with 40 CFR 257.93(a) and the D&O Plan using low-flow purging techniques performed with a peristaltic pump with disposable polyethylene tubing. The intake point of the tubing was lowered to the midpoint of the well screen. Each well was sampled with a new segment of tubing; all tubing was disposed of following the sampling event. All non-disposable equipment was decontaminated before use and between well locations.

A SmarTroll® (In-Situ® field instrument) was used to monitor and record field water quality parameters [i.e., pH, conductivity, dissolved oxygen (DO), temperature, and

oxidation reduction potential (ORP)] during well purging to verify stabilization prior to sampling. Turbidity was monitored using a LaMotte 2020we® turbidity meter. Groundwater samples were collected once the following stabilization criteria were met:

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

Following purging, once stabilization was achieved, samples were collected in laboratory-supplied plastic bottles. Sample bottles were placed in ice-packed coolers and submitted to Pace Analytical Services, LLC. in Norcross, Georgia following chain-of-custody protocol. The field sampling forms generated during the monitoring events conducted during April through November 2019 are provided in **Appendix C**.

#### 3.4 <u>Laboratory Analyses</u>

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

The groundwater analytical results from the 2019 detection and verification monitoring events are summarized in **Table 5**. The Pace Analytical laboratory reports associated with these results are provided in **Appendix C**. The pH field measurements recorded during the detection monitoring and verification sampling events are also provided in **Table 5**.

#### 3.5 **Quality Assurance and Quality Control**

Quality assurance/quality control (QA/QC) samples were collected during the groundwater monitoring events at the rate of one QA/QC sample per 10 groundwater samples and included the following: field duplicates, equipment blanks, and field blank samples. QA/QC samples were collected in laboratory-provided bottles and submitted



under the same chain of custody as the primary samples for analysis of the same parameters by Pace Analytical.

In addition to collecting QA/QC samples, the data were validated based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and applicable federal guidance documents (USEPA, 2011; USEPA, 2017). Where necessary, the data were qualified with supporting documentation and justifications. The associated data validation report is provided in **Appendix C** with the laboratory reports.



#### 4.0 STATISTICAL ANALYSES

The following section presents a summary of the statistical approach applied to independently assess the April and September/October 2019 groundwater data for potential SSIs of permit stipulated parameters reported in downgradient compliance wells relative to the available historical dataset. Because the landfill is currently independently managed under both Georgia's Solid Waste Management Rule 391-3-4.14 and Georgia's CCR Rule 391-3-4.10, which references the federal CCR Rule, two datasets are statistically evaluated per semiannual monitoring event. One dataset contains Appendix III parameters, which is applicable to both of the beforementioned rule sets. The other dataset contains the D&O-specified state-modified list of Appendix I parameters, applicable to Rule 391-3-4.14.

Statistical analysis of the 2019 groundwater data for Appendix III parameters was performed pursuant to 40 CFR 257.93 and in accordance with the PE-certified statistical method. Statistical analysis of the April and September/October 2019 groundwater data for D&O Appendix I parameters was performed pursuant to Rule 391-3-4-.14 and in accordance with the *Background Data Screening & Recommended Statistical Methods* report prepared by Groundwater Stats Consulting in August 2019 and the USEPA document *Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance* (Unified Guidance) (USEPA, 2009). The method proposed in the August 2019 report differed from that required by the D&O Plan. GPC submitted a minor permit modification request to GA EPD to change the statistical methods; the minor modification request was approved by GA EPD in a letter dated August 20, 2019 (EPD, 2019).

The Sanitas groundwater statistical software was used to perform the statistical analyses. Sanitas is a decision-support software package that incorporates the statistical tests required of Subtitle C and D facilities by USEPA regulations and guidance as recommended in the Unified Guidance.

Section 5.3 of the Unified Guidance recommends recalculating the PLs every 2 to 3 years once an adequate data set (i.e., 4 or more new measurements) is compiled for statistical comparison with the existing data set developed from the initial 8 background monitoring events (i.e., conducted between March 2016 and March 2017). Per this guidance, the PLs for Appendix III parameters were recalculated after the first 2019 semiannual sampling event. The PLs for the Appendix I D&O parameters were established with data for March 2007 to October 2018 and will be recalculated after the second 2020 semiannual sampling event, which corresponds to 4+ events after the October 2018 sampling event.



#### 4.1 <u>Statistical Methods – Appendix III Parameters</u>

The PE-certified statistical approach used to evaluate groundwater data for the landfill for Appendix III parameters is the intrawell prediction limit (PL) method combined with a 1-of-3 resample plan. The intrawell PLs utilize historical data from within a given well to establish a statistical limit for comparison of compliance data at the same well. In this case, the data from the monitoring events conducted between March 2016 and June 2019 to establish background conditions. An "initial exceedance" occurs when any data from the well exceeds the PL.

If data from a detection monitoring sampling event initially exceed the PL, the resampling strategy will be used to verify the result. In the 1-of-3 resampling, up to two independent resamples may be collected and evaluated within 90 days to determine whether the initial exceedance is verified. If both resamples exceed the PL, the initial exceedance is verified, and an SSI of that Appendix III parameter is determined. When a single resample result does not verify the initial result, and does not exceed the PL, there is no SSI. If resampling is not performed, the initial exceedance is treated as a confirmed exceedance.

#### 4.2 <u>Statistical Methods – Appendix I D&O Parameters</u>

The intrawell PL statistical approach was also used to evaluate groundwater data for the landfill for Appendix I D&O parameters with a 1-of-2 resample plan (Groundwater Stats, 2019). A 1-of-2 resample plan is sufficient because the dataset used to derive the PLs for the Appendix I constituents is larger since they have been monitored since 2007 and the data encompass sampling events from March 2007 to October 2018. In the 1-of-2 resampling, up to one independent resample may be collected and evaluated within 90 days to determine whether the initial exceedance is verified.

The following guidance is also applicable to the Appendix I and Appendix III statistical analysis methods:

- Statistical analyses are not performed on analytes containing 100% non-detects (USEPA, 2009).
- When data contain less than or equal to 15% non-detects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis.

The reporting limit utilized for non-detects is the practical quantitation limit (PQL) as reported by the laboratory.

- When data contain between 15-50% non-detects, a non-detect adjustment such as the Kaplan-Meier or Regression on Order Statistics (ROS) method for adjustment of the mean and standard deviation will be used prior to constructing a parametric PL.
- Nonparametric PLs are used on data containing greater than 50% non-detects.

#### 4.3 <u>Statistical Analysis Results</u>

A summary of the Sanitas outputs for the 2019 detection monitoring events, and the associated verification sampling events, is provided in **Appendix D**. **Table D-1** of Appendix D compares the 2019 groundwater data to PLs for Appendix III parameters, whereas the Appendix I D&O parameter PLs are presented in **Table D-2**. However, prior to the derivation of the PLs, the background data were assessed for trends and outliers.

#### 4.3.1 First Semiannual Event

The background data for D&O parameters were established in the first semiannual statistical analysis after evaluation of the historical dataset (March 2007 to October 2018) with the exception of special cases for selected well/parameter combinations. Data with statistically significant trends are typically not included as part of the background data used for construction of prediction limits. After testing with the Sen's Slope/Mann Kendall method, several records were truncated in order to utilize more recent measurements that do not contain trending data which results in statistical limits that better represent present-day conditions. A list of special cases where the record was truncated for construction of statistical limits is provided in **Appendix D**.

Time series plots generated by Sanitas were used to identify suspected outliers, or extreme values that would result in limits that are not representative of the current background data population. Suspected outliers at all wells for D&O parameters were formally tested using Tukey's box plot method. Several values identified by Tukey's method were flagged in the database. Several other values were flagged in addition to those identified by Tukey's because the values were higher than all remaining concentrations and would cause the statistical limits to be elevated. A summary of all flagged values is included in **Appendix D**.

As presented in the first semiannual groundwater monitoring report (Geosyntec, 2019b), statistical analysis of the April 2019 groundwater data identified the following verified Appendix III SSIs:

- pH (GWC-8)
- Sulfate (GWC-20)

The statistical analyses of the Appendix I D&O parameters resulted in a barium PL exceedance in GWC-8. As discussed in Section 2.2, ASDs were prepared presenting multiple lines of evidence to conclude that the SSIs in wells GWC-8 and GWC-20 are not associated with a release from the landfill. The ASDs are provided in **Appendix B**.

#### 4.3.2 Second Semiannual Event

As mentioned in Section 4.1, the PLs for Appendix III parameters were recalculated before statistically evaluating the September/October 2019 data. The original background Appendix III parameter data set (i.e., March 2016 to March 2017) was expanded to include data from October 2017 to June 2019 (i.e., corresponding to the final verification sampling event conducted for the April 2019 semiannual monitoring event). The original background data set and expanded data set were statistically compared using a Wilcoxon Rank Sum test. The background dataset of well/constituent pairs with identified significant differences was further reviewed, and well/constituent pairs with an Additionally, close inspection of the remaining ASD in place were updated. well/constituent pairs evidenced that most of the reported measurements are consistent with those observed in upgradient wells, so the data ranges can be attributed to natural variability at the site. Therefore, all PLs for Appendix III parameters were updated. **Appendix D** provides a summary of the statistical evaluation. Suspected outliers of Appendix III parameters were evaluated by Tukey's method and two values were flagged in the database. A summary of the Appendix III flagged values is also included in Appendix D.

Although initial statistical exceedances were observed in the September sampling results, subsequent verification samples did not confirm the exceedances. Therefore, no verified SSIs were observed for Appendix III parameters during the second semiannual sampling event. The statistical analyses of the Appendix I D&O parameters resulted in an arsenic PL exceedance in GWC-7. In accordance with GA EPD Rules for Solid Waste Management 391-3-4-.14(23)(c), an ASD is being prepared to address the SSI of arsenic in well GWC-7 and will be submitted to the EPD.



#### 5.0 MONITORING PROGRAM STATUS

Groundwater monitoring at the landfill is currently being conducted under a detection monitoring program pursuant to both the Georgia Rule 391-3-4.14(21) and the federal CCR Rule 40 CFR 257.94. GPC is currently preparing a demonstration that a source other than the landfill was the cause for an arsenic SSI identified during the second semiannual monitoring event per Georgia Rule 391-3-4.14(23)(c).



#### 6.0 CONCLUSIONS AND FUTURE ACTIONS

This 2019 Annual Groundwater Monitoring and Corrective Action Report for GPC's Plant Hammond Huffaker Road Landfill was prepared to fulfill the requirements of both applicable federal and state CCR Rules and GA EPD Solid Waste Management Rules (40 CFR 257.90(e), 391-3-4-.10, and 391-3-4-.14). Statistical evaluations of the 2019 groundwater monitoring data identified SSIs of arsenic, barium, pH, and sulfate during the first semiannual monitoring period. ASDs were prepared presenting multiple lines of evidence to conclude that the SSI of barium and pH in well GWC-8 and the SSI of arsenic was verified during the second semiannual monitoring event. GPC is currently preparing an alternate source demonstration to document that the SSI is not the result of a release from the CCR unit.

#### 7.0 **REFERENCES**

- Cressler, C.W., 1970. *Geology and Ground-water Resources of Floyd and Polk Counties, Georgia*. Atlanta: Geological Survey of Georgia. 1970.
- ERM, 2018. 2017 Annual Groundwater Monitoring and Corrective Action Report, Plant Hammond Huffaker Road Landfill, Permit No. 057-022D (LI). January, 2018.
- Freeze, R. Allan & Cherry, John A. (1979). *Groundwater*. Englewood Cliffs, Prentice-Hall, Inc. Print.
- Georgia Environmental Protection Division (GA EPD), 2017. CCR Rule Compliance: Minor Modification Request to Add Appendix III & IV Sample Parameters To The Groundwater Monitoring Plan (GWMP), Floyd County - Georgia Power, Huffaker Road, Permit No. 057-022D(LI). Issued 9 August 2017 to Timothy Earl, Georgia Power Company.
- GA EPD, 2019. Minor Modification Groundwater Monitoring Plan Update Approval, Georgia Power Company - Multiple Private Industry Soil Waste Disposal Facilities. Issued 20 August 2019 to Jalpa Patel, Georgia Power Company
- Georgia Power Company, 2016. Plant Hammond Huffaker Road Coal Combustion By-Products Disposal Facility, Design and Operations Plan Minor Modification -9/16/2016, Georgia Power Company. September 2016.
- Geosyntec Consultants, 2019a. Second 2018 Semi-Annual Groundwater Monitoring Report. March 2019.
- Geosyntec Consultants, 2019b. 2019 First Semiannual Groundwater Monitoring and Corrective Action Report, Plant Hammond Huffaker Road Landfill. August 2019.
- Geosyntec Consultants, 2019c. Alternate Source Demonstration Sulfate, Plant Hammond Huffaker Road Landfill. November 2019.
- Geosyntec Consultants, 2019d. Alternate Source Demonstration Barium and pH, Plant Hammond Huffaker Road Landfill. November 2019.
- Groundwater Stats Consulting, 2019. Plant Hammond Huffaker Road Landfill Background Data Screening & Recommended Statistical Methods. August 2019.

GW6581B/Huffaker\_CCR\_2019

- Sanitas: Groundwater Statistical Software, v. 9.6.05 (2018). Sanitas Technologies<sup>©</sup>, Boulder, CO.
- Southern Company Services, Inc. (SCS), 2002. Plant Hammond Proposed Huffaker Road Coal Combustion By-Products Storage Facility Site Acceptability Report.
  Birmingham, Alabama: Earth Science and Environmental Engineering. December 2002.
- United States Environmental Protection Agency (USEPA), 2009. *Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance*. Office of Solid Waste Management Division, EPA. Washington, D.C. March 2009.
- USEPA, 2011. *Region* IV *Data Validation Standard Operating Procedures*. Science and Ecosystem Support Division. Region IV. Athens, GA. September 2011.
- USEPA, 2015. Hazardous and Solid Waste Management Systems; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, 40 CFR Parts 257 and 261, Federal Register, Vol. 80, No. 74, April 17, 2015, pp.21302-21501
- USEPA, 2017. National Functional Guidelines for Inorganic Superfund Methods Data Review. Office of Superfund Remediation and Technology Innovation. OLEM 9355.0-135 [EPA-540-R-2017-001]. Washington, DC. January 2017.

### TABLES

## Table 1Monitoring Well Network SummaryPlant Hammond, Huffaker Road Landfill, Floyd County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing <sup>(1)</sup>	Easting <sup>(1)</sup>	Top of Casing Elevation <sup>(2)</sup> (ft MSL)	Top of Screen Elevation <sup>(2)</sup> (ft MSL)	Bottom of Screen Elevation <sup>(2)</sup> (ft MSL)	Well Depth <sup>(3)</sup> (ft BTOC)	Screen Interval Length
GWA-1	Upgradient	9/11/2001	1565643.23	1952068.06	702.05	672.52	662.52	39.83	10
GWA-2	Upgradient	2/5/2007	1565589.74	1952641.00	681.46	665.84	655.84	25.92	10
GWA-3	Upgradient	2/6/2007	1565519.19	1953199.71	659.25	648.10	638.10	21.45	10
GWA-4	Upgradient	2/6/2007	1565518.65	1953686.93	656.87	645.66	635.66	21.51	10
GWA-11	Upgradient	7/21/2006	1564945.85	1952008.14	682.48	656.57	646.57	36.21	10
GWC-5	Downgradient	2/7/2007	1565158.40	1953566.09	649.46	638.22	628.22	21.54	10
GWC-6	Downgradient	7/20/2006	1564396.99	1953919.43	656.37	623.77	613.77	42.90	10
GWC-7	Downgradient	7/19/2006	1564078.74	1953595.62	657.05	635.23	625.23	32.12	10
GWC-8	Downgradient	7/18/2006	1564000.11	1953095.59	656.63	639.53	629.53	27.40	10
GWC-9	Downgradient	7/18/2006	1563875.99	1952393.22	659.41	617.36	607.36	52.35	10
GWC-10	Downgradient	7/20/2006	1564307.60	1951975.60	667.52	643.53	633.53	34.29	10
GWC-18	Downgradient	7/12/2006	1563319.48	1953391.01	641.30	594.65	584.65	56.95	10
GWC-19	Downgradient	7/11/2006	1562842.42	1952979.50	642.93	595.72	585.72	57.51	10
GWC-20	Downgradient	7/17/2006	1562472.09	1952332.09	625.65	601.59	591.59	34.36	10
GWC-21	Downgradient	7/12/2006	1562098.80	1951612.93	618.36	610.43	600.43	18.23	10
GWC-22	Downgradient	7/13/2006	1562778.11	1951618.87	624.92	593.17	583.17	42.05	10
GWC-23	Downgradient	7/19/2006	1563557.96	1951605.45	654.87	615.15	605.15	50.02	10

Notes:

ft MSL = feet mean sea level

ft BTOC = feet below top of casing

(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet.

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

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

Table 2Groundwater Sampling Event Summary for 2019Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

Well ID Hydraulic Location		Apr 5-9, 2019	Jun 18-19, 2019	Jun 27, 2019	Sep 29-Oct 1, 2019	Nov 6, 2019	Nov 26, 2019	Status of Monitoring Well
Purpose of S	ampling Event:	Detection	Verification	Verification	Detection	Verification	Verification	
GWA-1	Upgradient	D01	-	-	D02	-	-	Detection
GWA-2	Upgradient	D01	-	-	D02	-	-	Detection
GWA-3	Upgradient	D01	-	-	D02	-	-	Detection
GWA-4	Upgradient	D01	-	-	D02	-	-	Detection
GWA-11	Upgradient	D01	-	-	D02	-	-	Detection
GWC-5	Downgradient	D01	-	-	D02	-	-	Detection
GWC-6	Downgradient	D01	V01	-	D02	-	-	Detection
GWC-7	Downgradient	D01	-	-	D02	V01	-	Detection
GWC-8	Downgradient	D01	V01	V02	D02	-	-	Detection
GWC-9	Downgradient	D01	-	-	D02	-	-	Detection
GWC-10	Downgradient	D01	-	-	D02	-	-	Detection
GWC-18	Downgradient	D01	-	-	D02	-	-	Detection
GWC-19	Downgradient	D01	-	-	D02	-	-	Detection
GWC-20	Downgradient	D01	V01	V02	D02	V01	-	Detection
GWC-21	Downgradient	D01	-	-	D02	V01	V02	Detection
GWC-22	Downgradient	D01	-	-	D02	V01	-	Detection
GWC-23	Downgradient	D01	-	_	D02	_	-	Detection

Notes:

D## = Detection monitoring event number

V## = Verification event number

Table 3Summary of Groundwater ElevationsPlant Hammond, Huffaker Road Landfill, Floyd County, Georgia

	Top of Casing	Apr 8	, 2019	Sep 30	), 2019
Well ID	Elevation <sup>(1)</sup> (ft MSL)	Depth to Water (ft BTOC)	Groundwater Elevations (ft MSL)	Depth to Water (ft BTOC)	Groundwater Elevations (ft MSL)
GWA-1	702.05	11.73	690.32	18.39	683.66
GWA-2	681.46	6.13	675.33	9.63	671.83
GWA-3	659.25	4.88	654.37	7.71	651.54
GWA-4	656.87	9.83	647.04	13.35	643.52
GWA-11	682.48	15.65	666.83	20.58	661.90
GWC-5	649.46	4.54	644.92	6.70	642.76
GWC-6	656.37	15.11	641.26	18.33	638.04
GWC-7	657.05	13.50	643.55	18.55	638.50
GWC-8	656.63	10.09	646.54	15.15	641.48
GWC-9	659.41	12.99	646.42	18.54	640.87
GWC-10	667.52	12.79	654.73	19.62	647.90
GWC-18	641.30	12.43	628.87	16.28	625.02
GWC-19	642.93	18.23	624.70	22.19	620.74
GWC-20	625.65	3.12	622.53	7.38	618.27
GWC-21	618.36	4.78	613.58	10.04	608.32
GWC-22	624.92	1.88	623.04	6.61	618.31
GWC-23	654.87	7.96	646.91	18.69	636.18

Notes:

ft BTOC = feet below top of casing

ft MSL = feet mean sea level

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

Table 4Groundwater Gradient and Flow Velocity Calculations for 2019Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

	Hydraul	ic Gradient	- April 8, 2	019 Data	Hydraulic				
Landfill Parcels	<b>h</b> <sub>1</sub> (ft)	h <sub>2</sub> (ft)	Δl (ft)	Δh/Δl (ft/ft)	<b>h</b> <sub>1</sub> (ft)	<b>h</b> <sub>2</sub> (ft)	Δl (ft)	Δh/Δl (ft/ft)	Average Δh/Δl (ft/ft)
A & B	690.32	643.55	2,185	0.021	683.66	638.50	2,185	0.021	0.021
Е	646.42	622.53	1,450	0.016	640.87	618.27	1,450	0.016	0.016

	Averaged	l for 2019		
Landfill Parcels	K (ft/d)	n	Δh/Δl (ft/ft)	$V (ft/d)^{(1)}$
A & B	0.248	0.20	0.021	0.026
Е	0.246	0.20	0.016	0.020

Notes:

ft = feet

ft/d = feet per day

ft/ft = feet per foot

 $h_1$  and  $h_2$  = groundwater elevation at designated measuring points

 $\Delta h/\Delta l =$  hydraulic gradient

K = hydraulic conductivity

 $\Delta l$  = distance between measuring points 1 and 2

n = effective porosity

V = groundwater flow velocity

(1) Groundwater flow velocity equation:  $V = [K * (\Delta h / \Delta l)] / n$ 

	Well ID:	GWA-1	GWA-1	GWA-2	GWA-2	GWA-3	GWA-3	GWA-4	GWA-4	GWA-11	GWA-11	GWC-5	GWC-5
	Sample Date:	4/8/2019	9/30/2019	4/8/2019	9/30/2019	4/5/2019	9/30/2019	4/8/2019	9/30/2019	4/8/2019	9/30/2019	4/9/2019	10/1/2019
	Parameter (1,2)												
	Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	ND	ND	ND	ND	ND (0.00035 J)	ND (0.00058 J)	ND (0.00023 J)	ND	ND (0.00012 J)	ND	ND	ND
	Barium	0.031	0.042	0.15	0.17	0.13	0.14	0.047	0.051	0.031	0.030	0.067	0.090
	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.0012 J)
lan	Cobalt	ND (0.00026 J)	ND (0.00042 J)	ND (0.000061 J)	ND	ND (0.00031 J)	ND	ND (0.00044 J)	ND (0.00079 J)	ND (0.00076 J)	ND (0.00054 J)	ND	ND
0 F	Copper	ND	ND	ND (0.00029 J)	ND	ND	ND	ND	ND	ND (0.0013 J)	ND	ND	ND (0.00031 J)
D&	Lead	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.00039 J)	ND (0.000065 J)
	Nickel	ND (0.00034 J)	ND (0.00037 J)	ND	ND	ND (0.00075 J)	ND	ND (0.00089 J)	ND (0.0013 J)	ND (0.0023 J)	ND (0.0017 J)	ND (0.00098 J)	ND (0.00088 J)
	Selenium	ND	ND	ND	ND	ND	ND	ND (0.00014 J)	ND	ND	ND	ND	ND
	Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Vanadium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Zinc	ND	ND (0.0032 J)	ND (0.0014 J)	ND (0.0043 J)	ND (0.0013 J)	ND (0.0045 J)	ND (0.0023 J)	ND (0.0059 J)	ND (0.0024 J)	ND (0.0040 J)	ND	ND (0.0053 J)
	Boron	ND (0.019 J)	ND (0.025 J)	ND (0.071 J)	0.084	0.12	0.17	ND (0.057 J)	0.11	ND (0.034 J)	ND (0.039 J)	0.048	0.071
Η	Calcium	15.7	17.6	44.1	44.6	76.5	74.7	86.6	78.3	22.4	19.6	73.9	70.6
IXI	Chloride	1.1	1.4	2.6	3.0	4.2	4.1	3.6	7.5	1.3	1.5	3.3	2.2
Ĩ	Fluoride	ND (0.057 J)	ND (0.11 J)	ND (0.072 J)	ND (0.14 J)	0.31	ND (0.15 J)	ND (0.12 J)	ND (0.17 J)	ND (0.035 J)	ND (0.099 J)	ND (0.061 J)	ND (0.064 J)
PPE	pH <sup>(3)</sup>	6.86	7.15	6.79	6.86	6.77	6.73	6.82	6.77	6.61	6.86	6.72	6.81
Ŧ	Sulfate	4.6	4.9	18.1	17.5	131	118	248	117	13.2	11.5	83.6	68.1
	TDS	91.0	126	209	242	456	475	522	455	142	134	371	380

Notes:

-- = Parameter was not analyzed

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

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

TDS = total dissolved solids

(1) Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units).

(2) Analytical methods used for groundwater sample analysis are listed in the analytical laboratory reports included in Appendix C.

	Well ID:	GWC-6	GWC-6	GWC-6	GWC-7	GWC-7	GWC-7	GWC-8	GWC-8	GWC-8	GWC-8	GWC-9	GWC-9
	Sample Date:	4/8/2019	6/19/2019	10/1/2019	4/8/2019	10/1/2019	11/6/2019	4/8/2019	6/18/2019	6/27/2019	10/1/2019	4/8/2019	10/1/2019
	Parameter (1,2)												
	Antimony	ND		ND	ND	ND		ND		-	ND	ND	ND
	Arsenic	ND		ND	0.0057	0.010	0.011	ND (0.0015 J)		-	ND (0.0028 J)	ND	ND (0.00071 J)
	Barium	0.15		0.18	0.24	0.085		0.13	0.17	0.14	0.12	0.058	0.071
	Beryllium	ND		ND	ND (0.000058 J)	ND (0.00010 J)		ND		-	ND	ND	ND
	Cadmium	ND		ND	ND	ND		ND	-		ND	ND	ND
	Chromium	ND		ND	ND	ND		ND		-	ND (0.00050 J)	ND	ND
lan	Cobalt	ND (0.00022 J)		ND	ND (0.0086 J)	0.017		ND (0.0017 J)			ND (0.00081 J)	ND (0.00041 J)	ND (0.00041 J)
0 F	Copper	ND		ND (0.00023 J)	ND (0.00025 J)	ND (0.00034 J)		ND		-	ND (0.00036 J)	ND	ND
D&	Lead	ND		ND	ND	ND (0.000050 J)		ND	-		ND	ND	ND
	Nickel	ND (0.00032 J)		ND (0.00042 J)	0.030	0.070		ND (0.00064 J)		-	ND (0.00063 J)	ND (0.0021 J)	ND (0.0022 J)
	Selenium	ND		ND	ND	ND		ND	-	-	ND	ND	ND
	Silver	ND		ND	ND	ND		ND		-	ND	ND	ND
	Thallium	ND		ND	ND	ND		ND			ND	ND	ND
	Vanadium	ND		ND	ND	ND		ND			ND	ND	ND
	Zinc	ND (0.0013 J)		ND (0.0056 J)	0.051	0.12		ND (0.0012 J)			ND (0.0055 J)	ND (0.0016 J)	ND (0.0052 J)
	Boron	ND (0.036 J)		0.042	ND (0.049 J)	0.050		ND (0.055 J)			0.046	ND (0.015 J)	ND (0.018 J)
Η	Calcium	67.0		64.2	56.1	28.5	-	81.5	83.7	75.9	64.0	36.3	37.2
IXI	Chloride	2.1		1.6	1.9	1.2		3.2		-	1.8	1.0	ND (0.91 J)
QN	Fluoride	ND		ND (0.063 J)	ND (0.17 J)	ND (0.16 J)		ND (0.10 J)			ND (0.13 J)	ND (0.058 J)	ND (0.078 J)
PPE	pH <sup>(3)</sup>	7.00	7.03	6.97	6.26	6.09		6.91	6.85	7.05	7.11	6.72	6.77
IA	Sulfate	131	108	71.7	97.1	120		39.9			47.1	73.5	72.2
	TDS	353		348	295	277		438			305	264	237

Notes:

--= Parameter was not analyzed

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

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

TDS = total dissolved solids

(1) Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units).

(2) Analytical methods used for groundwater sample analysis are listed in the analytical laboratory reports included in Appendix C.

Well ID:		GWC-10	GWC-10	GWC-18	GWC-18	GWC-19	GWC-19	GWC-20	GWC-20	GWC-20	GWC-20	GWC-20
Sample Date:		4/9/2019	10/1/2019	4/9/2019	10/1/2019	4/9/2019	10/1/2019	4/9/2019	6/18/2019	6/27/2019	10/1/2019	11/6/2019
Parameter (1,2)												
D&O Plan	Antimony	ND	ND	ND	ND	ND	ND	ND	-		ND	
	Arsenic	ND	ND	ND (0.00063 J)	ND	ND	ND	ND	-		ND	
	Barium	0.17	0.12	0.081	0.082	0.15	0.15	0.13			0.14	
	Beryllium	ND	ND	ND	ND	ND	ND	ND			ND	
	Cadmium	ND	ND	ND	ND	ND	ND	ND	-		ND	
	Chromium	ND	ND	ND	ND (0.00086 J)	ND	ND	ND			ND	
	Cobalt	ND	ND	ND	ND	ND	ND	ND	-		ND	
	Copper	ND	ND	ND	ND (0.00037 J)	ND (0.0014 J)	ND (0.00019 J)	ND	-		ND (0.00023 J)	
	Lead	ND	ND	ND	ND	ND	ND	ND	-		ND	
	Nickel	ND	ND	ND	ND (0.0015 J)	ND	ND	ND			ND	
	Selenium	ND	ND	ND	ND	ND	ND	ND	-		ND	
	Silver	ND	ND	ND	ND	ND	ND	ND	-		ND	
	Thallium	ND	ND	ND	ND	ND	ND	ND	-		ND	
	Vanadium	ND	ND	ND	ND	ND	ND	ND	-		ND	
	Zinc	ND	ND (0.0049 J)	ND (0.0037 J)	ND (0.0060 J)	ND	ND (0.0049 J)	ND			ND (0.0063 J)	
APPENDIX III	Boron	ND (0.035 J)	ND (0.031 J)	0.12	0.14	0.17	0.17	ND (0.011 J)			ND (0.019 J)	
	Calcium	48.8	36.8	41.4	38.7	45.8	42.3	57.1			59.1	
	Chloride	1.9	1.5	1.6	ND (0.94 J)	1.9	1.3	1.8			1.1	
	Fluoride	ND (0.067 J)	ND (0.070 J)	ND (0.10 J)	ND (0.11 J)	ND (0.10 J)	ND (0.11 J)	ND (0.056 J)			ND (0.069 J)	
	рН <sup>(3)</sup>	7.22	7.07	7.48	7.65	7.40	7.31	7.26	7.35	7.31	7.16	7.44
	Sulfate	21.4	13.4	11.3	8.9	16.7	14.7	50.3	38.7	46.0	52.3	47.3
	TDS	213	186	212	196	253	229	267			271	

Notes:

-- = Parameter was not analyzed

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

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

TDS = total dissolved solids

(1) Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units).

(2) Analytical methods used for groundwater sample analysis are listed in the analytical laboratory reports included in Appendix C.

	Well ID:	GWC-21	GWC-21	GWC-21	GWC-21	GWC-22	GWC-22	GWC-23	GWC-23
	Sample Date:	4/9/2019	10/1/2019	11/6/2019	11/26/2019	4/9/2019	10/1/2019	4/8/2019	10/1/2019
Parameter <sup>(1,2)</sup>									
	Antimony	ND	ND			ND	ND	ND	ND
	Arsenic	ND (0.0018 J)	ND			ND	ND	ND (0.00034 J)	ND (0.00082 J)
	Barium	0.050	0.18			0.094	0.10	0.059	0.082
	Beryllium	ND	ND			ND	ND	ND	ND
	Cadmium	ND	ND	-		ND	ND	ND	ND
	Chromium	ND	ND			ND (0.0023 J)	ND	ND	ND (0.0051 J)
lan	Cobalt	ND (0.0023 J)	ND (0.00046 J)	-		ND	ND	ND (0.00046 J)	ND (0.00033 J)
10	Copper	ND	ND (0.00084 J)			ND	ND (0.00031 J)	ND (0.00050 J)	ND (0.00083 J)
D&	Lead	ND	ND (0.000075 J)			ND	ND (0.00012 J)	ND (0.00018 J)	ND (0.00022 J)
	Nickel	ND (0.0048 J)	ND (0.0031 J)			ND	ND	ND (0.0011 J)	ND (0.0035 J)
	Selenium	ND	ND			ND	ND (0.0014 J)	ND	ND
	Silver	ND	ND			ND	ND	ND	ND
	Thallium	ND	ND			ND	ND	ND	ND
	Vanadium	ND	ND			ND	ND	ND (0.00017 J)	ND
	Zinc	ND (0.0041 J)	ND (0.0078 J)			ND	ND (0.0054 J)	ND (0.0016 J)	ND (0.0057 J)
	Boron	ND (0.014 J)	0.059			0.063	0.066	ND (0.022 J)	ND (0.024 J)
Ξ	Calcium	35.4	82.8	74.9	45.8	47.3	46.9	39.8	39.1
IXI	Chloride	2.6	2.0			1.7	1.4	1.5	1.1
QN	Fluoride	ND (0.063 J)	ND (0.094 J)	-		ND (0.063 J)	ND (0.079 J)	ND (0.057 J)	ND (0.079 J)
PPE	pH <sup>(3)</sup>	6.46	6.90			7.49	7.38	6.88	7.00
I I	Sulfate	19.9	46.3			11.0	1.9	6.2	5.8
	TDS	167	336	336	236	222	220	191	203

Notes:

-- = Parameter was not analyzed

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

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

TDS = total dissolved solids

(1) Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units).

(2) Analytical methods used for groundwater sample analysis are listed in the analytical laboratory reports included in Appendix C.

### FIGURES














### APPENDIX A

Well Inspection Forms

Geosyntec <sup>p</sup>		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	<b>Exercisi</b>	WI	ELL INSPECT	TION FORM		
Field Technicia	n: Palton	Anderson	Site/Location	: Pla	inf Hai	mmond		Inspection Date: 4/8/19
	10000			100	well inspect	ion items	아파르.	
	Inspection			Prese	ent (Y/N)			Comments regarding well condition
well ID	Time	Lock	Locking Cap	Bollards	Concrete Pad	Protective Casing	Vegetation	Comments regarding wen condition
GWA-2	8:52	Y	Y	Y	Y	$\searrow$	Y	
GWA-3	9:07	Y	Ý	Y	Ý	X	Y	
GWA-4	9:20	Y	Y	Y	Y	Y	Y	
GWC-5	9:35	Y	Y	Y	Y	Y	Y	
GWA-1	10:34	Y	Y	Y	Y	Y	Y	
GWC-6	16:00	Y	Y	Ý	Y	Y	Y	
2								

-----

·	<b>6</b>	0	_ [	1 Tee	11			11 0 0 0	
Field Technicia	in: Haron	Keeder	Site/Location	: Mu	**	<b>T</b> 4		Inspection Date: 4-8-2019	
		1. 1. 2.			wen inspect	ion items			
	Inspection			Prese	ent (Y/N)				
well ID	Time	Lock	Locking Cap	Bollards	Concrete Pad	Protective Casing	Vegetation	Comments regarding well condition	011
GWA-11	1022	Y	Y	Y	Y	Y	Y	9002	
GWC-10	1028	Y	7	Y	Y	Y	Y	Wet Area around w	ve)
GWC-23	1039	У	Y	Y	Y	Y	Y	900à	
GWC-22	1052	Y	7	Y	Y	Y	$\sim$	wet Area around	we
GWC-21	1100	Y	Y	Y	Y	4	Y	good	
		5							
24									
2									

Geosyniee*			145162 113	W	ELL INSPECT	TION FORM		
ield Technicia	m: Grant	- Walter	Site/Location	Huffa	Ker / Ho	immond		Inspection Date: 04/08/19
					Well Inspect	ion Items		
	Inspection			Prese	ent (Y/N)			
well ID	Time	Lock	Locking Cap	Bollards	Concrete Pad	Protective Casing	Vegetation	Comments regarding well condition
GWC-9	9:00	Y	Y	X	Y	Y	Y	Rust on capt lock
GWC-8	9:04	Y	Y	Y	Y	Y	$\gamma$	SAA
SWC-7	9:08	Y	Y	Y	Y	Y	×	SAA
Sinc-20	9:15	Y	Y	Y	Y	Y	Ý	SAA
Givic-19	9:20	Y	Y	Y	Y	Y	Y	SAA
GWC-18	9:25	Y	Y	Y	Y	Y	Y	SAA
				,				

Site Name	Plant Hammond - Huttaker	-		
Permit Number		-		
Well ID	Caup 71	-		
Tate, field conditions	9130/19 jeler sunny		20	2/2
1 Location/I	dentification	yes	no	n/a
а	Is the well visible and accessible?	$\checkmark$		
b	Is the well properly identified with the correct well ID?	5		
С	Is the well in a high traffic area and does the well require			
	protection from traffic?		4	
d	Is the drainage around the well acceptable? (no standing water,		. <b></b>	
	nor is well located in obvious drainage flow path)	U		
2 Protective	Casing			
а	Is the protective casing free from apparent damage and able to be			
	secured?	J		
b	Is the casing free of degradation or deterioration?	V		
С	Does the casing have a functioning weep hole?	~		
d	Is the annular space between casings clear of debris and water,	1		
	or filled with pea gravel/sand?	X		
е	Is the well locked and is the lock in good condition?	$\checkmark$		
3 Surface pa	he	ſ		
a	Is the well pad in good condition (not cracked or broken)?	1		
b	Is the well pad sloped away from the protective casing?	1		0
C	Is the well pad in complete contact with the protective casing?	-		0
d	is the well pad in complete contact with the ground surface and	<u> </u>		
	stable? (not undermined by erosion, animal burrows, and does not	1		
	move when stepped on)	V/		
e	Is the pad surface clean (not covered with sediment or debris)?	1	·	) <del></del>
4 <u>Internal ca</u>	sing			
а	Does the cap prevent entry of foreign material into the well?			
b	Is the casing free of kinks or bends, or any obstructions from	7		
	foreign objects (such as bailers)?	<u> </u>		a3
С	Is the well properly vented for equilibration of air pressure?	5		
d	Is the survey point clearly marked on the inner casing?	1		
е	Is the depth of the well consistent with the original well log?	V		·
f	Is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to lack of grout or use of slip	/		
	couplings in construction)	<u> </u>		
5 Sampling:	Groundwater Wells Only:	14		
a	Does well recharge adequately when purged?	1		
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			V
С	Does the well require redevelopment (low flow, turbid)?		V	
6 Based on v	your professional judgement, is the well construction / location			
e Dabba off j	appropriate to 1) achieve the objectives of the Groundwater			
	Monitoring Program and 2) comply with the applicable regulatory			
	requirements?			
7 Corrective	actions as needed, by date:			

Groundwater Monitoring We	ell Integrity Form
---------------------------	--------------------

Site Name	Plant Hammond - Hutgker			
	PLU O			
Dete field conditione	CAWA-2	-		
ale, neid conditions	-1/30/14, 90 · JUNITY			,
1 Location/I	dentification	yes	no	n/a
а	Is the well visible and accessible?	$\checkmark$		
b	Is the well properly identified with the correct well ID?	V		
С	Is the well in a high traffic area and does the well require protection from traffic?	Â.	$\checkmark$	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	r	·	
2 Protoctivo	Cooing			
a	Is the protective casing free from apparent damage and able to be	/		
	secured?			
b	Is the casing free of degradation or deterioration?	1		
С	Does the casing have a functioning weep hole?	1		
d	Is the annular space between casings clear of debris and water,	.1		
	or filled with pea gravel/sand?	<u></u>		
е	Is the well locked and is the lock in good condition?	V		
3 Surface pa	ad	,		
a	Is the well pad in good condition (not cracked or broken)?	$\checkmark$		
b	Is the well pad sloped away from the protective casing?		( <del></del>	
С	Is the well pad in complete contact with the protective casing?	~		
d	Is the well pad in complete contact with the ground surface and			
	stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	1		
е	Is the pad surface clean (not covered with sediment or debris)?	1		
4 Internal ca	sing			
a	Does the cap prevent entry of foreign material into the well?	$\checkmark$		
h	Is the casing free of kinks or bends, or any obstructions from			
2	foreign objects (such as bailers)?	V		
C	Is the well properly vented for equilibration of air pressure?	~	<del></del>	
d	Is the survey point clearly marked on the inner casing?	-	<del></del> _)	
e	Is the depth of the well consistent with the original well log?		3	
f	Is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to lack of grout or use of slip	1		
	couplings in construction)			
5 Sampling	Groundwater Wells Only:	1		
a	Does well recharge adequately when purged?			
b	If dedicated sampling equipment installed, is it in good condition			
U U	and specified in the approved groundwater plan for the facility?	-		$\mathcal{N}$
С	Does the well require redevelopment (low flow, turbid)?		1	
			<u> </u>	
6 Based on y	our protessional judgement, is the well construction / location			
	Appropriate to 1) achieve the objectives of the Groundwater	1	,	
	monitoring Program and 2) comply with the applicable regulatory	V	P	
	าะนุนและแรง :	ī.	<u>a</u>	
7 Corrective	actions as needed, by date:			

Site Name	11. Staker			
Permit Number				
	6402-3	- :		
Date field conditions	60.322 0 414	-		
	04 30 2014 Dry Mor	Ves	no	n/a
1 Location/I	dentification	yes	no	11/a
а	Is the well visible and accessible?	$\checkmark$		
b	Is the well properly identified with the correct well ID?	$\overline{}$		
С	Is the well in a high traffic area and does the well require			
	protection from traffic?	$\checkmark$		
d	Is the drainage around the well acceptable? (no standing water,			
	nor is well located in obvious drainage flow path)	_/		
2 Protective	Casing			
a	Is the protective casing free from apparent damage and able to be			
	secured?	J		
b	Is the casing free of degradation or deterioration?	~		
С	Does the casing have a functioning weep hole?	$\overline{}$		
d	Is the annular space between casings clear of debris and water,			
	or filled with pea gravel/sand?	~		
e	Is the well locked and is the lock in good condition?	/		
3 Surface pa	ad			
a	Is the well pad in good condition (not cracked or broken)?	1		
b	Is the well pad sloped away from the protective casing?	<u> </u>		
С	Is the well pad in complete contact with the protective casing?	1		
d	Is the well pad in complete contact with the ground surface and			
	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)	1		·
е	Is the pad surface clean (not covered with sediment or debris)?			_
4 Internal ca	sing			
а	Does the cap prevent entry of foreign material into the well?	1		
b	Is the casing free of kinks or bends, or any obstructions from	,	-	
	foreign objects (such as bailers)?			
С	Is the well properly vented for equilibration of air pressure?	1		
d	Is the survey point clearly marked on the inner casing?			
е	Is the depth of the well consistent with the original well log?	/		
f	Is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to lack of grout or use of slip	1		
	couplings in construction)			
5 Sampling:	Groundwater Wells Only:	,		
а	Does well recharge adequately when purged?	$\checkmark$		
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			
С	Does the well require redevelopment (low flow, turbid)?		$\checkmark$	
6 Based on	your professional judgement, is the well construction / location			
·	appropriate to 1) achieve the objectives of the Groundwater			
	Monitoring Program and 2) comply with the applicable regulatory			
	requirements?	1		
7 Corrective	actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

\_\_\_\_\_

ite Name	Hustahr			
ermit Number				
Vell ID	GWA-4	-		
ate, field conditions	09.30-2019 Hot Dry	-		
1 Location/	dentification	yes	no	n/a
	Le the well visible and eccessible?	1		
a	Is the well properly identified with the correct well ID?			
d o	Is the well properly identified with the correct well roguing	<u> </u>		
U	protection from troffic?	./		
d	Is the drainage ground the well eccentable? (ne standing water	<u> </u>		
ŭ	nor is well located in obvious drainage flow path)	$\checkmark$		
0 Desta effe				
2 Protective				
а	scured?	V		
b	Is the casing free of degradation or deterioration?			
С	Does the casing have a functioning weep hole?	1		
d	Is the annular space between casings clear of debris and water,			
	or filled with pea gravel/sand?	$\checkmark$		
е	Is the well locked and is the lock in good condition?	1		
3 Surface p	ad			
a	Is the well pad in good condition (not cracked or broken)?	./		
b	Is the well pad sloped away from the protective casing?	~		
C	Is the well pad in complete contact with the protective casing?	-		
d	Is the well pad in complete contact with the ground surface and			
	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)	1		
е	Is the pad surface clean (not covered with sediment or debris)?			
4 Internal ca	sing			
a	Does the cap prevent entry of foreign material into the well?			
b	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?	1		
с	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?			
e	Is the depth of the well consistent with the original well log?		$\overline{\mathbf{v}}$	
f	Is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to lack of grout or use of slip			
	couplings in construction)	$\checkmark$		
5 Sampling:	Groundwater Wells Only:			
a	Does well recharge adequately when purged?	1		
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			$\sim$
С	Does the well require redevelopment (low flow, turbid)?		$\overline{}$	1
6 Based on	your professional judgement is the well construction / location			
- 20000 011	appropriate to 1) achieve the objectives of the Groundwater			
	Monitoring Program and 2) comply with the applicable regulatory			
	requirements?	1		
		10		
7 Corrective	actions as needed, by date:			
-				

Site Name	Huffaker Rd Landfill	-				
Deta field conditions		-				
ate, neid conditions	Ogisoning clear, sonny, 974	-	20	n/o		
1 Location/	dentification	yes	no	n/a		
a	Is the well visible and accessible?	X				
b	Is the well properly identified with the correct well ID?	$\overline{\mathbf{X}}$				
c C	Is the well in a high traffic area and does the well require					
° °	protection from traffic?		$\times$			
d	Is the drainage around the well acceptable? (no standing water.	—	<u> </u>			
	nor is well located in obvious drainage flow path)	$\checkmark$				
<ul> <li>All second s</li></ul>						
2 Protective	Casing					
а	Is the protective casing free from apparent damage and able to be					
	secured?	<u>_X_</u>		. <u> </u>		. d
b	Is the casing free of degradation or deterioration?		<u>×</u>	7 <b></b>	minor	rust
c	Does the casing have a functioning weep hole?	$\times$				
d	Is the annular space between casings clear of debris and water,					
	or filled with pea gravel/sand?	$\underline{\times}$				
е	Is the well locked and is the lock in good condition?	<u> </u>		o,		
3 Surface n	ad					
a <u>oundoo p</u>	Is the well pad in good condition (not cracked or broken)?	×				
b	Is the well pad sloped away from the protective casing?	×				
c	Is the well pad in complete contact with the protective casing?		:			
d	Is the well pad in complete contact with the ground surface and	<u> </u>				
ŭ	stable? (not undermined by erosion, animal burrows, and does not					
	move when stepped on)	X				
e	Is the pad surface clean (not covered with sediment or debris)?	$\overline{\times}$		3		
Ū				<del></del>		
4 Internal ca	asing	r				
а	Does the cap prevent entry of foreign material into the well?	<u>×</u>				
b	Is the casing free of kinks or bends, or any obstructions from	~				
	foreign objects (such as bailers)?			°		
С	Is the well properly vented for equilibration of air pressure?	<u>×</u>		88		
d	Is the survey point clearly marked on the inner casing?	X				
е	Is the depth of the well consistent with the original well log?	×				
f	Is the casing stable? (or does the pvc move easily when touched					
	or can it be taken apart by hand due to lack of grout or use of slip	~				
	couplings in construction)	<u>×</u>				
5 Sampling	Groundwater Wells Only:					
a <u>bamping</u> .	Does well recharge adequately when purged?	X				
b	If dedicated sampling equipment installed is it in good condition		;;			
5	and specified in the approved groundwater plan for the facility?			X		
c	Does the well require redevelopment (low flow turbid)?		$\overline{\mathbf{X}}$	8		
Ū			_/			
6 Based on	your professional judgement, is the well construction / location					
	appropriate to 1) achieve the objectives of the Groundwater					
	Monitoring Program and 2) comply with the applicable regulatory					
	requirements?	1				
7 0	antions as peopled, built-t-			~		
/ Corrective	e actions as needed, by date:					

	Groundwater Monitoring Well Integrity Form			
Site Name	Plant Hammond-Huppaker			
Permit Number				
Well ID	(IWC-5	_		
hate, field conditions	10/1/19, 75° ; sunny			1.
1 Location/	dentification	yes	no	n/a
a	Is the well visible and accessible?	$\checkmark$		
b	Is the well properly identified with the correct well ID?	r	·	
С	Is the well in a high traffic area and does the well require			
	protection from traffic?		V	
d	Is the drainage around the well acceptable? (no standing water,	V		
	nor is well located in obvious drainage flow path)	<u> </u>		
2 Protective	Casing			
а	Is the protective casing free from apparent damage and able to be			
	secured?	<u> </u>		
b	Is the casing free of degradation or deterioration?	-		
c	Les the appular space between easings elegenet of debris and water			
u	or filled with pea gravel/sand?	1		
e	Is the well locked and is the lock in good condition?	~		
			<u> </u>	
3 Surface pa	ad La Alexandria de la litta (a la calendaria de la calendaria)			
a	Is the well pad in good condition (not cracked or broken)?	<u></u>		
D	Is the well had sloped away from the protective casing?			
d	Is the well pad in complete contact with the ground surface and	<u> </u>		
ŭ	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)	v		
е	Is the pad surface clean (not covered with sediment or debris)?		~	
4 Internal ca	asina			
a	Does the cap prevent entry of foreign material into the well?	$\checkmark$		
b	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?	~		
С	Is the well properly vented for equilibration of air pressure?	~		
d	Is the survey point clearly marked on the inner casing?	<u>~</u>		
e	Is the depth of the well consistent with the original well log?	$\checkmark$		5
I	or can it be taken apart by band due to lack of grout or use of slin			
	couplings in construction)	1		
			·	
5 <u>Sampling:</u>	Groundwater Wells Only:	1		
a	If dedicated sampling equipment installed is it in good condition			
b	and specified in the approved groupdwater plan for the facility?			
С	Does the well require redevelopment (low flow, turbid)?			<u> </u>
-			_ <u></u> _	
6 Based on	your professional judgement, is the well construction / location			
	Appropriate to 1) achieve the objectives of the Groundwater			
	requirements?	1		
	requiemente:	<u> </u>		
7 Corrective	actions as needed, by date:			

	Groundwater Monitoring well integrity Form			
Site Name	Plant Hannahd - Hußbaker			
Permit Number	- ight realition a consumer	-		
		-		
Deta field conditions	GNC-6			
ate, neid conditions	IOII THY TH' SUNY			
t Leestien/		yes	no	n/a
Location/I		.1		
a	Is the well visible and accessible?			
D	is the well properly identified with the correct well ID?			
С	is the well in a high traffic area and does the well require			
	protection from traffic?			
d	Is the drainage around the well acceptable? (no standing water,	/		
	nor is well located in obvious drainage flow path)			-
2 Protoctivo	Casing			
	Is the protective engine free from experient demage and able to be			
a	socured?	/		
h	le the easing free of degradation or deterioration?		$\longrightarrow$	
D	Deep the paping hous a functioning user hale?			
C	to the capity have a functioning weep note?			
a	is the annular space between casings clear of debris and water,	$\checkmark$		
	or lilied with pea gravel/sand?			
е	is the well locked and is the lock in good condition?	<u> </u>		
3 Surface or	he			
a	Is the well pad in good condition (not cracked or broken)?	1		
∽ h	Is the well pad sloped away from the protective casing?			
C	Is the well had in complete contact with the protective casing?			
d	Is the well had in complete contact with the ground surface and			
a	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)	./		
۵	Is the pad surface clean (not covered with sediment or debris)?			
C	to the pad surface clean (not covered with sediment of debits):			
4 Internal ca	sing			
а	Does the cap prevent entry of foreign material into the well?	1		
b	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?	$\checkmark$		
С	Is the well properly vented for equilibration of air pressure?	~		
d	Is the survey point clearly marked on the inner casing?	~		
е	Is the depth of the well consistent with the original well log?			
f	Is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to lack of grout or use of slip	/		
	couplings in construction)	<b></b>	n.	
	2 X 2 X			
5 Sampling:	Groundwater Wells Only:	1		
а	Does well recharge adequately when purged?	-		
b	If dedicated sampling equipment installed, is it in good condition			1
	and specified in the approved groundwater plan for the facility?			<u> </u>
С	Does the well require redevelopment (low flow, turbid)?			
6 Doood on 1	our professional judgement is the well sensitive (1) and			
o based on y	your professional judgement, is the well construction / location	1		
	Appropriate to 1) achieve the objectives of the Groundwater	/		
	requiremente?	/		
7 Corrective	actions as needed, by date:			

1

Site Name Permit Number Well ID Date, field conditions	Plant Hammond - Huffaker Ginc-7	-		
,		ves	no	n/a
1 Location/	Identification	,		
а	Is the well visible and accessible?	1		
b	Is the well properly identified with the correct well ID?	~		
С	Is the well in a high traffic area and does the well require protection from traffic?		~	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)			
2 Protective	Casing			
a	Is the protective casing free from apparent damage and able to be secured?			
b	Is the casing free of degradation or deterioration?			0
С	Does the casing have a functioning weep hole?	~		
d	Is the annular space between casings clear of debris and water,			
	or filled with pea gravel/sand?	~		
е	Is the well locked and is the lock in good condition?			
3 Surface p	ad			
а	Is the well pad in good condition (not cracked or broken)?	/		
b	Is the well pad sloped away from the protective casing?	~		
С	Is the well pad in complete contact with the protective casing?	$\overline{}$		
d	Is the well pad in complete contact with the ground surface and			
	stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	~		
е	Is the pad surface clean (not covered with sediment or debris)?	~		
	· · · · · · · · · · · · · · · · · · ·			
4 Internal ca	asing	1		
a	Does the cap prevent entry of foreign material into the well?			
b	Is the casing free of kinks or bends, or any obstructions from	$\checkmark$		
	toreign objects (such as bailers)?			
С	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?	$\checkmark$		
е	Is the depth of the well consistent with the original well log?	~		
f	is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to lack of grout or use of slip	/		
	couplings in construction)	<u> </u>		
5 Sampling	Groundwater Wells Only:			
a	Does well recharge adequately when purged?			
b b	If dedicated sampling equipment installed, is it in good condition			
Č,	and specified in the approved groundwater plan for the facility?			$\checkmark$
C	Does the well require redevelopment (low flow, turbid)?			
0		<u> </u>	<u> </u>	
6 Based on	your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	<u> </u>		
7 Corrective	actions as needed, by date:			

Site Name	Plant Hammond - HUPPaker	-		
Permit Number		-		
Well ID	Lawc-8			
Tate, field conditions	10/11/19/ SVNNY / 720F	<b>-</b> 5		
1 Location/L	dentification	yes	no	n/a
	Le the well visible and accessible?	$\checkmark$		
a	Is the well properly identified with the correct well ID?		<u> </u>	
D	Is the well property identified with the correct well roguing	<u> </u>		
U	protection from traffic?	1	/	
d	Is the drainage around the well accentable? (no standing water			
ŭ	nor is well located in obvious drainage flow path)	1		
	nor is well located in obvious dramage now pathy			
2 Protective	Casing			
а	Is the protective casing free from apparent damage and able to be	/		
	secured?	1		
b	Is the casing free of degradation or deterioration?	$\overline{\mathcal{I}}$		
С	Does the casing have a functioning weep hole?	V		
d	Is the annular space between casings clear of debris and water,			
	or filled with pea gravel/sand?			
е	Is the well locked and is the lock in good condition?	$\leq$		
3 Surface pa	he			
a	Is the well pad in good condition (not cracked or broken)?			
b	Is the well pad sloped away from the protective casing?	1		
C	Is the well pad in complete contact with the protective casing?	T		
d	Is the well pad in complete contact with the ground surface and	<u> </u>		
_	stable? (not undermined by erosion, animal burrows, and does not	1		
	move when stepped on)	V		
е	Is the pad surface clean (not covered with sediment or debris)?	$\overline{}$		
1 Internal on	sing			
4 <u>Internal ca</u>	Does the can provent entry of foreign material into the well?			
a b	Is the casing free of kinks or bends, or any obstructions from	<u> </u>		
U	foreign objects (such as bailers)?	$\checkmark$		
C	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?			
ŭ O	Is the denth of the well consistent with the original well log?	<u> </u>		
f	Is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to lack of grout or use of slip	,		
	couplings in construction)			
5.0				
5 Sampling:	Groundwater Wells Only:	/	4	
a	boes well recharge adequately when purged?	<i>v.</i>	<u>~</u>	
D	If dedicated sampling equipment installed, is it in good condition			/
•	and specified in the approved groundwater plan for the facility?		-	
С	Does the well require redevelopment (low how, turbid)?			
6 Based on v	your professional judgement, is the well construction / location			
	appropriate to 1) achieve the objectives of the Groundwater	1		
	Monitoring Program and 2) comply with the applicable regulatory			
	requirements?	1		
7 Comosting	actions as peeded by detay			
/ Corrective	autoris as needed, by date:			

Site Name	Hiffakur Rd Londfill	_				
Permit Number	·	-				
Well ID	GWC-9					
<b>Tate, field conditions</b>	10/01/19 Sunny, 91°1=			-		
1 Location/	Identification	yes	no	n/a		
а	Is the well visible and accessible?	$\checkmark$				
b	Is the well properly identified with the correct well ID?	$\overline{\mathbf{X}}$		5		
С	Is the well in a high traffic area and does the well require					
	protection from traffic?		X			
d	Is the drainage around the well acceptable? (no standing water,			****		
	nor is well located in obvious drainage flow path)	$\underline{X}$				
2 Protective	e Casing					
а	Is the protective casing free from apparent damage and able to be					
	secured?	X				
b	Is the casing free of degradation or deterioration?		×	η	<i>Ninor</i>	rust
С	Does the casing have a functioning weep hole?	$\overline{\times}$				
d	Is the annular space between casings clear of debris and water,					
	or filled with pea gravel/sand?	<u>×</u>				
е	Is the well locked and is the lock in good condition?	<u>×</u>				
3 <u>Surface p</u>	ad					
а	Is the well pad in good condition (not cracked or broken)?	$\times$				
b	Is the well pad sloped away from the protective casing?	$\overline{\mathbf{X}}$				
С	Is the well pad in complete contact with the protective casing?	$\overline{\mathbf{X}}$				
d	Is the well pad in complete contact with the ground surface and					
	stable? (not undermined by erosion, animal burrows, and does not	×				
	move when stepped on)					
е	Is the pad surface clean (not covered with sediment or debris)?	<u> </u>		·		
4 Internal ca	asing					
а	Does the cap prevent entry of foreign material into the well?	X				
b	Is the casing free of kinks or bends, or any obstructions from					
	foreign objects (such as bailers)?	<u>×</u>				
С	Is the well properly vented for equilibration of air pressure?	X				
d	Is the survey point clearly marked on the inner casing?	×				
e	Is the depth of the well consistent with the original well log?					
1	is the casing stable? (or does the pvc move easily when touched					
	couplings in construction)	X				
5 Compling	Groupdwater Walls Ophy			S		
o <u>oampling</u> .	Does well recharge adequately when purged?	×				
a h	If dedicated sampling equipment installed, is it in good condition					
b	and specified in the approved groundwater plan for the facility?			×		
С	Does the well require redevelopment (low flow, turbid)?					
6 Based on	vour professional judgement, is the well construction / location					
	appropriate to 1) achieve the objectives of the Groundwater					
	Monitoring Program and 2) comply with the applicable regulatory					
	requirements?					
7 Corrective	actions as needed, by date:					

Site Name	Huffeller			
Permit Number				
Well ID	GWC-10	5		
nate, field conditions	10.01.2019 Hot dry	VAS	no	n/a
1 Location/le	dentification	yes	no	Tira
а	Is the well visible and accessible?			
b	Is the well properly identified with the correct well ID?			
С	Is the well in a high traffic area and does the well require	/		
	protection from traffic?			
d	Is the drainage around the well acceptable? (no standing water,	/		
	nor is well located in obvious drainage flow path)			
2 Protective	Casing			
а	Is the protective casing free from apparent damage and able to be	/		
	secured?			<u></u>
b	Is the casing free of degradation or deterioration?			
C	Loes the casing have a functioning weep hole?		3 <del></del>	
ŭ	or filled with pop gravel/sand?	_		
e	Is the well locked and is the lock in good condition?			
•		<u> </u>	5 <del></del>	
3 Surface pa	ad	/		
a	Is the well pad in good condition (not cracked or broken)?			
D	Is the well pad sloped away from the protective casing?			
c	Is the well pad in complete contact with the ground surface and			
u	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)	1		
e	Is the pad surface clean (not covered with sediment or debris)?		~	
, i i i i i i i i i i i i i i i i i i i	······································			
4 Internal ca	ising			
a	Le the easing free of kinks or hends, or any obstructions from			·
D	foreign objects (such as bailers)?	_		
C	Is the well properly vented for equilibration of air pressure?	<u> </u>		
b	Is the survey point clearly marked on the inner casing?	- <u>-</u>	53	
e	Is the depth of the well consistent with the original well log?	<u> </u>	~	
f	Is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to lack of grout or use of slip	/		
	couplings in construction)			
5 Sampling:	Groundwater Wells Only:			
a	Does well recharge adequately when purged?			
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?		·	
С	Does the well require redevelopment (low flow, turbid)?		2	
6 Based on	your professional judgement, is the well construction / location			
	appropriate to 1) achieve the objectives of the Groundwater			
	Monitoring Program and 2) comply with the applicable regulatory	1		
	requirements?	_/		
7 Corrective	actions as needed by date:			
	actions as needed, by date.			
-				

Site Name Permit Number	Hoffaker	•		
Well ID	6-12(-18			
Pate, field conditions	D^0/-2019	ŝ		
,,		yes	no	n/a
1 Location/le	dentification			
а	Is the well visible and accessible?	~		
b	Is the well properly identified with the correct well ID?	1		
С	Is the well in a high traffic area and does the well require			
	protection from traffic?	$\checkmark$		
d	Is the drainage around the well acceptable? (no standing water,			
	nor is well located in obvious drainage flow path)			
2 Protostivo	Cooing			
2 <u>FIDIECTIVE</u>	Let the protective casing free from apparent damage and able to be			
a	secured?	./		
h	Is the casing free of degradation or deterioration?	<u></u>	—	
C	Does the casing have a functioning ween hole?	<u></u>	<del></del>	
d	Is the annular space between casings clear of debris and water			
ŭ	or filled with pea gravel/sand?	1		
e	Is the well locked and is the lock in good condition?	-		
Ū		<u> </u>		
3 Surface pa	ad			
а	Is the well pad in good condition (not cracked or broken)?			
b	Is the well pad sloped away from the protective casing?	_/		
С	Is the well pad in complete contact with the protective casing?	_/		
d	Is the well pad in complete contact with the ground surface and			
	stable? (not undermined by erosion, animal burrows, and does not	1		
	move when stepped on)			
e	Is the pad surface clean (not covered with sediment or debris)?	<u> </u>		
4 Internal ca	sina			
a	Does the cap prevent entry of foreign material into the well?	V		
b	Is the casing free of kinks or bends, or any obstructions from			
-	foreign objects (such as bailers)?	1		
С	Is the well properly vented for equilibration of air pressure?		-	
d	Is the survey point clearly marked on the inner casing?	~	XTO	
е	Is the depth of the well consistent with the original well log?	×	~	
f	Is the casing stable? (or does the pvc move easily when touched	P		
	or can it be taken apart by hand due to lack of grout or use of slip	/		
	couplings in construction)	<u> </u>		
5 Compling	Croundwater Walls Only			
5 <u>Sampling:</u>	Groundwater weils Only:	./		
a	If dedicated sampling equinment installed, is it in good condition			
U	and specified in the approved groundwater plan for the facility?			/
C	Does the well require redevelopment (low flow, turbid)?			
0				
6 Based on	your professional judgement, is the well construction / location			
	appropriate to 1) achieve the objectives of the Groundwater			
	Monitoring Program and 2) comply with the applicable regulatory	1		
	requirements?	N		
7.0	actions as peopled by data;			11
/ Corrective	actions as needed, by date:			
-				
1				

Site Name Permit Number	Huffaleer	•		
Well ID		-		
Tate, field conditions	(0:01-7019 D: (4)-t			
,		ves	no	n/a
1 Location/I	dentification	,		
a	Is the well visible and accessible?	V		
b	Is the well properly identified with the correct well ID?	$\overline{}$		P
С	Is the well in a high traffic area and does the well require			
	protection from traffic?			
d	Is the drainage around the well acceptable? (no standing water,	(		
	nor is well located in obvious drainage flow path)	<u>_/</u>		
2 Protective	Casino			
a	Is the protective casing free from apparent damage and able to be			
	secured?	1		
b	Is the casing free of degradation or deterioration?	1		******
С	Does the casing have a functioning weep hole?	5		
d	Is the annular space between casings clear of debris and water,			
	or filled with pea gravel/sand?			
е	Is the well locked and is the lock in good condition?			
3 Surface p	ad			
o <u>Sunace pa</u>	au Is the well had in good condition (not cracked or broken)?	1		
a h	Is the well pad sloped away from the protective casing?	<u> </u>		
C	Is the well pad in complete contact with the protective casing?	<u> </u>	<del></del>	
d	Is the well pad in complete contact with the ground surface and	<u> </u>		
-	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)		1	
е	Is the pad surface clean (not covered with sediment or debris)?	$\checkmark$		
4 Internal ca	asing			
a	Does the cap prevent entry of foreign material into the well?	/		
b	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?			
С	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?	<u> </u>		
е	Is the depth of the well consistent with the original well log?		<u> </u>	
f	Is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to tack of grout or use of slip	$\checkmark$		
	couplings in construction)		<u> </u>	
5 Sampling:	Groundwater Wells Only:			
а	Does well recharge adequately when purged?	V		
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			
С	Does the well require redevelopment (low flow, turbid)?		$\checkmark$	
6 Deceder				
o based on	appropriate to 1) achieve the objectives of the Groundwater			
	Monitoring Program and 2) comply with the applicable regulatory			
	requirements?			
		<u> </u>		
7 Corrective	actions as needed, by date:			
-				
-				

Signature and Seal of PE/PG responsible for inspection

ŝ.

Site Name Permit Number	Husfakor	-		
	(1)/-20			
Date field conditions				
	_ IC CITY DRY/HOT	ves	no	n/a
1 Location/I	dentification	,00	110	in a
a	Is the well visible and accessible?	M		
b	Is the well properly identified with the correct well ID?	7		
С	Is the well in a high traffic area and does the well require			
	protection from traffic?	<u>    Y     </u>		
d	Is the drainage around the well acceptable? (no standing water,			
	nor is well located in obvious drainage flow path)	<u> </u>		
2 Protective	Casing			
	Is the protective casing free from apparent damage and able to be			
a	secured?	M		
h	Is the casing free of degradation or deterioration?	<u>v</u>		
c	Does the casing have a functioning weep hole?			
d	Is the annular space between casings clear of debris and water.	<u> </u>		
-	or filled with pea gravel/sand?	4		
е	Is the well locked and is the lock in good condition?	V		
	<b>5</b>	<u> </u>		
3 <u>Surface pa</u>	ad	,		
a	Is the well pad in good condition (not cracked or broken)?	<u> </u>		
b	Is the well pad sloped away from the protective casing?			<u> </u>
С	Is the well pad in complete contact with the protective casing?	/		
a	is the well pad in complete contact with the ground surface and			
	stable? (not undermined by erosion, animal burrows, and does not		1	
0	nove when stepped on)			
е	is the pad surface clean (not covered with sediment of debris)?			
4 Internal ca	sing			
а	Does the cap prevent entry of foreign material into the well?	1		
b	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?			
С	Is the well properly vented for equilibration of air pressure?	1		
d	Is the survey point clearly marked on the inner casing?	<ul> <li>✓</li> </ul>		
е	Is the depth of the well consistent with the original well log?		<u> </u>	
f	Is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to lack of grout or use of slip	,		
	couplings in construction)	<u>~</u>		. <u> </u>
5 Sampling:	Groundwater Wells Only:			
a	Does well recharge adequately when purged?		1	
b	If dedicated sampling equipment installed, is it in good condition			
	and specified in the approved groundwater plan for the facility?			~
С	Does the well require redevelopment (low flow, turbid)?		<u> </u>	
6 Based on y	your professional judgement, is the well construction / location			
	appropriate to 1) achieve the objectives of the Groundwater	,		
	Monitoring Program and 2) comply with the applicable regulatory			
	requirements :	<u> </u>		
7 Corrective	actions as needed, by date:			

Signature and Seal of PE/PG responsible for inspection

Name	Huffaker	-		
mit Number		-		
	GWC-21			
e, field conditions	10-01-2019 Dry/Ket	1/00	20	n/o
1 Location/I	dentification	yes	no	n/a
а	Is the well visible and accessible?	1		
b	Is the well properly identified with the correct well ID?			·
С	Is the well in a high traffic area and does the well require			
	protection from traffic?	$\checkmark$		
d	Is the drainage around the well acceptable? (no standing water,			
	nor is well located in obvious drainage flow path)			
2 Protective	Casing			
a	Is the protective casing free from apparent damage and able to be			
	secured?	1		
b	Is the casing free of degradation or deterioration?			
с	Does the casing have a functioning weep hole?	<u> </u>		
d	Is the annular space between casings clear of debris and water,			
	or filled with pea gravel/sand?	V		
е	Is the well locked and is the lock in good condition?	~		
3 Surface pa	d			
a	Is the well pad in good condition (not cracked or broken)?	./		
b	Is the well pad sloped away from the protective casing?	-		
C	Is the well pad in complete contact with the protective casing?	1		
d	Is the well pad in complete contact with the ground surface and			
	stable? (not undermined by erosion, animal burrows, and does not			
	move when stepped on)	1		
е	Is the pad surface clean (not covered with sediment or debris)?		V	
4 Internal ca	sing			
a	Does the cap prevent entry of foreign material into the well?	1		
b	Is the casing free of kinks or bends, or any obstructions from			
	foreign objects (such as bailers)?	1		
С	Is the well properly vented for equilibration of air pressure?			
d	Is the survey point clearly marked on the inner casing?	1		
e	Is the depth of the well consistent with the original well log?		V	
f	Is the casing stable? (or does the pvc move easily when touched			
	or can it be taken apart by hand due to lack of grout or use of slip	,		
	couplings in construction)			
5 <u>Sampling:</u>	Groundwater Wells Only:	-		
a	Does well recharge adequately when purged?	<u> </u>		
b	It dedicated sampling equipment installed, is it in good condition			/
	and specified in the approved groundwater plan for the facility?			<u> </u>
С	Does the well require redevelopment (low flow, turbid)?			
6 Based on y	our professional judgement, is the well construction / location			
	appropriate to 1) achieve the objectives of the Groundwater			
	Monitoring Program and 2) comply with the applicable regulatory	1		
	requirements?			
7 Corrective	actions as needed, by date:			
	autono ao noodod, by dato.			

Permit Number Well ID Pate, field conditions I Location/Identification I to cation/Identification I to cation I the well repert of the correct well ID? I to cation/Identification I to correct well ID? I to cation from traffic? I to the well pad in complete contact with the protective casing? I to the well pad in complete contact with the ground surface and the table? I to the well pad in complete contact with the ground surface and I to the surface from from foreign big etc (and the surface from foreign material into the well? I to the casing free of k	Site Name	Huflaker	-		
Well ID <i>CwG-22 IweG-221 IweG-221</i> Paste, field conditions <i>IweG-221 IweG-221 IweG-221</i> a       Is the well visible and accessible? <i>IweG-221</i> b       Is the well in a high traffic area and does the well require protection from traffic? <i>IweG-221</i> d       Is the well in a high traffic area and does the well require protection from traffic? <i>IweG-222</i> d       Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)            2 <i>Protective Casing Is the annular space between casings clear of debris and water, or ifield with pea gravel/sand?</i> d          Is the well pad in good condition (not cracked or broken)?              b            Is the well pad in complete contact with the protective casing?              d                     d                Imedeal vi	Permit Number		-		
*Nate, field conditions <u>10 * 0 + 2e14</u> (pt 4 + yes no n/a)          1 <u>Location/Identification</u> yes no n/a         a       Is the well visible and accessible?       /         b       Is the well properly identified with the correct well ID?       /         c       Is the well properly identified with the correct well ID?       /         c       Is the well in a high traffic area and does the well require protection from traffic?       //         d       Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)       /         2       Protective Casing       /       /         a       Is the projective casing free from apparent damage and able to be secured?       /         b       Is the casing free of degradation or deterioration?       /         c       Does the casing have a functioning weep hole?       /         d       Is the well pad in good condition (not cracked or broken)?       /         e       Is the well pad in complete contact with the protective casing?       /         d       Is the well pad in complete contact with the protective casing?       /         c       Is the well pad in complete contact with the protective casing?       /         d       Is the well pad in complete contact with the protective casing?       /         c <td< td=""><td>Well ID</td><td>GWC-ZZ</td><td></td><td></td><td></td></td<>	Well ID	GWC-ZZ			
1       Location/Identification         a       Is the well properly identified with the correct well ID?         b       Is the well properly identified with the correct well ID?         c       Is the well in a high traffic area and does the well require protection from traffic?         d       Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)         2       Protective Casing         a       Is the prolective casing free of degradation or deterioration?         c       Does the casing free of degradation or deterioration?         d       Is the annular space between casings clear of debris and water, or filled with pea grave/sand?         e       Is the well pad in good condition (not cracked or broken)?         b       Is the well pad in complete contact with the ground surface and stable? (no undermined by erosion, animal burrows, and does not move when stepped on)         e       Is the well pad in complete contact with the ground surface and stable? (no undermined by erosion, animal burrows, and does not move when stepped on)         e       Is the well pad in complete contact with the ground surface and does not move when stepped on?         e       Is the pad surface clean (not covered with sediment or debris?)?         c       Is the well consist the well consist the well?         d       Is the assing free of kinks or bends, or any obstructions from foreign objects (such as balier?)	'ate, field conditions	10-01-2019 Dry Hot	-		
a       Is the well visible and accessible?         b       Is the well orporphy identified with the correct well ID?         c       Is the well in a high traffic area and does the well require protection from traffic?         d       Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)         2       Protective Casing         a       Is the protective casing free of degradation or deterioration?         c       Does the casing free of degradation or deterioration?         c       Does the casing have a functioning weep hole?         d       Is the annular space between casings clear of debris and water, or filled with pea grave/sand?         e       Is the well pad in good condition (not cracked or broken)?         b       Is the well pad in good condition (not cracked or broken)?         b       Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)         e       Is the pad surface clean (not covered with sediment or debris)?         c       Is the assurface clean (not covered with sediment or debris)?         c       Is the well property vented for equilibration of air pressure?         d       Is the well pad in complete contact with the ground surface and foreign by erosion, animal burrows, and does not move when stepped on)         e       Is the asurg preve	1 Location/L	dentification	yes	no	n/a
a       Is the well property identified with the correct well ID?       V         b       Is the well in a high traffic area and does the well require protection from traffic?       V         d       Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)       V         2       Protective Casing       V       V         a       Is the protective casing free from apparent damage and able to be secured?       V       V         b       Is the casing free of degradation or deterioration?       V       V       V         c       Does the casing have a functioning weep hole?       V       V       V       V         c       Does the casing have a functioning weep hole?       V       V       V       V       V         e       Is the well pad in good condition (not cracked or broken)?       V	Location/i	Le the well visible and assessible?	/		
b       is the well in a high traffic area and does the well require protection from traffic?         d       is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)       Image: transmission of the secured?         2       Protective Casing       a       Is the protective casing free from apparent damage and able to be secured?         b       Is the casing free of degradation or deterioration?       Image: transmission of the secured?         c       Does the casing have a functioning weep hole?       Image: transmission of the secured?         d       Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?       Image: transmission of the secure secure of the secure of the	a	Is the well properly identified with the servest well ID0			-
c       is the even marking traditional area and obes the Weil require protection from traffic?         d       Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)         2       Protective Casing         a       Is the protective casing free from apparent damage and able to be secured?         b       Is the casing free of degradation or deterioration?         c       Does the casing have a functioning weep hole?         d       Is the annular space between casings clear of debris and water, or filled with pag gravel/sand?         e       Is the well pad is good condition (not cracked or broken)?         b       Is the well pad in good condition (not cracked or broken)?         b       Is the well pad is complete contact with the protective casing?         c       Is the well pad is complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)         e       Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)         e       Is the pad surface clean (not covered with sediment or debris)?         c       Is the well property vented for equilibration of air pressure?         d       Is the casing free of kinks or bends, or any obstructions from foreign objects (such as baliers)?         c       Is the well property vented for eq	D	Is the well properly identified with the correct well ID?			
a ls the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path) 2 Protective Casing a ls the protective casing free from apparent damage and able to be secured? b ls the casing free of degradation or deterioration? c Does the casing free of degradation or deterioration? c Does the casing have a functioning weep hole? d ls the annular space between casings clear of debris and water, or filled with pea gravel/sand? e ls the well locked and is the lock in good condition? 3 Surface pad a ls the well pad in good condition (not cracked or broken)? b ls the well pad sloped away from the protective casing? c is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on) e ls the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on) e ls the pad surface clean (not covered with sediment or debris)? 4 Internal casing a Does the casin gree of kinks or bends, or any obstructions from foreign objects (such as bailers)? c Is the well properly vented for equilibration of air pressure? d Is the easing stable? (or does the proce move easily when touched or can it be taken apart by hand due to lack of grout or use of slip cuplings in construction) 5 Sampling: Groundwater Wells Only: a Does well recharge adequately when purged? b ff dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility? c Does the well require redevelopment (low flow, turbid)? 6 Based on your professional judgement, is the well construction / location / appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory regulatory	С	is the well in a high traffic area and does the well require			
a       is the dramage ardund the well acceptable? (no standing watter, nor is well located in obvious dramage flow path)       ✓         2       Protective Casing <ul> <li>a</li> <li>Is the protective casing free from apparent damage and able to be secured?</li> <li>b</li> <li>b</li> <li>the casing free of degradation or deterioration?</li> <li>✓</li> <li>✓</li> <li>C</li> <li>Does the casing free of degradation or deterioration?</li> <li>✓</li> <li>✓</li> <li>C</li> <li>Does the casing free of degradation or deterioration?</li> <li>✓</li> <li>✓</li> <li>Standace pad</li> <li>a</li> <li>Is the well pade between casings clear of debris and water, or filled with pea gravel/sand?</li> <li>e</li> <li>Is the well pad in good condition (not cracked or broken)?</li> <li>✓</li> <li>✓</li> <li>Starface pad</li> <li>a</li> <li>Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)</li> <li>e</li> <li>Is the pad surface clean (not covered with sediment or debris)?</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>Is the well pade on shall be? (not underwined by erosion, animal burrows, and does not move when stepped on)</li> <li>Is the pad surface clean (not covered with sediment or debris)?</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>✓&lt;</li></ul>		protection from tranc?			
Protective Casing         a       Is the protective casing free from apparent damage and able to be secured?         b       Is the casing free of degradation or deterioration?         c       Does the casing have a functioning weep hole?         d       Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?         e       Is the well locked and is the lock in good condition?         z	a	is the drainage around the well acceptable? (no standing water,	./		
2 Protective Casing         a       Is the protective casing free from apparent damage and able to be secured?         b       Is the casing free of degradation or deterioration?         c       Does the casing have a functioning weep hole?         d       Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?         e       Is the well pad in good condition (not cracked or broken)?         b       Is the well pad in good condition (not cracked or broken)?         b       Is the well pad in complete contact with the protective casing?         c       Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)         e       Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?         c       Is the well pad in complete contact with sediment or debris)?         e       Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?         c       Is the well properly vented for equilibration of air pressure?         d       Is the depth of the well consistent with the original well log?         f       Is the casing stable? (or does the pxc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)         f       Is the casing tadele? Only:         a       Doe		nor is well located in obvious drainage flow path)	<u>_v</u>		
a       Is the protective casing free from apparent damage and able to be secured?         b       Is the casing free of degradation or deterioration?         c       Does the casing have a functioning weep hole?         d       Is the annular space between casings clear of debris and water, or filled with pae gravel/sand?         e       Is the well locked and is the lock in good condition?         3       Surface pad         a       Is the well pad in good condition (not cracked or broken)?         b       Is the well pad in complete contact with the protective casing?         c       Is the well pad in complete contact with the protective casing?         d       Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)         e       Is the pad surface clean (not covered with sediment or debris)?         e       Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?         c       Is the surey point clearly marked on the inner casing?         d       Is the easing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)         f       Is the depth of the well consistent with the original well log?         f       Is the depth of the approved groundwater plan for the facility?         d       Is t	2 Protective	Casing			
secured?       V         b       Is the casing free of degradation or deterioration?         c       Does the casing have a functioning weep hole?         d       Is the annular space between casings clear of debris and water, or filled with pea grave/sand?         e       Is the well locked and is the lock in good condition?         3       Surface pad         a       Is the well pad in good condition (not cracked or broken)?         b       Is the well pad in complete contact with the protective casing?         c       Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)         e       Is the casing free of kinks or bends, or any obstructions from foreign objects (such as ballers)?         4       Internal casing         a       Does the casing tree of kinks or bends, or any obstructions from foreign objects (such as ballers)?         c       Is the well properly vented for equilibration of air pressure?         d       Is the survey point clearly marked on the inner casing?         f       Is the casing stable? (or does the pxo move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)         5       Sampling: Groundwater Wells Only:         a       Does well recharge adequately when purged?          f       Is	a	Is the protective casing free from apparent damage and able to be			
b       Is the casing free of degradation or deterioration?       Image: Construction of the set of the s		secured?	$\checkmark$		
c       Does the casing have a functioning weep hole?       Image: Comparison of the second state	b	Is the casing free of degradation or deterioration?	1		
d       Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?       /         e       Is the well locked and is the lock in good condition?       /         3       Surface pad       /         a       Is the well pad in good condition (not cracked or broken)?       /         b       Is the well pad in complete contact with the protective casing?       /         c       Is the well pad in complete contact with the protective casing?       /         d       Is the well pad in complete contact with the protective casing?       /         d       Is the well pad in complete contact with the protective casing?       /         d       Is the well pad in complete contact with the protective casing?       /         d       Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)       /         e       Is the pad surface clean (not covered with sediment or debris)?       /         d       Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?       /         c       Is the well properly vented for equilibration of air pressure?       /         d       Is the survey point clearly marked on the inner casing?       /         e       Is the depth of the well consistent with the original well log?	С	Does the casing have a functioning weep hole?		$\overline{}$	
<ul> <li>or filled with pea gravel/sand?</li> <li>e Is the well locked and is the lock in good condition?</li> <li>3 Surface pad</li> <li>a Is the well pad in good condition (not cracked or broken)?</li> <li>b Is the well pad sloped away from the protective casing?</li> <li>c Is the well pad in complete contact with the protective casing?</li> <li>d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)</li> <li>e Is the pad surface clean (not covered with sediment or debris)?</li> <li>4 Internal casing</li> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well property vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the prove move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 Sampling: Groundwater Wells Only:</li> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	d	Is the annular space between casings clear of debris and water,		<u> </u>	
<ul> <li>e Is the well locked and is the lock in good condition?</li> <li>3 Surface pad <ul> <li>a Is the well pad in good condition (not cracked or broken)?</li> <li>b Is the well pad sloped away from the protective casing?</li> <li>c Is the well pad in complete contact with the protective casing?</li> <li>d Is the well pad in complete contact with the protective casing?</li> <li>d Is the well pad in complete contact with the protective casing?</li> <li>d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)</li> <li>e Is the pad surface clean (not covered with sediment or debris)?</li> </ul> </li> <li>4 <u>Internal casing</u> <ul> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the deapth of the well consistent with the original well log?</li> <li>p</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> </ul> </li> <li>5 <u>Sampling: Groundwater Wells Only:</u> <ul> <li>a Does well require redevelopment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>		or filled with pea gravel/sand?	1		
3 Surface pad a       Is the well pad in good condition (not cracked or broken)?       ✓         b       Is the well pad in complete contact with the protective casing?       ✓         c       Is the well pad in complete contact with the protective casing?       ✓         d       Is the well pad in complete contact with the protective casing?       ✓         d       Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)       ✓         e       Is the pad surface clean (not covered with sediment or debris)?       ✓         4       Internal casing       ✓         a       Does the cap prevent entry of foreign material into the well?       ✓         b       Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?       ✓         c       Is the well properly vented for equilibration of air pressure?       ✓         d       Is the survey point clearly marked on the inner casing?       ✓         e       Is the death of the well consistent with the original well log?       Ø         f       Is the casing stable? (or does the proc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)       ✓         5       Sampling: Groundwater Wells Only:       ✓       ✓         b	е	Is the well locked and is the lock in good condition?	~		
<ul> <li>a Surface pad <ul> <li>a Is the well pad in good condition (not cracked or broken)?</li> <li>b Is the well pad sloped away from the protective casing?</li> <li>c Is the well pad in complete contact with the protective casing?</li> <li>d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)</li> <li>e Is the pad surface clean (not covered with sediment or debris)?</li> </ul> </li> <li>4 Internal casing <ul> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the casing stable? (or does the proceed on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the proceed on the inner casing?</li> <li>f Is the casing stable? (or does the proceed on the inner casing?</li> <li>f Is the casing stable? (or does the proceed on the original well log?</li> <li>f Is the casing stable? (or does the proceed on the set of slip couplings in construction)</li> </ul> </li> <li>5 Sampling: Groundwater Wells Only: <ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	0.0.(				
<ul> <li>a Is the well pad sloped away from the protective casing?</li> <li>b Is the well pad in complete contact with the protective casing?</li> <li>c Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)</li> <li>e Is the pad surface clean (not covered with sediment or debris)?</li> <li>4 Internal casing</li> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the well properly vented for equilibration of air pressure?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>f Is the casing stable? (or does the pro move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 Sampling: Groundwater Wells Only:</li> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	3 Surface pa	10			
<ul> <li>b Is the well pad in complete contact with the protective casing?</li> <li>c Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)</li> <li>e Is the pad surface clean (not covered with sediment or debris)?</li> <li>4 <u>Internal casing</u></li> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the casing stable? (or does the proceed and well log?</li> <li>e Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing stable? (or does the proceed and well log?</li> <li>f Is the casing the apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 Sampling: Groundwater Wells Only:</li> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requireme</li></ul>	a	is the well pad in good condition (not cracked or broken)?			
<ul> <li>c Is the well pad in complete contact with the grotective casing?</li> <li>d Is the well pad in complete contact with the grotective casing?</li> <li>d Is the well pad in complete contact with the grotective casing?</li> <li>d Is the well pad in complete contact with the grotective casing?</li> <li>e Is the pad surface clean (not covered with sediment or debris)?</li> <li>4 <u>Internal casing</u> <ul> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> </ul> </li> <li>5 <u>Sampling: Groundwater Wells Only:</u> <ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	d	is the well pad sloped away from the protective casing?	/		
<ul> <li>d Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)</li> <li>e Is the pad surface clean (not covered with sediment or debris)?</li> <li>4 <u>Internal casing</u></li> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the casing stable? (or does the pic move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 <u>Sampling: Groundwater Wells Only:</u></li> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	C	is the well pad in complete contact with the protective casing?			
<ul> <li>e Is the pad surface clean (not covered with sediment or debris)?</li> <li>4 Internal casing <ul> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> </ul> </li> <li>5 Sampling: Groundwater Wells Only: <ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	a	stable? (not undermined by organized by provide and			
<ul> <li>e Is the pad surface clean (not covered with sediment or debris)?</li> <li>4 Internal casing <ul> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> </ul> </li> <li>5 Sampling: Groundwater Wells Only: <ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>		stable? (not undermined by erosion, animal burrows, and does not	,		
<ul> <li>4 Internal casing <ul> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> </ul> </li> <li>5 Sampling: Groundwater Wells Only: <ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>		nove when stepped on)	/		
<ul> <li>4 <u>Internal casing</u> <ul> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> </ul> </li> <li>5 <u>Sampling: Groundwater Wells Only:</u> <ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	е	is the pad surface clean (not covered with sediment or debris)?			
<ul> <li>a Does the cap prevent entry of foreign material into the well?</li> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 Sampling: Groundwater Wells Only:</li> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	4 Internal ca	sing			
<ul> <li>b Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 Sampling: Groundwater Wells Only:</li> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	а	Does the cap prevent entry of foreign material into the well?	1		
<ul> <li>foreign objects (such as bailers)?</li> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 Sampling: Groundwater Wells Only:</li> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	b	Is the casing free of kinks or bends, or any obstructions from			
<ul> <li>c Is the well properly vented for equilibration of air pressure?</li> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 Sampling: Groundwater Wells Only: <ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>		foreign objects (such as bailers)?	1		
<ul> <li>d Is the survey point clearly marked on the inner casing?</li> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 Sampling: Groundwater Wells Only: <ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	С	Is the well properly vented for equilibration of air pressure?	$\overline{}$		
<ul> <li>e Is the depth of the well consistent with the original well log?</li> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 Sampling: Groundwater Wells Only: <ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	d	Is the survey point clearly marked on the inner casing?	1		
<ul> <li>f Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)</li> <li>5 Sampling: Groundwater Wells Only: <ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> </ul> </li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	e	Is the depth of the well consistent with the original well log?	-+	$\overline{}$	
or can it be taken apart by hand due to lack of grout or use of slip couplings in construction) 5 <u>Sampling: Groundwater Wells Only:</u> a Does well recharge adequately when purged? b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility? c Does the well require redevelopment (low flow, turbid)? 6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	f	Is the casing stable? (or does the pvc move easily when touched			
couplings in construction)       Image: Groundwater Wells Only:         a       Does well recharge adequately when purged?         b       If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?         c       Does the well require redevelopment (low flow, turbid)?         6       Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?		or can it be taken apart by hand due to lack of grout or use of slip	1		
<ul> <li>5 Sampling: Groundwater Wells Only:</li> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>		couplings in construction)	_/		
<ul> <li>a Does well recharge adequately when purged?</li> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	5 Sampling	Groundwater Wells Only			
<ul> <li>b If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?</li> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	o <u>bamping.</u>	Does well recharge adequately when purged?	1		
<ul> <li>and specified in the approved groundwater plan for the facility?</li> <li>Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	h	If dedicated sampling equipment installed, is it in good condition	<u> </u>		
<ul> <li>c Does the well require redevelopment (low flow, turbid)?</li> <li>6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?</li> </ul>	b	and specified in the approved groundwater plan for the facility?			
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	C	Does the well require redevelopment (low flow, turbid)?		~	
6 Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	Ū			<u> </u>	
appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	6 Based on y	our professional judgement, is the well construction / location			
Monitoring Program and 2) comply with the applicable regulatory requirements?	-	appropriate to 1) achieve the objectives of the Groundwater			
requirements?		Monitoring Program and 2) comply with the applicable regulatory	1		
	:	requirements?	1		
7 Corrective estions as peopled by date:	7 Correction	actions as pooled, by dates			
· Concentre actions as needed, by date.		actions as needed, by date.			

Site Name	Huffaxer Rd Landfill				
Permit Number					
Well ID	GWC - 23	-			
Tate, field conditions	10/01/19 Sunny, 80°F			,	
1 Location/I	dentification	yes	no	n/a	
a	Is the well visible and accessible?	$\times$			
b	Is the well properly identified with the correct well ID?	$\overline{\mathbf{x}}$	<u> </u>		
С	Is the well in a high traffic area and does the well require				
	protection from traffic?		$\times$		
d	Is the drainage around the well acceptable? (no standing water,				
	nor is well located in obvious drainage flow path)	$\underline{\times}$			
2 Protective	Casing				
a	Is the protective casing free from apparent damage and able to be				
	secured?	X			
b	Is the casing free of degradation or deterioration?		×	mihar	rust
С	Does the casing have a functioning weep hole?	X			
d	Is the annular space between casings clear of debris and water,				
	or filled with pea gravel/sand?	×			
е	Is the well locked and is the lock in good condition?	$\underline{\times}$	-		
3 Surface pa	ad				
a	Is the well pad in good condition (not cracked or broken)?	$\times$			
b	Is the well pad sloped away from the protective casing?	$\overline{\mathbf{X}}$			
С	Is the well pad in complete contact with the protective casing?	X			
d	Is the well pad in complete contact with the ground surface and				
	stable? (not undermined by erosion, animal burrows, and does not				
	move when stepped on)		×		
е	Is the pad surface clean (not covered with sediment or debris)?	X		_	
4 Internal ca	ising				
а	Does the cap prevent entry of foreign material into the well?	×			
b	Is the casing free of kinks or bends, or any obstructions from				
	foreign objects (such as bailers)?	<u>×</u>			
С	Is the well properly vented for equilibration of air pressure?	$\prec$			
d	Is the survey point clearly marked on the inner casing?	<u>×</u>			
е	Is the depth of the well consistent with the original well log?	<u>×</u>			
f	Is the casing stable? (or does the pvc move easily when touched				
	or can it be taken apart by hand due to lack of grout or use of slip	~			
	couplings in construction)	<u>~</u>			
5 <u>Sampling:</u>	Groundwater Wells Only:				
а	Does well recharge adequately when purged?	X			
b	If dedicated sampling equipment installed, is it in good condition				
	and specified in the approved groundwater plan for the facility?			<u>×</u>	
С	Does the well require redevelopment (low flow, turbid)?		$\underline{\times}$		
6 Based on	your professional judgement, is the well construction / location				
	appropriate to 1) achieve the objectives of the Groundwater				
	Monitoring Program and 2) comply with the applicable regulatory				
	requirements?	X			
7 Corrective	actions as needed, by date:				
Fill	oid spaces with natural materials or concrete				

### APPENDIX B

## Prepared Alternate Source Demonstrations

Prepared for



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

# ALTERNATE SOURCE DEMONSTRATION – BARIUM AND pH PLANT HAMMOND HUFFAKER ROAD LANDFILL

Prepared by



engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200 Kennesaw, Georgia 30144

Project Number GW6581B

November 2019



### ALTERNATE SOURCE DEMONSTRATION – BARIUM AND pH

Plant Hammond Huffaker Road Landfill Permit No. 057-022D (LI)

November 27, 2019

Hering goldemad

Herwig Goldemund, Ph.D. Senior Scientist

Whother B Law

Whitney Law, P.E. Project Manager

### **Certification Statement**

### Alternate Source Demonstration – Barium and pH Plant Hammond Huffaker Road Landfill Permit No. 057-022D (LI) November 27, 2019

I certify that the above document, including interpretations and recommendations, were completed in accordance with the Georgia Environmental Protection Division's Solid Waste Rules (Chapter 391-3-4.14) by or under the direct supervision of a Georgia-registered professional geologist or a Georgia-registered professional engineer who is a qualified groundwater scientist.

B Lan

Seal and Signature



# Geosyntec<sup>></sup>

### TABLE OF CONTENTS

1.	INT	RODUCTION	1
	1.1	Purpose	1
	1.2	Summary of ASD	1
	1.3	Site Setting and Operational History	2
	1.4	Groundwater Monitoring	3
	1.5	Basis of the Statistically Significantly Increase	3
2.	ALT	ERNATE SOURCE DEMONSTRATION	5
	2.1	Upgradient Conditions	5
	2.2	Natural Variation	5
	2.3	Lined Landfill and Lack of Indicator Parameters	6
3.	CON	ICLUSIONS	8
4.	REF	ERENCES	9

### **LIST OF FIGURES**

Figure 1	Site Location Map
Figure 2	Well Location Map
Figure 3	Time Series Chart - Ba, C, Cl, TDS in GWA-2, GWA-3, GWA-4, and
	GWC-8
Figure 4 a,b,c	Time Series Correlations – Water Elevations, ORP, pH, Ba

### LIST OF APPENDICES

Appendix A	Potentiometric Surface Contour Map from 2019 First Semiannual
	Report
Appendix B	Historical Aerial Photographs
Appendix C	Time Series from 2019 First Semiannual Report

# Geosyntec b

### LIST OF ACRONYMS

ASD	Alternate Source Demonstration
ASTM	American Society for Testing and Materials
В	boron
CCR	Coal Combustion Residual
CFR	Code of Federal Regulations
Cl	chloride
cm/sec	centimeter per second
D&O	Design & Operation
ERM	Environmental Resources Management
GA EPD	Environmental Protection Division
GPC	Georgia Power Company
HDPE	high-density polyethylene
mg/L	milligrams per liter
ORP	oxidation reduction potential
PL	prediction limit
SO <sub>4</sub>	sulfate
SSI	statistically significant increase
SCS	Southern Company Services, Inc.
TDS	total dissolved solids
USEPA	United States Environmental Protection Agency



### 1. INTRODUCTION

### 1.1 <u>Purpose</u>

This document presents an alternate source demonstration (ASD) for the statistically significant increase (SSI) of barium (Ba) and pH detected in compliance well GWC-8 located at Georgia Power Company's (GPC's) Plant Hammond Huffaker Road Landfill (the landfill). The Ba and pH SSIs were identified based on statistical evaluation of the groundwater quality data set obtained from the April 2019 sampling event. The SSIs were subsequently confirmed with verification sampling events conducted in June 2019.

The landfill is currently managed by the Georgia Environmental Protection Division (GA EPD), and in accordance with Georgia Solid Waste Management Rules for Groundwater Monitoring and Corrective Action of a municipal solid waste landfill, Rule 391-3-4.14. The landfill is also subject to the United States Environmental Protection Agency (USEPA) coal combustion residual rule (CCR Rule) [40 Code of Federal Regulations (CFR) 257 Subpart D] and the GA EPD Rules for Solid Waste Management 391-3-4-.10. This ASD has been prepared pursuant to Rule 391-3-4-.14(23)(c) of the Georgia Administrative Code, which states that "the owner or operator may demonstrate that a source other than a MSWLF (municipal solid waste landfill) unit caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality." This language is consistent with the requirements of the Federal CCR Rule stipulated in 40 CFR 257.94(e)(2), which has been incorporated by reference into Rule 391-3-4-.10(23)(c) of the Georgia Administrative Code.

### 1.2 <u>Summary of ASD</u>

Based on review of available site data, the Ba and pH SSIs reported for well GWC-8 are not associated with a release from the landfill but are rather caused by the oxidation of naturally occurring pyritic minerals, which results in slightly more acidic conditions and increased dissolution of Ba into the groundwater. This ASD provides the following information supporting this conclusion:

• Groundwater samples collected from assessment monitoring wells GWA-2, GWA-3, and GWA-4 located upgradient of the lined landfill reported higher concentrations of Ba and/or other Appendix III parameters, relative to compliance well GWC-8 located downgradient of the landfill. The data indicate an upgradient source other than the CCR unit. The likely source of the higher constituent

concentrations is the historical clay mining operation located immediately upgradient of wells GWA-2, GWA-3, and GWA-4.

- Correlations between Ba concentrations, groundwater elevations, pH, and oxidation reduction potential (ORP) in monitoring well GWC-8 are indicative of natural variation and not linked to a release from the landfill. Increased recharge from precipitation leads to more aerobic conditions and mild oxidation of pyritic minerals naturally occurring in the formation. This, in turn, slightly lowers the pH and increases the dissolution of naturally occurring Ba into groundwater.
- Parcels A and B are constructed with a composite liner system, including a 60mil high-density polyethylene (HDPE) geomembrane and a leachate collection system; in addition, the CCR waste is landfilled in a dewatered state and there is no excess hydraulic head potentially driving CCR constituents into the subsurface; the lack of CCR-related impacts is supported by a lack of elevated concentrations of CCR indicator parameters in monitoring well GWC-8.

### 1.3 <u>Site Setting and Operational History</u>

The landfill is located in Floyd County, near Rome, Georgia, approximately one mile west of the Rome city limit and approximately five miles northeast of Plant Hammond (**Figure 1**). The landfill is located within the Valley and Ridge Physiographic Province of Georgia, which is underlain by shales, dolomites, and limestones of Cambrian and Ordovician age, and the landfill itself is located in the Floyd Shale member of the Judy Mountain syncline (SCS, 2002).

Huffaker Road Landfill was built between 2005 and 2007 over a closed surface clay mine, previously owned by Boral Bricks, Inc. The landfill is comprised of constructed Parcels A, B, and E, with Parcels C and D proposed for future expansion. The three existing parcels were permitted and constructed with a minimum 24-inch compacted clay liner with a maximum hydraulic conductivity of 1 x  $10^{-6}$  centimeters per second (cm/sec) underlain with a compacted soil barrier designed to provide a minimum five-foot thick barrier between the bottom of the clay liner and seasonal high groundwater levels. GA EPD approved Solid Waste Permit No. 057-022D (LI) in a letter dated May 26, 2006, and disposal operations commenced on May 5, 2008. No CCR materials were stored in the landfill prior to May 2008 (ERM, 2018). In 2016, Parcels A and B were retrofitted with a leachate collection system and a 60-mil HDPE geomembrane overlaying the 24-inch clay liner, which was recompacted to obtain a maximum hydraulic conductivity of 1 x  $10^{-7}$  cm/sec (GPC, 2016). Parcels A and B are currently active.

## Geosyntec<sup>></sup>

Under the Federal CCR Rule promulgated by the United States Environmental Protection Agency (USEPA) in 2015, the landfill was determined to be a regulated CCR unit. GPC implemented groundwater monitoring and reporting activities at the landfill to comply with the requirements of the Federal CCR Rule. To date, groundwater monitoring activities have been implemented in accordance with 40 CFR 257.90 through 257.94.

### 1.4 <u>Groundwater Monitoring</u>

A groundwater monitoring plan was originally developed under the Georgia Solid Waste rules as part of the landfill's D&O Plan to comply with the requirements of Solid Waste Permit No. 057-022D (LI). The groundwater monitoring system consists of 17 wells (five upgradient wells and 12 downgradient wells) installed between September 2001 and February 2007 (ERM, 2018). The site layout and the locations of each well are presented on **Figure 2**. Groundwater monitoring at the landfill began in 2007, prior to disposal activities, and continues to date. In addition to groundwater monitoring under the D&O Plan, groundwater monitoring is also conducted under the Federal and Georgia CCR Rules, and the CCR groundwater monitoring under these rules commenced in March 2016.

### 1.5 Basis of the Statistically Significantly Increase

The following presents a summary of the statistical approach applied to assess the April 2019 groundwater data for potential SSIs of permit stipulated parameters reported in downgradient compliance wells relative to the available historical data set. Because the landfill is currently independently managed under both Georgia's Solid Waste Management Rule 391-3-4.14 and Georgia's CCR Rule 391-3-4.10, which references the Federal CCR Rule, two data sets are statistically evaluated per semiannual monitoring event. One data set contains Appendix III parameters, which is applicable to both of the aforementioned rules. The other data set contains the D&O-specified parameters, applicable to Rule 391-3-4.14. The statistical approach used to evaluate groundwater data for the landfill for Appendix III parameters is the intrawell prediction limit (PL) method combined with a 1-of-3 resample plan; this is applicable to the pH SSI reported herein. The intrawell PL statistical approach was also used to evaluate groundwater data for the landfill for D&O parameters (i.e., Ba), but with a 1-of-2 resample plan instead. The statistical analyses and comparisons to PLs are discussed in further detail in the 2019 First Semiannual Groundwater Monitoring and Corrective Action Report (2019 First Semiannual Report) (Geosyntec, 2019).

Statistical analysis of the April 2019 data identified an SSI of Ba and pH for well GWC-8. The initial Ba concentration of 0.13 milligrams per liter (mg/L) was verified through

## Geosyntec >

a subsequent resampling and analyses conducted in June 2019 (0.17 mg/L). These concentrations exceeded the PL of 0.12 mg/L for Ba in GWC-8. Similarly, the pH measured during the April 2019 event was 6.9 relative to a lower PL of 7.2. The pH was verified through two subsequent resampling and analyses conducted in June 2019 (6.9 and 7.1, respectively).

### 2. ALTERNATE SOURCE DEMONSTRATION

Based on review of site information, the SSIs for Ba and pH at compliance well GWC-8 are not related to a release from lined Parcels A and B at the landfill but is instead caused by natural variation in the groundwater quality. The following sections presents information supporting this conclusion.

### 2.1 <u>Upgradient Conditions</u>

Groundwater quality conditions within upgradient assessment wells GWA-2 and GWA-3 are characterized by higher Ba concentrations and greater variability among Appendix III parameters relative to downgradient compliance well GWC-8. The degree of spatial and temporal variability detected for Ba and Appendix III concentrations in these three upgradient wells relative to well GWC-8 are presented on **Figure 3**; the data set includes sampling events conducted between March 2016 and November 2019 (where applicable). Other Appendix III parameters, including B, Cl, and TDS, were included on this figure to illustrate these parameters' similar concentration trends relative to Ba. The low concentrations of Appendix III parameters in downgradient well GWC-8 relative to upgradient wells supports the conclusion the Ba source is not associated with the regulated landfill.

A potentiometric surface map developed from water levels recorded during the April 2019 detection monitoring event, and submitted as part of the 2019 First Semiannual Report, is included as **Appendix A**.

The higher Ba and Appendix III concentrations in upgradient wells GWA-2, GWA-3, and GWA-4 are likely associated with historical clay mining operations located immediately north, and upgradient of these wells, across Huffaker Road. Aerial photographs provided in **Appendix B** illustrate conditions at the site as well as north of the site between 1993 and 2017, showing the land disturbance activities during this period. Disturbances of the overburden through clay mining operations have likely created conditions for increased dissolution of constituents into groundwater, including Ba and several Appendix III parameters. This is likely due to increased dissolution of naturally-occurring constituents from disturbed surfaces as recharge from precipitation dissolves constituents as rain water permeates through the vadose zone into groundwater.

### 2.2 <u>Natural Variation</u>

There is a correlation between water levels and ORP in monitoring well GWC-8. As water levels rise (i.e., due to increased infiltration of precipitation), the ORP becomes

### 

more aerobic. Furthermore, as the ORP becomes more aerobic in this well, the pH of groundwater becomes more acidic (supported by pH observations in GWC-8 in late 2018 and 2019) which, in turn, correlates with increased Ba concentrations. Figure 4(a,b,c) depicts the correlations between these parameters. Figure 4a illustrates the correlation between increased groundwater levels and the transition of groundwater from reducing to oxidizing conditions. The ORP decrease reported in mid to late 2019 corresponds with a decrease in groundwater levels, likely due to dry conditions during this time.

The regional geology was summarized in the Site Acceptability Report (SAR) (SCS, 2002) based on the work of Cressler (1970). The Huffaker Road Landfill is located in the Floyd Shale member of the Judy Mountain Syncline. The geologic unit underlying the landfill is composed of clay and shale, transitioning to limestone at its base. Pyrite (a sulfide mineral) was noted to be present at outcrops located at the landfill (SCS, 2002). Pyrite (FeS<sub>2</sub>) is an iron sulfide that when oxidized forms ferrous iron (Fe<sup>2+</sup>) and SO<sub>4</sub>, releasing hydrogen ions, which lowers the pH of groundwater. Under increasingly aerobic conditions, ferrous iron is subsequently further oxidized to ferric iron (Fe3+) that forms additional acid and oxyhydroxide precipitates. Lower groundwater pH due to pyrite oxidation enhances the solubility of other naturally-occurring metals (e.g., Ba), increasing their concentrations in groundwater. Under slightly aerobic conditions, mild pyrite oxidation likely provided the process to lower the groundwater pH enough to increase Ba concentrations in groundwater samples collected from well GWC-8. The inverse relationship between ORP and pH is shown on **Figure 4b**.

**Figure 4c** illustrates the correlation between increasing Ba concentrations and decreasing pH conditions within groundwater sampled from GWC-8. Therefore, the lines of evidence presented herein show that the SSIs of Ba and pH are the result of natural variation in groundwater conditions caused by the oxidation of pyrite found in the Floyd Shale and historic mining operations, and not due to a release of leachate from Parcels A and B.

### 2.3 Lined Landfill and Lack of Indicator Parameters

Parcels A and B were permitted and constructed with a 24-inch compacted clay liner with a maximum hydraulic conductivity of 1 x  $10^{-6}$  cm/sec. The liner is underlain with a minimum five-foot thick compacted fill buffer between the bottom of the clay liner and the seasonal high groundwater table. A fate and transport model was completed in support of preparing the SAR; multiple scenarios were modeled based on soil parameters determined via laboratory testing (e.g., soil partition coefficient, K<sub>d</sub>) and field investigations. Under the more protective, conservative model scenario (i.e., highest potential for contaminant transport based on the range of determined soil parameters and

### 

model inputs), the model determined that it would take landfill leachate more than 1,000 years to break through the 24-inch clay liner under normal operations without a synthetic liner (GPC, 2002). However, in 2016, Parcels A and B were retrofitted with a leachate collection system (GPC, 2016). The retrofit was completed to be even more protective of the environment and not in response to a perceived leak from the unit.

Currently, Parcels A and B receive CCR material (predominantly ash) from Plant Hammond. The dewatered CCR waste is stacked in lifts and compacted to 90 percent of Standard Proctor per ASTM standard D698 (GPC, 2016). A temporary daily cover is placed over the active portions of the cells to minimize infiltration of rainwater. The dry-handling of the CCR materials in conjunction with the temporary cover system minimizes the hydraulic head that could potentially drive CCR constituents into the subsurface. In addition, the leachate collection system and the low permeability clay component underlying the geomembrane liner further limits the potential for leachate migration. The lack of CCR-related impacts in monitoring well GWC-8 is supported by a lack of elevated concentrations of CCR indicator parameters, namely B, Cl, and TDS.

**Appendix C** includes the time series plots for monitored D&O and Appendix III parameters as provided in the 2019 First Semiannual Report (Geosyntec, 2019). Concentrations of Appendix III indicator parameters in these plots are low and not indicative of a release from the landfill. In fact, these concentrations are lower in well GWC-8 than in upgradient background wells GWA-2, GWA-3, or GWA-4. This supports the conclusion that constituent concentrations in well GWC-8 are not caused by a release from the unit.



### **3. CONCLUSIONS**

Barium concentrations and pH levels in downgradient compliance well GWC-8 were reported outside their associated PLs during the first semi-annual 2019 groundwater detection monitoring event conducted in April 2019. Subsequent verification sampling events conducted in June 2019 confirmed these conditions, which resulted in the identification of SSIs for Ba and pH in monitoring well GWC-8. However, the following lines of evidence demonstrate that the SSIs are caused by the oxidation of naturally occurring pyritic minerals due to increased groundwater levels leading to the creation of more acidic conditions and increased dissolution of Ba into the groundwater and not a release from the unit.

- Upgradient Conditions:
  - Upgradient wells GWA-2, GWA-3, and GWA-4 have higher concentrations of Ba and/or Appendix III parameters compared to downgradient well GWC-8. The historical clay mining operation located upgradient of the landfill is likely an alternative source of Ba (and other Appendix III parameters).
- Natural Variation:
  - Ba concentrations and pH in monitoring well GWC-8 show a correlation with increased groundwater levels likely leading to oxidation of underlying sulfide minerals (pyrite) resulting in a concurrent increase in the dissolution of naturally occurring Ba into groundwater under slightly more acidic conditions.
- Lined Landfill and Lack of Indicator Parameters:
  - Parcels A & B are constructed with a composite liner system, including a 60-mil HDPE geomembrane and a leachate collection system; the landfilled CCR waste is dry handled and there is no excess hydraulic head potentially driving CCR constituents into the subsurface. The lack of CCR-related impacts in monitoring well GWC-8 is supported by a lack of elevated concentrations of CCR indicator parameters, namely B, Cl, and TDS.
#### 4. **REFERENCES**

- Cressler, C.W. (1970). Geology and ground-water resources of Floyd and Polk Counties, Georgia. Information Circular 39, Geological Survey of Georgia.
- ERM (2018). 2017 Annual Groundwater Monitoring and Corrective Action Report, Plant Hammond Huffaker Road Landfill, Permit No. 057-022D (LI). January 31, 2018.
- Georgia Power Company (2016). Plant Hammond Huffaker Road Coal Combustion By-Products Disposal Facility, Design and Operations Plan Minor Modification -9/16/2016. Georgia Power Company.
- Geosyntec Consultants (2019). 2019 First Semiannual Groundwater Monitoring and Corrective Action Report, Plant Hammond Huffaker Road Landfill. August 2019.
- Southern Company Services, Inc. (2002). Plant Hammond Proposed Huffaker Road Coal Combustion By-Products Storage Facility Site Acceptability Report. Birmingham, Alabama: Earth Science and Environmental Engineering.
- USEPA (2015). Hazardous and Solid Waste Management Systems; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, 40 CFR Parts 257 and 261, Federal Register, Vol. 80, No. 74, April 17, 2015, pp.21302-21501

## FIGURES







Constituent: Barium Analysis Run 11/26/2019 1:53 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Chloride Analysis Run 11/26/2019 11:40 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Constituent: Boron Analysis Run 11/26/2019 11:39 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Total Dissolved Solids Analysis Run 11/26/2019 11:40 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Figure 4c GWC-8 - Barium : pH





Time Se Water Ele	eries Correlations – evation, ORP, pH, Ba	
Geo Hu Rome	orgia Power Company uffaker Road Landfill , Floyd County, Georgia	
Geosyntec Consultants		Figure
KENNESAW, GA	NOVEMBER 2019	4 a,D,C

### APPENDIX A

## Potentiometric Surface Map from 2019 First Semiannual Report





## APPENDIX B

## Historical Aerial Photographs



#### Legend

Monitoring Well

Area of Historical Mining Operations

Note: 1. Aerial Photograph from Google Earth









## APPENDIX C

## Time Series from 2019 First Semiannual Report

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Boron Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Time Series

Constituent: Boron Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored

values



Constituent: Boron Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Boron Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas  $^{\rm tw}$  v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Calcium Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Time Series

Constituent: Calcium Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Calcium Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Calcium Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Chloride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Time Series

Constituent: Chloride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Chloride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Chloride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill


Constituent: Fluoride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas  $^{\rm tw}$  v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Time Series

Constituent: Fluoride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Fluoride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Fluoride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: pH Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Time Series

Constituent: pH Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: pH Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG





Constituent: pH Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Time Series

Constituent: Sulfate Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG





Constituent: Sulfate Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Constituent: Total Dissolved Solids Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Total Dissolved Solids Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

700



Time Series



Constituent: Total Dissolved Solids Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Prepared for



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

## ALTERNATE SOURCE DEMONSTRATION - SULFATE PLANT HAMMOND HUFFAKER ROAD LANDFILL

Prepared by



engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200 Kennesaw, Georgia 30144

Project Number GW6581B

November 2019



#### **ALTERNATE SOURCE DEMONSTRATION - SULFATE**

Plant Hammond Huffaker Road Landfill Permit No. 057-022D (LI)

November 27, 2019

His Goldend

Herwig Goldemund, Ph.D. Senior Scientist

Whitney & Law

Whitney Law, P.E. Project Manager

#### **Certification Statement**

Alternate Source Demonstration - Sulfate Plant Hammond Huffaker Road Landfill Permit No. 057-022D (LI) November 27, 2019

I hereby certify that the facts used to prepare this Alternate Source Demonstration for Georgia Power Company – Plant Hammond Huffaker Road Landfill are accurate pursuant to the requirements stipulated in 40 CFR §257.94(e)(2).

Whitney & Can

Seal and Signature



11/27/2019 Date

# 

#### TABLE OF CONTENTS

1.	INT	RODUCTION	1
	1.1	Purpose	1
	1.2	Summary of ASD	1
	1.3	Site Setting and Operational History	2
	1.4	Groundwater Monitoring	3
	1.5	Basis of the Statistically Significantly Increase	4
2.	ALT	ALTERNATE SOURCE DEMONSTRATION	
	2.1	Upgradient Conditions	5
	2.2	Onsite Historical Operations (Natural Variation)	6
	2.3	Geology	6
	2.4	Lined Landfill and Lack of Indicator Parameters	7
3.	CON	ICLUSIONS	9
4.	REFERENCES 11		11

#### LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Well Location Map
Figure 3	Time Series Chart – B, Cl, SO <sub>4</sub> , TDS in GWA-2, GWA-3, GWA-4, and GWC-20
Figure 4	Time Series Chart – Sulfate, ORP, pH at GWC-20

#### LIST OF APPENDICES

Appendix A	April 2019 Potentiometric Surface Contour Map from 2019 First
	Semiannual Report
Appendix B	Historical Aerial Photographs
Appendix C	Time Series from 2019 First Semiannual Report

# Geosyntec b

#### LIST OF ACRONYMS

ASD	Alternate Source Demonstration
ASTM	American Society for Testing and Materials
В	boron
CCR	Coal Combustion Residual
CFR	Code of Federal Regulations
Cl	chloride
cm/sec	centimeter per second
D&O	Design & Operation
ERM	Environmental Resources Management
GA EPD	Environmental Protection Division
GPC	Georgia Power Company
HDPE	high-density polyethylene
mg/L	milligrams per liter
ORP	oxidation reduction potential
PL	prediction limit
SO <sub>4</sub>	sulfate
SSI	statistically significant increase
SCS	Southern Company Services, Inc.
TDS	total dissolved solids
USEPA	United States Environmental Protection Agency

#### 1. INTRODUCTION

#### 1.1 <u>Purpose</u>

This document presents an alternate source demonstration (ASD) for the statistically significant increase (SSI) of sulfate (SO<sub>4</sub>) detected in compliance well GWC-20 located at Georgia Power Company's (GPC's) Plant Hammond Huffaker Road Landfill (the landfill). The SO<sub>4</sub> SSI was identified based on statistical evaluation of the groundwater quality data set obtained from the April 2019 sampling event. The SSI was subsequently confirmed with two verification sampling events conducted in June 2019.

The landfill is currently managed by the Georgia Environmental Protection Division (GA EPD), and in accordance with Georgia Solid Waste Management Rules for Groundwater Monitoring and Corrective Action of a municipal solid waste landfill, Rule 391-3-4.14. The landfill is also subject to the United States Environmental Protection Agency (USEPA) coal combustion residual rule (CCR Rule) [40 Code of Federal Regulations (CFR) 257 Subpart D] and the GA EPD Rules for Solid Waste Management 391-3-4-.10. This ASD has been prepared pursuant to Rule 391-3-4-.14(23)(c) of the Georgia Administrative Code, which states that "the owner or operator may demonstrate that a source other than a MSWLF (municipal solid waste landfill) unit caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality." This language is consistent with the requirements of the Federal CCR Rule stipulated in 40 CFR §257.94(e)(2), which has been incorporated by reference into Rule 391-3-4-.10(23)(c) of the Georgia Administrative Code.

#### 1.2 <u>Summary of ASD</u>

Based on review of available site data, the SO<sub>4</sub> SSI reported for well GWC-20 is not associated with a release from the landfill but is instead associated with historical clay mining operations (i.e., the alternative source) conducted on the subject site that altered geochemical properties within the soil resulting in increased production of SO<sub>4</sub>. Natural variation in the groundwater quality due to temporal variability is likely also a contributing factor for the SSI. This ASD provides the following information supporting this conclusion:

• Groundwater samples collected from monitoring wells GWA-3 and GWA-4, located upgradient of the landfill and considered to represent background conditions reported higher concentrations of SO<sub>4</sub>, as well as other Appendix III

parameters, relative to compliance well GWC-20 located downgradient of the landfill. The data indicate that an upgradient source other than the CCR unit exists for these naturally occurring constituents. The likely source of the higher SO<sub>4</sub> concentrations is the historical clay mining operation located immediately upgradient of wells GWA-3 and GWA-4.

- In addition to upgradient locations, historical clay mining operations also occurred at the subject site prior to landfill construction. The groundwater quality data suggest these historical operations have influenced spatial and temporal fluctuations of SO<sub>4</sub> concentrations reported for samples collected from wells installed within or downgradient of historically disturbed areas. The natural variation of SO<sub>4</sub> concentrations within groundwater may not have been fully captured within the relatively short period of SO<sub>4</sub> monitoring during baseline data collection at the site (i.e., within approximately one year), which was used to calculate the prediction limits used for the statistical analyses.
- During initial construction of the landfill, surface water and soft soils were removed from open pits created during historical clay mining operations in close vicinity to GWC-20, likely leading to oxidation of underlying sulfide minerals (i.e., pyrite) resulting in the formation of sulfate. This explanation is supported by an apparent positive correlation between a field measured oxidation reduction potential (ORP) and SO<sub>4</sub> concentrations in groundwater.
- Parcel E was designed and constructed in 2005 consistent with liner requirements for a solid waste landfill which was permitted by the GA EPD to receive CCR materials. The landfilled CCR waste (mostly gypsum) was dry-stacked into the unit in lifts and compacted to 90 percent Standard Proctor following American Society for Testing and Materials (ASTM) standard D698. A temporary intermediate cover of 18-inch of compacted soil has been installed over Parcel E. The combination of dry-handling the material and construction of the intermediate cover system minimizes the hydraulic head that could potentially drive CCR constituents into the subsurface. The lack of CCR-related impacts in the groundwater is supported by a lack of elevated concentrations of CCR Appendix III indicator parameters such as chloride (Cl), boron (B), or total dissolved solids (TDS) in monitoring well GWC-20.

#### 1.3 <u>Site Setting and Operational History</u>

The landfill is located in Floyd County, near Rome, Georgia, approximately one mile west of the Rome city limit and approximately five miles northeast of Plant Hammond (**Figure 1**). The landfill is located within the Valley and Ridge Physiographic Province of Georgia, which is underlain by shales, dolomites, and limestones of Cambrian and Ordovician age, and the landfill itself is located in the Floyd Shale member of the Judy Mountain syncline (SCS, 2002).

Huffaker Road Landfill was built between 2005 and 2007 over a closed surface clay mine, previously owned by Boral Bricks, Inc. The landfill is comprised of constructed Parcels A, B, and E, with Parcels C and D proposed for future expansion. The three existing parcels were permitted and constructed with a minimum 24-inch compacted clay liner with a maximum hydraulic conductivity of 1 x  $10^{-6}$  centimeters per second (cm/sec) underlain with a compacted soil barrier designed to provide a minimum five-foot thick barrier between the bottom of the clay liner and seasonal high groundwater levels. GA EPD approved Solid Waste Permit No. 057-022D (LI) in a letter dated May 26, 2006, and disposal operations commenced on May 5, 2008. No CCR materials were stored in the landfill prior to May 2008 (ERM, 2018). In 2016, Parcels A and B were retrofitted with a leachate collection system and a 60-mil HDPE geomembrane overlaying the 24-inch clay liner, which was recompacted to obtain a maximum hydraulic conductivity of 1 x  $10^{-7}$  cm/sec (GPC, 2016).

Based on discussions with GPC personnel, Parcels A and B have historically received coal ash whereas Parcel E has typically received gypsum. Currently, Parcels A and B are active, and Parcel E is temporarily inactive and covered with an intermediate closure system of 18-in of soil compacted to obtain a maximum hydraulic conductivity of  $1 \times 10^{-6}$  cm/sec.

Under the Federal CCR Rule promulgated by the United States Environmental Protection Agency (USEPA) in 2015, the landfill was determined to be a regulated CCR unit. GPC implemented groundwater monitoring and reporting activities at the landfill to comply with the requirements of the Federal CCR Rule. To date, groundwater monitoring activities have been implemented in accordance with 40 CFR §257.90 through 257.94.

#### 1.4 Groundwater Monitoring

A groundwater monitoring plan was originally developed under the Georgia Solid Waste rules as part of the landfill's Design and Operation (D&O) Plan to comply with the requirements of Solid Waste Permit No. 057-022D (LI). The groundwater monitoring system consists of 17 wells (five upgradient wells and 12 downgradient wells) installed between September 2001 and February 2007 (ERM, 2018). The site layout and the locations of each well are presented on **Figure 2**. Groundwater monitoring at the landfill began in 2007, prior to disposal activities, and continues to date. However, the earlier

groundwater monitoring was conducted under the Georgia Solid Waste rules and not under the Federal CCR Rule. Groundwater monitoring under the Federal CCR Rule, which included SO<sub>4</sub> as a monitoring constituent, commenced in March 2016.

In accordance with 40 CFR §257.94(b), a groundwater monitoring program was implemented to collect eight baseline groundwater samples from each upgradient and downgradient well between March 2016 and March 2017. A ninth round of groundwater samples was collected as the initial detection monitoring program event in October 2017. Groundwater samples have been collected semi-annually since October 2017 pursuant to 40 CFR §257.94(b) and §257.94(e)(2) and analyzed for Appendix III parameters. The semi-annual sampling event pertaining to this ASD was conducted in April 2019. Two verification sampling events were conducted in June 2019 to confirm the April 2019 SO<sub>4</sub> groundwater concentration reported in well GWC-20.

#### 1.5 Basis of the Statistically Significantly Increase

The following presents a summary of the statistical approach applied to assess the April 2019 groundwater data for potential SSIs of permit stipulated parameters reported in downgradient compliance wells relative to the available historical data set. Because the landfill is currently independently managed under both Georgia's Solid Waste Management Rule 391-3-4.14 and Georgia's CCR Rule 391-3-4.10, which references the Federal CCR Rule, two data sets are statistically evaluated per semiannual monitoring event. One data set contains Appendix III parameters, which is applicable to both of the aforementioned rules. The other data set contains the D&O-specified parameters, applicable to Rule 391-3-4.14. The statistical approach used to evaluate groundwater data for the landfill for Appendix III parameters (e.g., SO4) is the intrawell prediction limit (PL) method combined with a 1-of-3 resample plan. The statistical analyses and comparisons to PLs are discussed in further detail in the *2019 First Semiannual Groundwater Monitoring and Corrective Action Report* (2019 First Semiannual Report) (Geosyntec, 2019).

Statistical analysis of the April 2019 data identified an SSI of SO<sub>4</sub> for well GWC-20. The initial concentration of 50.3 milligrams per liter (mg/L) was verified through two subsequent resampling and analyses conducted in June 2019 (38.7 and 46.0 mg/L). These concentrations exceeded the PL of 37.4 mg/L for SO<sub>4</sub> in well GWC-20.

#### 2. ALTERNATE SOURCE DEMONSTRATION

Based on review of site information, the SSI for SO<sub>4</sub> at compliance well GWC-20 is not related to a release from Parcel E at the landfill but is associated with historical on-site clay mining operations (i.e. an alternate source) located in vicinity of GWC-20 and likely natural spatial and temporal variation. The following section presents information supporting this conclusion.

#### 2.1 <u>Upgradient Conditions</u>

Groundwater quality conditions within upgradient assessment wells GWA-3 and GWA-4 are characterized by higher SO<sub>4</sub> concentrations and greater variability among Appendix III parameters relative to downgradient compliance well GWC-20. The degree of spatial and temporal variability detected for SO<sub>4</sub> concentrations in GWA-3 and GWA-4 relative to well GWC-20 is presented on **Figure 3**; the data set includes sampling events conducted between March 2016 and November 2019 (where applicable). Other Appendix III parameters, including B, Cl, and TDS, were included on this figure to illustrate these parameters' similar concentration trends relative to SO<sub>4</sub>. The low concentrations of Appendix III parameters in downgradient well GWC-20 relative to upgradient wells supports the conclusion the SO<sub>4</sub> source is not associated with the regulated landfill.

A potentiometric surface map developed from water levels recorded during the April 2019 detection monitoring event, and submitted as part of the 2019 First Semiannual Report, is included as **Appendix A**.

An explanation for the higher SO<sub>4</sub> concentrations in upgradient wells GWA-3 and GWA-4 is associated with historical clay mining operations located immediately north, and upgradient of these wells, across Huffaker Road, with surface water draining from the mining operations to the area in proximity of these two wells. Aerial photographs provided in **Appendix B** illustrate conditions at the site as well as north of the site between 1993 and 2018, showing the land disturbance activities during this period.

Disturbances of the overburden through clay mining operations have likely created conditions for increased dissolution of constituents into groundwater, including several Appendix III parameters. This is likely due to increased dissolution of naturally-occurring constituents from disturbed surfaces as recharge from precipitation dissolves constituents as rain water permeates through the vadose zone into groundwater.

The time series concentration trends shown on **Figure 3** indicate that there is spatial as well as temporal variability in the SO<sub>4</sub> (and other Appendix III) data. The eight baseline sampling events conducted within one year, which were used to calculate the PL for each well, may not have fully captured this variability at downgradient well GWC-20. The degree of variation in groundwater quality was detected in samples from both upgradient and downgradient locations, though it is more pronounced in upgradient wells GWA-3 and GWA-4. The degree of variation of SO<sub>4</sub> in these two wells might subsequently be observed in downgradient locations (i.e., GWC-20), given an adequate amount of time for those solutes to migrate to the downgradient compliance wells.

#### 2.2 <u>Onsite Historical Operations (Natural Variation)</u>

In addition to the upgradient source discussed in Section 2.1, the historical land disturbance activities show a lingering effect on groundwater conditions within the footprint of historical mining operations at the subject site prior to landfill construction. Like the mechanisms described above that lead to increased dissolutions of constituents from an upgradient source, the same mechanisms are believed to still be operational within and downgradient of historical clay mining operations at the subject site. As a result, compliance monitoring wells screened within and downgradient of these disturbed areas indicate higher constituent concentrations relative to wells screened within historically undisturbed areas that have also not been affected by potential upgradient sources and operations (e.g., GWA-1, GWA-11, and GWC-10).

Comparison of several Appendix III parameters between wells installed within the historically disturbed and undisturbed areas (both upgradient as well as downgradient) supports this conclusion, as illustrated by the time series plots presented in the 2019 First Semiannual Groundwater Monitoring and Corrective Action Report (2019 First Semiannual Report) (Geosyntec, 2019). These plots have been included in Appendix C of this ASD.

#### 2.3 Geology

The regional geology was summarized in the SAR (SCS, 2002) based on the work of Cressler (1970). The Huffaker Road Landfill is located in the Floyd Shale member of the Judy Mountain Syncline. The Floyd Shale is Mississippian in age and ranges from 200 to 1,200 feet thick in Floyd County. The unit is composed of clay and shale, transitioning to limestone at its base. Pyrite (a sulfide mineral) was noted to be present at outcrops located at the Site (SCS, 2002). Pyrite (FeS<sub>2</sub>) is an iron sulfide that when oxidized forms ferrous iron (Fe<sup>2+</sup>) and SO<sub>4</sub>, releasing hydrogen ions, which lowers the pH of groundwater.

The Huffaker Road Landfill was built over a closed surface clay mining operation. The residual soil (clayey silt and silty clay) was mined for use in making bricks. Aerial photos of the Site between 1993 and 2018 show that the area near GWC-20 was disturbed for much of this period (**Appendix B**). The aerial photographs indicate mining operations resulted in open pits that filled with water from precipitation, natural drainage, or groundwater seepage. During initial construction of the landfill by GPC between 2005 and 2007, surface water from the open pits was removed and soft sediments and soils excavated before allowing the subgrade to dry (GPC, 2016). When the water was removed, the underlying material was exposed to oxygen allowing localized oxidation of naturally-occurring pyrite.

The potential to have oxidizing or reducing conditions within groundwater can be gauged in the field using a water quality meter equipped with an ORP sensor. ORP is a geochemical field measurement that is recorded during each event groundwater samples are collected from well GWC-20. The ORP data recorded in GWC-20 since March 2016 indicate a generally increasing trend from reducing to oxidizing conditions which corresponds to an increasing trend in SO<sub>4</sub> concentrations over the same time period. Similarly, the groundwater pH for GWC-20 generally decreased for the period of March 2016 to October 2018 before beginning to increase in 2019. The lowering of pH is likely indicative of a release of hydrogen ions from the formation of SO<sub>4</sub> from pyritic minerals. Time series plots of these ORP and pH data relative to SO<sub>4</sub> concentrations are provided on **Figure 4**. The geochemical data are consistent with SO<sub>4</sub> generation from natural sources rather than a release from the lined unit.

#### 2.4 Lined Landfill and Lack of Indicator Parameters

Parcel E was permitted and constructed with a 24-inch compacted clay liner with a maximum hydraulic conductivity of 1 x  $10^{-6}$  cm/sec. The liner is underlain with a minimum five-foot thick compacted fill buffer between the bottom of the clay liner and the seasonal high groundwater table.

A fate and transport model was completed in support of preparing the SAR; multiple scenarios were modeled based on soil parameters determined via laboratory testing (e.g., soil partition coefficient,  $K_d$ ) and field investigations. Under the more protective, conservative model scenario (i.e., highest potential for contaminant transport based on the range of determined soil parameters and model inputs), the model determined that it would take landfill leachate more than 1,000 years to break through the 24-inch clay liner under normal operations without a synthetic liner (GPC, 2002).

Currently, Parcel E is temporarily inactive and not receiving CCR materials. When waste was received, the landfilled CCR waste (mostly gypsum) was dry-stacked in lifts and compacted to 90 percent of Standard Proctor per ASTM standard D698 (GPC, 2016). A temporary intermediate cover consisting of 18 inches of compacted soil with a maximum hydraulic conductivity of 1 x  $10^{-6}$  cm/sec has been constructed atop Parcel E. The dry-handling of the CCR materials in conjunction with the intermediate cover system minimizes the hydraulic head that could potentially drive CCR constituents into the subsurface. The lack of CCR-related impacts is supported by a lack of elevated concentrations of other CCR Appendix III indicator parameters in monitoring well GWC-20 (i.e., Cl, B, or TDS).

**Appendix** C includes the time series plots for the Appendix III parameters as provided with the 2019 First Semiannual Report. Concentrations of Appendix III indicator parameters in well GWC-20 are low or not detected and thereby, not indicative of a release from the landfill. In fact, these concentrations are lower in well GWC-20 than in upgradient background wells GWA-3 and GWA-4, and consistent with the other three upgradient background wells GWA-1, GWA-2, and GWA-11. This supports the conclusion that conditions in well GWC-20 are not indicative of a release from the unit.

#### **3. CONCLUSIONS**

Sulfate concentrations in downgradient compliance well GWC-20 were reported in excess of its associated PL during the first semi-annual 2019 groundwater detection monitoring event conducted in April 2019. Two subsequent verification sampling events conducted in June 2019 confirmed the PL exceedance, which resulted in the identification of an SSI for SO<sub>4</sub> in well GWC-20. However, the following lines of evidence demonstrate that the SO<sub>4</sub> SSI is not due to a release from the landfill, but rather (i) the oxidation of naturally occurring pyritic minerals after cessation of historical clay mining operations (i.e. an alternate source) located immediately upgradient of the well and/or (ii) natural spatial and temporal variation.

- Upgradient Conditions:
  - Upgradient wells GWA-3 and GWA-4 have higher concentrations of SO<sub>4</sub> compared to downgradient well GWC-20. The historical mining operation located upgradient of the landfill is likely an alternative source of SO<sub>4</sub> (and other Appendix III parameters). Upgradient groundwater with elevated levels of dissolved constituents are migrating to downgradient locations, triggering an increase in groundwater concentrations at these locations.
  - The fluctuations in SO<sub>4</sub> concentrations, as reported in both upgradient and downgradient wells, indicate a degree of spatial and temporal variability throughout the initial monitoring period. The full extent of the natural variation may not have been captured during the eight baseline monitoring events completed within one year, which have been used to calculate prediction limits in each well.
- Onsite Historical Operations (Natural Variation):
  - In addition to the upgradient conditions, there were also historical clay mining operations conducted at the subject landfill site itself. Based on comparison of groundwater quality data between wells installed upgradient versus downgradient of historically undisturbed areas on-site, the data indicate historical clay mining operations have a lingering effect on the concentrations of Appendix III constituents reported in the wells installed within or downgradient of the historically disturbed areas. This is likely due to increased dissolution of these constituents as water

infiltrates through the vadose zone of the disturbed areas and migrates over time to downgradient wells.

- During initial construction of the landfill, surface water and soft sediments were removed from pits generated during historical clay mining operations in vicinity to GWC-20, likely leading to oxidation of underlying sulfide minerals (pyrite) resulting in a concurrent increase in SO<sub>4</sub> concentrations within the groundwater.
- Lined Landfill and Lack of Indicator Parameters:
  - Parcel E is constructed with a 24-inch compacted clay liner underlain with a five-foot compacted soil buffer and capped with an 18-inch intermediate compacted soil cover; the intermediate cover system minimizes the hydraulic head potentially driving CCR constituents into the subsurface; the absence of a release of CCR constituents from the unit is supported by a lack of concentration increases over background PLs of CCR Appendix III indicator parameters such as Cl, B, or TDS in monitoring well GWC-20.

#### 4. **REFERENCES**

- Cressler, C.W. (1970). Geology and ground-water resources of Floyd and Polk Counties, Georgia. Information Circular 39, Geological Survey of Georgia.
- ERM (2018). 2017 Annual Groundwater Monitoring and Corrective Action Report, Plant Hammond Huffaker Road Landfill, Permit No. 057-022D (LI). January 31, 2018.
- Georgia Power Company (2016). Plant Hammond Huffaker Road Coal Combustion By-Products Disposal Facility, Design and Operations Plan Minor Modification -9/16/2016. Georgia Power Company.
- Geosyntec Consultants (2019). 2019 First Semiannual Groundwater Monitoring and Corrective Action Report, Plant Hammond Huffaker Road Landfill. August 2019.
- Southern Company Services, Inc. (2002). Plant Hammond Proposed Huffaker Road Coal Combustion By-Products Storage Facility Site Acceptability Report. Birmingham, Alabama: Earth Science and Environmental Engineering.
- USEPA (2015). Hazardous and Solid Waste Management Systems; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, 40 CFR Parts 257 and 261, Federal Register, Vol. 80, No. 74, April 17, 2015, pp.21302-21501

## FIGURES




Sanitas" v.9.6.23/ Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Sanitas" v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Constituent: Sulfate Analysis Run 11/22/2019 1:30 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas" v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Total Dissolved Solids Analysis Run 11/22/2019 1:30 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





# APPENDIX A

April 2019 Potentiometric Surface Contour Map from 2019 First Semiannual Report





# APPENDIX B

# Historical Aerial Photographs













Note: 1. Aerial Photograph from Google Earth





				Historica	I Aerial Photographs	5
			N	Geor Huf Rome,	gia Power Company faker Road Landfill Floyd County, Georgia	
			Ĩ	Geosy	ntec <sup>D</sup>	Figure
0	375	750	1,500	COIL	suitantis	B-1
			Feet	Kennesaw, GA	November 2019	

# APPENDIX C

Time Series from 2019 Semiannual Report

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Boron Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Time Series

Constituent: Boron Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored

values



Constituent: Boron Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Boron Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas  $^{\rm tw}$  v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Calcium Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Time Series

Constituent: Calcium Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Calcium Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Calcium Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Chloride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Time Series

Constituent: Chloride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Chloride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Chloride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill


Constituent: Fluoride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas  $^{\rm tw}$  v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Time Series

Constituent: Fluoride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Fluoride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Fluoride Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: pH Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Time Series

Constituent: pH Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: pH Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG





Constituent: pH Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Time Series

Constituent: Sulfate Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG





Constituent: Sulfate Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Total Dissolved Solids Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Constituent: Total Dissolved Solids Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Total Dissolved Solids Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

700



Time Series



Constituent: Total Dissolved Solids Analysis Run 8/15/2019 6:21 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

# APPENDIX C

# Laboratory Analytical and Field Sampling Reports

Appendix C1: Laboratory Analytical Data Packages and Data Validation Reports

Appendix C2: Field Data Sheets

## APPENDIX C1

# Laboratory Analytical Data Packages and Data Validation Reports

Laboratory Reports



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

April 24, 2019

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

RE: Project: Plant Hammond Pace Project No.: 2617140

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 08, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Batery Mr Damil

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

Enclosures

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





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

#### CERTIFICATIONS

Project: Plant Hammond Pace Project No.: 2617140

#### **Atlanta Certification IDs**

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

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

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



#### SAMPLE SUMMARY

Project: Plant Hammond Pace Project No.: 2617140

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
2617140001	GWA-3	Water	04/05/19 15:25	04/08/19 15:30	



## SAMPLE ANALYTE COUNT

Project: Plant Hammond Pace Project No.: 2617140

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617140001	GWA-3	EPA 6020B	JMW1	17	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA



#### ANALYTICAL RESULTS

#### Project: Plant Hammond

Pace Project No.: 2617140

Sample: GWA-3	Lab ID:	2617140001	Collecte	ed: 04/05/19	9 15:25	Received: 04/	08/19 15:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 00:10	7440-36-0	
Arsenic	0.00035J	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 00:10	7440-38-2	
Barium	0.13	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 00:10	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 00:10	7440-41-7	
Boron	0.12	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 00:10	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 00:10	7440-43-9	
Calcium	76.5	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 23:17	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 00:10	7440-47-3	
Cobalt	0.00031J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:10	7440-48-4	
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 00:10	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 00:10	7439-92-1	
Nickel	0.00075J	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 00:10	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 00:10	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:10	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 00:10	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 00:10	7440-62-2	
Zinc	0.0013J	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 00:10	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	456	mg/L	25.0	10.0	1		04/11/19 20:53		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	4.2	mg/L	0.25	0.024	1		04/10/19 05:19	16887-00-6	
Fluoride	0.31	mg/L	0.30	0.029	1		04/10/19 05:19	16984-48-8	
Sulfate	131	ma/l	10.0	0.17	10		04/10/19 10:43	14808-79-8	



Project: Plant Hammond

Pace Project No.: 2617140

QC Batch: 468622 Analysis Method: EPA 6020B QC Batch Method: EPA 3010A Analysis Description: 6020 MET Associated Lab Samples: 2617140001 METHOD BLANK: 2545263 Matrix: Water Associated Lab Samples: 2617140001 Blank Reporting Limit MDL Parameter Units Result Qualifiers Analyzed Antimony ND 0.0030 0.00011 04/11/19 20:42 mg/L mg/L Arsenic ND 0.0050 0.000060 04/11/19 20:42 Barium ND mg/L 0.010 0.000060 04/11/19 20:42 Beryllium mg/L ND 0.0030 0.000050 04/11/19 20:42 Boron mg/L ND 0.10 0.0026 04/11/19 20:42 Cadmium mg/L ND 0.0010 0.000070 04/11/19 20:42 Calcium mg/L ND 0.50 0.021 04/11/19 20:42 Chromium mg/L ND 0.010 0.00042 04/11/19 20:42 Cobalt mg/L ND 0.010 0.000050 04/11/19 20:42 ND Copper mg/L 0.025 0.00023 04/11/19 20:42 mg/L Lead ND 0.0050 0.000050 04/11/19 20:42 Nickel mg/L ND 0.010 0.00011 04/11/19 20:42 Selenium ND 0.010 mg/L 0.000080 04/11/19 20:42 Silver ND mg/L 0.010 0.000050 04/11/19 20:42 Thallium mg/L ND 0.0010 0.000060 04/11/19 20:42 Vanadium mg/L ND 0.010 0.00012 04/11/19 20:42 Zinc mg/L ND 0.010 0.0011 04/11/19 20:42

#### LABORATORY CONTROL SAMPLE: 2545264

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.01	0.0099	99	80-120	
Barium	mg/L	0.05	0.049	99	80-120	
Beryllium	mg/L	0.01	0.010	104	80-120	
Boron	mg/L	0.05	0.052J	104	80-120	
Cadmium	mg/L	0.01	0.010	102	80-120	
Calcium	mg/L	0.62	0.64	102	80-120	
Chromium	mg/L	0.05	0.051	102	80-120	
Cobalt	mg/L	0.01	0.010	102	80-120	
Copper	mg/L	0.05	0.051	103	80-120	
Lead	mg/L	0.05	0.050	100	80-120	
Nickel	mg/L	0.05	0.051	102	80-120	
Selenium	mg/L	0.05	0.051	101	80-120	
Silver	mg/L	0.025	0.025	102	80-120	
Thallium	mg/L	0.01	0.010	100	80-120	
Vanadium	mg/L	0.05	0.051	101	80-120	
Zinc	mg/L	0.05	0.051	102	80-120	

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

#### **REPORT OF LABORATORY ANALYSIS**

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



Project: Plant Hammond Pace Project No.: 2617140

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2545265 2545266													
			MS	MSD									
		2617144001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max		
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Antimony	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20		
Arsenic	mg/L	ND	0.01	0.01	0.0091J	0.0089J	91	89	75-125	2	20		
Barium	mg/L	42.3 ug/L	0.05	0.05	0.085	0.085	85	85	75-125	0	20		
Beryllium	mg/L	ND	0.01	0.01	0.0086	0.0089	86	89	75-125	4	20		
Boron	mg/L	1010J ug/L	0.05	0.05	1.0J	1.0J	67	48	75-125	1	20	M6	
Cadmium	mg/L	0.65J ug/L	0.01	0.01	0.011	0.011	99	99	75-125	0	20		
Calcium	mg/L	70000 ug/L	0.62	0.62	71.3	74.8	207	759	75-125	5	20	M6	
Chromium	mg/L	ND	0.05	0.05	0.048	0.048	96	95	75-125	1	20		
Cobalt	mg/L	4.9J ug/L	0.01	0.01	0.015	0.015	97	96	75-125	1	20		
Copper	mg/L	ND	0.05	0.05	0.049	0.048	98	97	75-125	1	20		
Lead	mg/L	ND	0.05	0.05	0.048	0.048	96	96	75-125	0	20		
Nickel	mg/L	3.5J ug/L	0.05	0.05	0.051	0.051	96	96	75-125	0	20		
Selenium	mg/L	ND	0.05	0.05	0.044	0.044	89	88	75-125	1	20		
Silver	mg/L	ND	0.025	0.025	0.023	0.023	92	91	75-125	1	20		
Thallium	mg/L	ND	0.01	0.01	0.0096	0.0096	96	96	75-125	0	20		
Vanadium	mg/L	ND	0.05	0.05	0.050	0.050	100	100	75-125	0	20		
Zinc	mg/L	4.2J ug/L	0.05	0.05	0.047	0.047	86	86	75-125	0	20		

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



Project:	Plant Hammond							
Pace Project No.:	2617140							
QC Batch:	26252		Analysis N	lethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total Di	ssolved Solids		
Associated Lab Sar	mples: 26171400	01						
LABORATORY CO	NTROL SAMPLE:	118510						
			Spike	LCS	LCS	% Rec		
Parar	meter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Soli	ids	mg/L	400	408	102	84-108		
SAMPLE DUPLICA	TE: 118512							
			2617150003	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Soli	ids	mg/L	231	0 23	80	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.



Project: Plant Ham	nond											
Pace Project No.: 2617140												
QC Batch: 26064			Analys	is Method	: Ef	PA 300.0						
QC Batch Method: EPA 300.0	D		Analys	is Descrip	tion: 30	0.0 IC Anio	ns					
Associated Lab Samples: 26	17140001											
METHOD BLANK: 117680			Ν	/latrix: Wa	ter							
Associated Lab Samples: 26	17140001											
			Blank	: R	eporting							
Parameter		Units	Resul	t	Limit	MDL		Analyzed	Qua	alifiers		
Chloride		mg/L		ND	0.25	0	.024	04/10/19 01:27	,			
Fluoride		mg/L		ND	0.30	0	.029	04/10/19 01:27	,			
Sulfate		mg/L		ND	1.0	0	.017 (	04/10/19 01:27	,			
LABORATORY CONTROL SAM	IPLE: 11	7681										
			Spike	LCS	6	LCS	%	Rec				
Parameter		Units	Conc.	Resu	ult '	% Rec	Lin	nits Qu	alifiers	-		
Chloride		mg/L	10		10.1	101		90-110				
Fluoride		mg/L	10		10.2	102		90-110				
Sulfate		mg/L	10		10.1	101		90-110				
MATRIX SPIKE & MATRIX SPI		CATE: 117682	2		117683							
			MS	MSD								
		2617086001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Red	c % Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	4.2	10	10	14.3	14.3	1	01 101	90-110	0	15	
Fluoride	mg/L	0.047J	10	10	10.4	10.4	1	03 103	90-110	0	15	
Sulfate	mg/L	10.8	10	10	19.6	19.6		89 88	90-110	0	15	M1
MATRIX SPIKE SAMPLE:	11	7684										
			261708	86002	Spike	MS		MS	% Rec			
Parameter		Units	Res	ult	Conc.	Result		% Rec	Limits		Qualif	iers
Chloride		mg/L		1.6	10	10	).7	91	90-	110		
Fluoride		mg/L		ND	10	ç	).2	92	90-	110		
Sulfate		mg/L		5.2	10	13	8.7	85	90-	110 M	1	

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

#### **REPORT OF LABORATORY ANALYSIS**

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



#### QUALIFIERS

Project: Plant Hammond

## Pace Project No.: 2617140

#### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

#### LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

#### ANALYTE QUALIFIERS

- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.



#### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:Plant HammondPace Project No.:2617140

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617140001	GWA-3	EPA 3010A	468622	EPA 6020B	468673
2617140001	GWA-3	SM 2540C	26252		
2617140001	GWA-3	EPA 300.0	26064		

Pace Aresyster

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	Т		The state of the second s			ysteritikaaryka)		(N/A) ou	Rosidual Chior					0#:261/140		17140	Fortes Frite ( Subjectioning ( )	5/5/1 bijs/h	112/13 1415	1 2/2/10 15231.1 × × ×		ANN) teci teci belet belet (NN) (NN) (NN) (NN) (NN) (NN) (NN) (NN
Section C Invoice Information:	Attention: scsinvoices@southernco.com	Company Name:	Address:		race rroject manager. Detsy modamer(gpaceraps.com,	Pace Profile #: 327 (AP) or 328 (Huff) Excerning Requested Analy	Direcentratives	25 25 25 25 25 25 25 25 25 25 25 25 25 2	жин-се темр А Тр5, Сі, F, SO Тр5, Сі, F, SO Метан (App. III, A Метан (App. III, A Метан (App. III, A Метано Ме							26	Line	11 AY3 Molia Mondan Bondar	1945 Withaw Cought -	The A a han a la		Re Correct In tal Hor
Section B Required Project Information:	Report To: Joju Abraham	Copy To: Lauren Petty, Geosyntec		Purchase Urder#	rrojeci Name. Plani Hammond	Project #:	(ศิล) ช (จิพด การ การ การ	2 ≥ 5 Baffer of the set of the s	· 동 은 당 약 중 옷 이 아이 아	witche weilster 24.4 8.25 h							A CONTRACTOR OF A DESCRIPTION OF A DESCR	Bread Wester / Security Course	Nocley Whenter Hacerynta 45/19	1/2/1000/ Creezenter 11/8/19		PRINT NAME OF SAMPLE SIGNATURE OF SAMPLE
ction A quired Ctiont Information:	nparty. Georgia Power - Coal Combustion Residuals	tress: 2480 Marrier Road	nta, GA 30339	ut: jabraham@southemco.com	re. (404)506-/239 FBX.	uested Due Date:			One Character per box. Wipe (A-Z, 0-9 / , -} Cither Semple Ids must be unique Tasue		446320						and the second	0 (1), ANTINENCY, ALTENCY	column Second Law Lew William	Martin Correll Correl Low	Bull W. Viswa Nur. 7.	age 12

						Ţ		
(	Sam	əle	Conditio	on	Upon Receipt			1
Pace Analy	tical <sup>®</sup> or the block		<u> </u>		1-200	·	Ducto at #	
7 <b>9</b>		-	UTA	_	power.			
		H	1				UO#:2617	140
Courier: L Feo E		Ч	J Commercia		Pace Other			Date: 04/15/19
Custody Seal on C	poler/Box Present:	Ч	no Se	als i	ntact: ves	Г	PM: BM Due	R
Decking Meterial				. Г				
Thermometer Lices		ays r		: L 1			Samples on ice, conting proce	es has begun
		Bid		vel Ne i	s Frozen: Ves No		Date and Initials of pers	on examining
Cooler Temperatur Temp should be above	e / · /		1091001 1133	uci	Comments:		contents: 4/8/	1 ª me
Chain of Custody Pr	resent:	ø	1 es □No □1	N/A	1.			
Chain of Custody Fi	led Out:	e		N/A	2.			
Chain of Custody R	elinquished:	ø	es 🗆 No 🗇	N/A	3.			
Sampler Name & Si	gnature on COC:	P		N/A	4.			
Samples Arrived wit	hin Hold Time:		es ⊡No □I	N/A	5.			
Short Hold Time A	nalysis (<72hr):		'es [] <b>240" []</b> 1	N/A	6.			
Rush Turn Around	Time Requested:		es 🖓 🗖 🗆 🛛	N/A	7.			
Sufficient Volume:		Ð		N/A	8			
Correct Containers	Used:	-27	es 🗆 No 🗖	N/A	9.			
-Pace Container	s Used: •			N/A		<u> </u>		
Containers Intact:	· · · · · · · · · · · · · · · · · · ·	2		N/A	10.			
Filtered volume rec	ived for Dissolved tests		′es □No 🔎	17A	11.		·····	
Sample Labels mat	ہے h COC:	머	fes ⊡No □ /,)	N/A	12.		:	
-Includes date/ti	ne/ID/Analysis Matrix:	-	$\omega_{-}$					
		P	res ⊡no ⊡	N/A	13.			
All containers needing compliance with EPA	preservation are found to be in recommendation.	æ		IN/A			i	
			/as 110		Initial when		Lot # of added	
exceptions: VOA, colifor	m, TOC, O&G, WI-DRO (water)			_	completed		preservative	
Samples checked f	pr dechlorination:		Yes ∐No 1⊿		14.			
Headspace in VOA	viais ( >6mm):	니	res ∐No Lui		15.			
Trip Blank Present:	Sopla Propert				10.			
Page Trip Blank Custody	# (if purchased):		صر ۱۸۵ res	INA			:	
	ייייייייייייייייייייייייייייייייייייי				····			·····
Client Notification	Resolution:		~				Field Data Required?	Y / N
Person Cont	acted:		D	ate/	Time:			
Comments/ Reso	iuuon:	-						
	<u>k</u>							
Project Manage	r Review:						Date:	
,				_		H-		

=

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

May 01, 2019

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

RE: Project: Plant Hammond Pace Project No.: 2617209

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 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.

This revised report replaces the one issued on 4/16/2019. The report has been revised to correct metals units per consultant request. No other changes have been made to this report.

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

Sincerely,

Batan Mr Damel

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

Enclosures

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





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

#### CERTIFICATIONS

Project: Plant Hammond Pace Project No.: 2617209

#### **Atlanta Certification IDs**

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

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

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



#### SAMPLE SUMMARY

Project: Plant Hammond Pace Project No.: 2617209

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617209001	 GWA-1	Water	04/08/19 10:56	04/09/19 13:30
2617209002	GWC-8	Water	04/08/19 13:15	04/09/19 13:30
2617209003	GWC-7	Water	04/08/19 17:51	04/09/19 13:30
2617209004	FD-02	Water	04/08/19 00:00	04/09/19 13:30
2617209005	GWA-2	Water	04/08/19 11:20	04/09/19 13:30
2617209006	GWC-9	Water	04/08/19 13:20	04/09/19 13:30
2617209007	GWC-6	Water	04/08/19 16:25	04/09/19 13:30
2617209008	GWA-4	Water	04/08/19 13:05	04/09/19 13:30
2617209009	GWA-11	Water	04/08/19 16:21	04/09/19 13:30
2617209010	GWC-23	Water	04/08/19 15:50	04/09/19 13:30



## SAMPLE ANALYTE COUNT

Project: Plant Hammond Pace Project No.: 2617209

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617209001	GWA-1	EPA 6020B	JMW1		PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617209002	GWC-8	EPA 6020B	JMW1	17	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617209003	GWC-7	EPA 6020B	JMW1	17	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617209004	FD-02	EPA 6020B	JMW1	17	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617209005	GWA-2	EPA 6020B	JMW1	17	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617209006	GWC-9	EPA 6020B	JMW1	17	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617209007	GWC-6	EPA 6020B	JMW1	17	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617209008	GWA-4	EPA 6020B	JMW1	17	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617209009	GWA-11	EPA 6020B	JMW1	17	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617209010	GWC-23	EPA 6020B	JMW1	17	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA



#### ANALYTICAL RESULTS

#### Project: Plant Hammond

Pace Project No.: 2617209

Sample: GWA-1	Lab ID:	2617209001	Collecte	ed: 04/08/19	9 10:56	Received: 04/	09/19 13:30 Ma	atrix: Water	
	Daarka	11-14-	Report	MDI	55	Durana	A	040 N	Qual
Parameters		Units				Prepared	Analyzed	CAS NO.	Quai
6020 MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 00:17	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 00:17	7440-38-2	
Barium	0.031	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 00:17	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 00:17	7440-41-7	
Boron	0.019J	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 00:17	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 00:17	7440-43-9	
Calcium	15.7	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 23:24	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 00:17	7440-47-3	
Cobalt	0.00026J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:17	7440-48-4	
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 00:17	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 00:17	7439-92-1	
Nickel	0.00034J	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 00:17	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 00:17	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:17	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 00:17	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 00:17	7440-62-2	
Zinc	ND	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 00:17	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	91.0	mg/L	25.0	10.0	1		04/11/19 20:54		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.1	mg/L	0.25	0.024	1		04/11/19 03:40	16887-00-6	
Fluoride	0.057J	mg/L	0.30	0.029	1		04/11/19 03:40	16984-48-8	
Sulfate	4.6	ma/l	1.0	0.017	1		04/11/19 03:40	14808-79-8	


## Project: Plant Hammond

Pace Project No.: 2617209

Sample: GWC-8	Lab ID:	2617209002	Collecte	ed: 04/08/19	9 13:15	Received: 04/	09/19 13:30 Ma	atrix: Water	
			Report						
Parameters	_ Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	thod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 00:21	7440-36-0	
Arsenic	0.0015J	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 00:21	7440-38-2	
Barium	0.13	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 00:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 00:21	7440-41-7	
Boron	0.055J	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 00:21	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 00:21	7440-43-9	
Calcium	81.5	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 23:28	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 00:21	7440-47-3	
Cobalt	0.0017J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:21	7440-48-4	
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 00:21	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 00:21	7439-92-1	
Nickel	0.00064J	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 00:21	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 00:21	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:21	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 00:21	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 00:21	7440-62-2	
Zinc	0.0012J	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 00:21	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	438	mg/L	25.0	10.0	1		04/11/19 20:54		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	3.2	mg/L	0.25	0.024	1		04/11/19 04:22	16887-00-6	
Fluoride	0.10J	mg/L	0.30	0.029	1		04/11/19 04:22	16984-48-8	
Sulfate	39.9	ma/L	1.0	0.017	1		04/11/19 04:22	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617209

Sample: GWC-7	Lab ID:	2617209003	Collecte	ed: 04/08/19	9 17:51	Received: 04/	09/19 13:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	thod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 00:24	7440-36-0	
Arsenic	0.0057	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 00:24	7440-38-2	
Barium	0.24	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 00:24	7440-39-3	
Beryllium	0.000058J	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 00:24	7440-41-7	
Boron	0.049J	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 00:24	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 00:24	7440-43-9	
Calcium	56.1	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 23:31	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 00:24	7440-47-3	
Cobalt	0.0086J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:24	7440-48-4	
Copper	0.00025J	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 00:24	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 00:24	7439-92-1	
Nickel	0.030	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 00:24	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 00:24	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:24	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 00:24	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 00:24	7440-62-2	
Zinc	0.051	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 00:24	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	295	mg/L	25.0	10.0	1		04/11/19 20:55		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.9	mg/L	0.25	0.024	1		04/11/19 04:42	16887-00-6	
Fluoride	0.17J	mg/L	0.30	0.029	1		04/11/19 04:42	16984-48-8	
Sulfate	97.1	ma/L	10.0	0.17	10		04/15/19 23:36	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617209

Sample: FD-02	Lab ID:	2617209004	Collecte	ed: 04/08/19	9 00:00	Received: 04/	09/19 13:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: El	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 00:28	7440-36-0	
Arsenic	0.0015J	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 00:28	7440-38-2	
Barium	0.13	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 00:28	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 00:28	7440-41-7	
Boron	0.056J	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 00:28	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 00:28	7440-43-9	
Calcium	84.5	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 23:35	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 00:28	7440-47-3	
Cobalt	0.0017J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:28	7440-48-4	
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 00:28	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 00:28	7439-92-1	
Nickel	0.00068J	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 00:28	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 00:28	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:28	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 00:28	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 00:28	7440-62-2	
Zinc	0.0013J	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 00:28	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	407	mg/L	25.0	10.0	1		04/15/19 21:21		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	3.1	mg/L	0.25	0.024	1		04/11/19 05:03	16887-00-6	
Fluoride	0.11J	mg/L	0.30	0.029	1		04/11/19 05:03	16984-48-8	
Sulfate	39.2	ma/l	1.0	0.017	1		04/11/19 05:03	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617209

Sample: GWA-2	Lab ID:	2617209005	Collecte	ed: 04/08/19	9 11:20	Received: 04/	09/19 13:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	thod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 00:39	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 00:39	7440-38-2	
Barium	0.15	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 00:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 00:39	7440-41-7	
Boron	0.071J	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 00:39	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 00:39	7440-43-9	
Calcium	44.1	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 23:38	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 00:39	7440-47-3	
Cobalt	0.000061J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:39	7440-48-4	
Copper	0.00029J	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 00:39	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 00:39	7439-92-1	
Nickel	ND	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 00:39	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 00:39	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:39	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 00:39	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 00:39	7440-62-2	
Zinc	0.0014J	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 00:39	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	209	mg/L	25.0	10.0	1		04/15/19 21:21		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.6	mg/L	0.25	0.024	1		04/11/19 05:24	16887-00-6	
Fluoride	0.072J	mg/L	0.30	0.029	1		04/11/19 05:24	16984-48-8	
Sulfate	18.1	ma/L	1.0	0.017	1		04/11/19 05:24	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617209

Sample: GWC-9	Lab ID:	2617209006	Collected: 04/08/19 13:20			Received: 04/09/19 13:30 Matrix: Water			
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/11/19 23:56	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/11/19 23:56	7440-38-2	
Barium	0.058	mg/L	0.010	0.000060	1	04/10/19 19:59	04/11/19 23:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/11/19 23:56	7440-41-7	
Boron	0.015J	mg/L	0.10	0.0026	1	04/10/19 19:59	04/11/19 23:56	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/11/19 23:56	7440-43-9	
Calcium	36.3	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 23:42	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/11/19 23:56	7440-47-3	
Cobalt	0.00041J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/11/19 23:56	7440-48-4	
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/11/19 23:56	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/11/19 23:56	7439-92-1	
Nickel	0.0021J	mg/L	0.010	0.00011	1	04/10/19 19:59	04/11/19 23:56	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/11/19 23:56	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/11/19 23:56	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/11/19 23:56	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/11/19 23:56	7440-62-2	
Zinc	0.0016J	mg/L	0.010	0.0011	1	04/10/19 19:59	04/11/19 23:56	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	264	mg/L	25.0	10.0	1		04/15/19 21:21		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	1.0	mg/L	0.25	0.024	1		04/11/19 05:45	16887-00-6	
Fluoride	0.058J	mg/L	0.30	0.029	1		04/11/19 05:45	16984-48-8	
Sulfate	73.5	ma/L	10.0	0.17	10		04/15/19 23:59	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617209

Sample: GWC-6	Lab ID:	2617209007	Collecte	ed: 04/08/19	9 16:25	Received: 04/	09/19 13:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	thod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 00:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 00:00	7440-38-2	
Barium	0.15	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 00:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 00:00	7440-41-7	
Boron	0.036J	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 00:00	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 00:00	7440-43-9	
Calcium	67.0	mg/L	10.0	0.41	20	04/10/19 19:59	04/11/19 23:45	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 00:00	7440-47-3	
Cobalt	0.00022J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:00	7440-48-4	
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 00:00	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 00:00	7439-92-1	
Nickel	0.00032J	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 00:00	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 00:00	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 00:00	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 00:00	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 00:00	7440-62-2	
Zinc	0.0013J	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 00:00	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	353	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.1	mg/L	0.25	0.024	1		04/11/19 06:05	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/11/19 06:05	16984-48-8	
Sulfate	131	mg/L	10.0	0.17	10		04/16/19 00:22	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617209

Sample: GWA-4	Lab ID:	2617209008	Collecte	ed: 04/08/19	9 13:05	Received: 04/	09/19 13:30 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 01:11	7440-36-0	
Arsenic	0.00023J	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 01:11	7440-38-2	
Barium	0.047	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 01:11	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 01:11	7440-41-7	
Boron	0.057J	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 01:11	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 01:11	7440-43-9	
Calcium	86.6	mg/L	10.0	0.41	20	04/10/19 19:59	04/12/19 00:42	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 01:11	7440-47-3	
Cobalt	0.00044J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:11	7440-48-4	
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 01:11	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 01:11	7439-92-1	
Nickel	0.00089J	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 01:11	7440-02-0	
Selenium	0.00014J	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 01:11	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:11	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 01:11	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 01:11	7440-62-2	
Zinc	0.0023J	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 01:11	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	522	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	3.6	mg/L	0.25	0.024	1		04/11/19 06:26	16887-00-6	
Fluoride	0.12J	mg/L	0.30	0.029	1		04/11/19 06:26	16984-48-8	
Sulfate	248	ma/L	20.0	0.34	20		04/16/19 00:45	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617209

Sample: GWA-11	Lab ID:	2617209009	Collecte	ed: 04/08/19	9 16:21	Received: 04/	/09/19 13:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 01:26	7440-36-0	
Arsenic	0.00012J	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 01:26	7440-38-2	
Barium	0.031	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 01:26	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 01:26	7440-41-7	
Boron	0.034J	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 01:26	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 01:26	7440-43-9	
Calcium	22.4	mg/L	10.0	0.41	20	04/10/19 19:59	04/12/19 00:46	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 01:26	7440-47-3	
Cobalt	0.00076J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:26	7440-48-4	
Copper	0.0013J	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 01:26	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 01:26	7439-92-1	BC
Nickel	0.0023J	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 01:26	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 01:26	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:26	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 01:26	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 01:26	7440-62-2	
Zinc	0.0024J	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 01:26	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	142	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	1.3	mg/L	0.25	0.024	1		04/11/19 08:10	16887-00-6	
Fluoride	0.035J	mg/L	0.30	0.029	1		04/11/19 08:10	16984-48-8	
Sulfate	13.2	ma/L	1.0	0.017	1		04/11/19 08:10	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617209

Sample: GWC-23	Lab ID:	2617209010	Collecte	ed: 04/08/19	9 15:50	Received: 04/	/09/19 13:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 01:29	7440-36-0	
Arsenic	0.00034J	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 01:29	7440-38-2	
Barium	0.059	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 01:29	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 01:29	7440-41-7	
Boron	0.022J	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 01:29	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 01:29	7440-43-9	
Calcium	39.8	mg/L	10.0	0.41	20	04/10/19 19:59	04/12/19 00:49	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 01:29	7440-47-3	
Cobalt	0.00046J	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:29	7440-48-4	
Copper	0.00050J	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 01:29	7440-50-8	
Lead	0.00018J	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 01:29	7439-92-1	BC
Nickel	0.0011J	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 01:29	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 01:29	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:29	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 01:29	7440-28-0	
Vanadium	0.00017J	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 01:29	7440-62-2	
Zinc	0.0016J	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 01:29	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	191	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	1.5	mg/L	0.25	0.024	1		04/11/19 08:31	16887-00-6	
Fluoride	0.057J	mg/L	0.30	0.029	1		04/11/19 08:31	16984-48-8	
Sulfate	6.2	ma/L	1.0	0.017	1		04/11/19 08:31	14808-79-8	



## **QUALITY CONTROL DATA**

Project:	Plant H	Hammond										
Pace Project No.:	261720	09										
QC Batch:	4686	22	Analysis Meth	od: EF	PA 6020B							
QC Batch Method:	EPA :	3010A	Analysis Desc	ription: 60	20 MET							
Associated Lab Sar	nples:	2617209001, 2617209002, 2 2617209009, 2617209010	2617209003, 26172	209004, 261720	9005, 26172090	06, 2617209007, 2	617209008,					
METHOD BLANK:	254526	63	Matrix:	Water								
Associated Lab Sar	ted Lab Samples: 2617209001, 2617209002, 2617209003, 2617209004, 2617209005, 2617209006, 2617209007, 2617209008, 2617209009, 2617209010											
			Blank	Reporting								
Paran	neter	Units	Result	Limit	MDL	Analyzed	Qualifiers					
Antimony		mg/L	ND	0.0030	0.00011	04/11/19 20:42						
Arsenic		mg/L	ND	0.0050	0.000060	04/11/19 20:42						
Barium		mg/L	ND	0.010	0.000060	04/11/19 20:42						
Beryllium		mg/L	ND	0.0030	0.000050	04/11/19 20:42						
Boron		mg/L	ND	0.10	0.0026	04/11/19 20:42						
Cadmium		mg/L	ND	0.0010	0.000070	04/11/19 20:42						
Calcium		mg/L	ND	0.50	0.021	04/11/19 20:42						
Chromium		mg/L	ND	0.010	0.00042	04/11/19 20:42						
Cobalt		mg/L	ND	0.010	0.000050	04/11/19 20:42						
Copper		mg/L	ND	0.025	0.00023	04/11/19 20:42						
Lead		mg/L	ND	0.0050	0.000050	04/11/19 20:42						
Nickel		mg/L	ND	0.010	0.00011	04/11/19 20:42						
Selenium		mg/L	ND	0.010	0.000080	04/11/19 20:42						
Silver		mg/L	ND	0.010	0.000050	04/11/19 20:42						
Thallium		mg/L	ND	0.0010	0.000060	04/11/19 20:42						
Vanadium		mg/L	ND	0.010	0.00012	04/11/19 20:42						
Zinc		mg/L	ND	0.010	0.0011	04/11/19 20:42						

## LABORATORY CONTROL SAMPLE: 2545264

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.01	0.0099	99	80-120	
Barium	mg/L	0.05	0.049	99	80-120	
Beryllium	mg/L	0.01	0.010	104	80-120	
Boron	mg/L	0.05	0.052J	104	80-120	
Cadmium	mg/L	0.01	0.010	102	80-120	
Calcium	mg/L	0.62	0.64	102	80-120	
Chromium	mg/L	0.05	0.051	102	80-120	
Cobalt	mg/L	0.01	0.010	102	80-120	
Copper	mg/L	0.05	0.051	103	80-120	
Lead	mg/L	0.05	0.050	100	80-120	
Nickel	mg/L	0.05	0.051	102	80-120	
Selenium	mg/L	0.05	0.051	101	80-120	
Silver	mg/L	0.025	0.025	102	80-120	
Thallium	mg/L	0.01	0.010	100	80-120	
Vanadium	mg/L	0.05	0.051	101	80-120	
Zinc	ma/L	0.05	0.051	102	80-120	

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

## **REPORT OF LABORATORY ANALYSIS**

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



Project: Plant Hammond Pace Project No.: 2617209

MATRIX SPIKE & MATRIX SPIKI	2545266											
			MSD									
		2617144001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L		0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Arsenic	mg/L		0.01	0.01	0.0091J	0.0089J	91	89	75-125	2	20	
Barium	mg/L		0.05	0.05	0.085	0.085	85	85	75-125	0	20	
Beryllium	mg/L		0.01	0.01	0.0086	0.0089	86	89	75-125	4	20	
Boron	mg/L	1010J ug/L	0.05	0.05	1.0J	1.0J	67	48	75-125	1	20	M6
Cadmium	mg/L		0.01	0.01	0.011	0.011	99	99	75-125	0	20	
Calcium	mg/L	70000 ug/L	0.62	0.62	71.3	74.8	207	759	75-125	5	20	M6
Chromium	mg/L		0.05	0.05	0.048	0.048	96	95	75-125	1	20	
Cobalt	mg/L		0.01	0.01	0.015	0.015	97	96	75-125	1	20	
Copper	mg/L		0.05	0.05	0.049	0.048	98	97	75-125	1	20	
Lead	mg/L		0.05	0.05	0.048	0.048	96	96	75-125	0	20	
Nickel	mg/L		0.05	0.05	0.051	0.051	96	96	75-125	0	20	
Selenium	mg/L		0.05	0.05	0.044	0.044	89	88	75-125	1	20	
Silver	mg/L		0.025	0.025	0.023	0.023	92	91	75-125	1	20	
Thallium	mg/L		0.01	0.01	0.0096	0.0096	96	96	75-125	0	20	
Vanadium	mg/L		0.05	0.05	0.050	0.050	100	100	75-125	0	20	
Zinc	mg/L		0.05	0.05	0.047	0.047	86	86	75-125	0	20	

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



Project:	Plant Hammond						
Pace Project No.:	2617209						
QC Batch:	26252		Analysis M	lethod:	SM 2540C		
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total Di	ssolved Solids	
Associated Lab Sar	mples: 26172090	01, 2617209002, 3	2617209003				
LABORATORY CO	NTROL SAMPLE:	118510					
			Spike	LCS	LCS	% Rec	
Parar	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Total Dissolved Soli	ids	mg/L	400	408	102	84-108	
SAMPLE DUPLICA	TE: 118512						
			2617150003	Dup		Max	
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers
Total Dissolved Soli	ids	mg/L	231	0 23	380	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.



Project:	Plant Hammond							
Pace Project No.:	2617209							
QC Batch:	26275		Analysis M	lethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total D	issolved Solids		
Associated Lab Sar	mples: 26172090	04, 2617209005,	2617209006, 26	17209007, 261	7209008, 2617	209009, 261720	9010	
LABORATORY CO	NTROL SAMPLE:	118616						
			Spike	LCS	LCS	% Rec		
Para	meter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Sol	ids	mg/L	400	381	95	84-108		
SAMPLE DUPLICA	TE: 118618							
			2617267003	Dup		Max		
Para	meter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	26	7 2	52	6	10	
SAMPLE DUPLICA	TE: 118698							
			2617209006	Dup		Max		
Para	meter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	26	4 2	45	7	10	

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



Project:	Plant Hamr	nond											
Pace Project No.:	2617209												
QC Batch:	26135			Analys	is Method	: El	PA 300.0						
QC Batch Method:	EPA 300.0	)		Analys	sis Descrip	tion: 30	0.0 IC Anio	ns					
Associated Lab Sar	nples: 261 261	17209001, 17209009,	2617209002, 20 2617209010	617209003	, 2617209	004, 261720	09005, 2617	7209006, 2	617209007	, 2617209	9008,		
METHOD BLANK:	117979			Ν	Matrix: Wa	ter							
Associated Lab Sar	nples: 261 261	7209001,	2617209002, 20 2617209010	617209003	, 2617209	004, 261720	09005, 2617	7209006, 2	617209007	, 2617209	9008,		
		,		Blank	K R	eporting							
Parar	neter		Units	Resul	t	Limit	MDL	/	Analyzed	Qua	alifiers		
Chloride			mg/L	0.	.064J	0.25	0	.024 04/	10/19 21:47	,			
Fluoride			mg/L		ND	0.30	0	.029 04/	10/19 21:47				
Sulfate			mg/L		ND	1.0	0	0.017 04/	10/19 21:47				
LABORATORY CO	NTROL SAM	PLE: 11	7980										
_				Spike	LCS	6	LCS	% Red	;				
Parar	neter		Units	Conc.	Resu	ult	% Rec	Limits	. Qi	alifiers	-		
Chloride			mg/L	10	)	10.2	102	90	)-110				
Fluoride			mg/L	10		10.0	100	90	)-110				
Sulfate			mg/L	10		9.9	99	90	)-110				
MATRIX SPIKE & M	ATRIX SPIK		ATE: 117981			117982							
				MS	MSD					_			
Damasat		1.1	2617207001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	0
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits			Quai
Chloride		mg/L	0.25J	10	10	9.9	10	96	97	90-110	1	15	
Fluoride		mg/L	ND 0.101	10	10	9.5	9.6	95	96	90-110	1	15	
Sulfate		mg/L	0.13J	10	10	9.5	9.6	94	94	90-110	1	15	
MATRIX SPIKE SA	MPLE:	11	7983										
Davar	notor		Linita	261715 Boo	50001	Spike	MS	N oz u	IS Boo	% Rec			loro
Parar	netei		Units	Kes	uit		Result	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		LIMITS		Qualif	
Chloride			mg/L		131	10	10	).5	-1210	90-	110		
Fluoride			mg/L		0.13J 202	10	9	9.4 N 7	93	90-	110		
Sundle			mg/∟		392	10	13	D. I	-3/60	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**

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



## QUALIFIERS

Project: Plant Hammond Pace Project No.: 2617209

### 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

- BC The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.
- M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.



## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	Plant Hammond
Pace Project No .:	2617209

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617209001	GWA-1	EPA 3010A	468622	EPA 6020B	468673
2617209002	GWC-8	EPA 3010A	468622	EPA 6020B	468673
2617209003	GWC-7	EPA 3010A	468622	EPA 6020B	468673
2617209004	FD-02	EPA 3010A	468622	EPA 6020B	468673
2617209005	GWA-2	EPA 3010A	468622	EPA 6020B	468673
2617209006	GWC-9	EPA 3010A	468622	EPA 6020B	468673
2617209007	GWC-6	EPA 3010A	468622	EPA 6020B	468673
2617209008	GWA-4	EPA 3010A	468622	EPA 6020B	468673
2617209009	GWA-11	EPA 3010A	468622	EPA 6020B	468673
2617209010	GWC-23	EPA 3010A	468622	EPA 6020B	468673
2617209001	GWA-1	SM 2540C	26252		
2617209002	GWC-8	SM 2540C	26252		
2617209003	GWC-7	SM 2540C	26252		
2617209004	FD-02	SM 2540C	26275		
2617209005	GWA-2	SM 2540C	26275		
2617209006	GWC-9	SM 2540C	26275		
2617209007	GWC-6	SM 2540C	26275		
2617209008	GWA-4	SM 2540C	26275		
2617209009	GWA-11	SM 2540C	26275		
2617209010	GWC-23	SM 2540C	26275		
2617209001	GWA-1	EPA 300.0	26135		
2617209002	GWC-8	EPA 300.0	26135		
2617209003	GWC-7	EPA 300.0	26135		
2617209004	FD-02	EPA 300.0	26135		
2617209005	GWA-2	EPA 300.0	26135		
2617209006	GWC-9	EPA 300.0	26135		
2617209007	GWC-6	EPA 300.0	26135		
2617209008	GWA-4	EPA 300.0	26135		
2617209009	GWA-11	EPA 300.0	26135		
2617209010	GWC-23	EPA 300.0	26135		

Pare Analytical

# CHAIN-OF-CUSTODY / Analytical Request Document

·		The Chain-of-C	istody is a LEGAL DOCUMENT. All relevant fields must be compl	eted accurately.
Section A		Section B	Section C	
Required C	Client Information:	Required Project Information:	throice information:	Base: 1 at 1/
Company:	Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham	Attention: scsinvoices@southernco.com	
Address:	2480 Maner Road	Copy To: Lauren Petty, Geosyntec	Company Name:	
Allanta, GA	A 30339		Address:	
Email: ja	thratham@southernco.com	Purchase Order #: SCS10348606	Pace Quote:	A State of the sta
Phone:	(404)506-7239 Fax	Project Name: Plant Hammond	Pace Project Manager: betsy modanial@bacelabs.com	
Requested	Due Date: Mandan TAT	Project #:	Pace Profile #: 327 (AP) or 328 (Huff)	
		(		
		(9M)		
	MATRI	x cope # 8 0 COLLECTED	Z Preservatives	
	Orbite	SWEET DW OUT C		
				1)

		Analene Trac Trag	vect Name	0	at Hammond				Dared	Drugart	ManaM	į			4		ļ										rt,
	aqueste	ted Due Date: Nandand TPT Pr	¥861 #:	-					- ace	Profile		27 (AP)	or 328	(Huff)	Ned Dec	BIBDS.CC	é							Hon			158
											1							No.		Contraction of the	The second second	ALC: NO.	5				_
		MATRIX	A CO	(dwoo		COLLECT	EO	N			Pres	ervatî	ves		EN/X	ET.	F										
		SAMPLE ID Survey week	물건옷 또 약 의	000 DIEA 020)	STARI		END	I COLLECTIO	St						(VI .qqA 2	080 /VI .qq	(080.5	<b> </b>				(N/A) (			9		
	# WƏTI	One Charactor por box. Wipe (A-Z, 0-9 /, -) Ar Cond Sample Ids must be unique Tasue	\$€28 2002 xi9TAM	SAMPLE TYPE	DATE	D IWE	ATE Th	A GMPLE TEMP A	# OF CONTRINE	H52O4 Nubleaselved	EONH	HOBN	Ma25203	Olher	<b>263VI6RA</b>	A ,III .qqA) steM	LDS' CI' E' 204	Redium 226/228				entrolid Chicaria					
		GWA-1		3	1 mal	<u>81 M</u>	5	56 15	5	2	-			<u> </u>	⊢	Í	7					1					
		GWC-3	3	2	4/e t+ 1	y are	9 (m) (3	2	•	2	Ξ				1	Ĺ	2	1	-			1					
		Gwc-3	3	म त	4/6/14 I;	3/1 Z.ht	5   13 2   13	2	•	~	-				•	Ĺ	Z				$\vdash$						
		70-02	*	2	4/8/14	7	elte -		r	2	-			<u> </u>			2	-		1				J			_
																	<u> </u>			1	Ц	1	2				
														$\square$	Ц		#		$\mathbb{Y}^{-}$			T-					
1 1 1		6-3144				•		7		6	<u>et</u>	$\overline{\Lambda}$						-	+								
						3	3	Þ	<u>\</u>								F	$\vdash$	+	╞	╞						
					$\square$	$\left  \right $										<u>∦</u>	T	θĤ				RG.	0				
	101		$\mathbf{h}$									[											2.			• • •	
										-							<u> </u>										-
89 <u>9</u> 9										-						+	<b>5</b> 8	1720					2			1	
		s jalannoomoon		SIDON		<b>NOTAL</b>		<b>D</b>						<u>D</u> DU					ΔĒ.					EcoND			
┦			Grant	オフ	10/10	will soo	5	1/200)A	2	12	1	all	0 3	1 100	1	Į\$	101	<u> </u>		2	Ś					100000	
			Naili	9 10	Hupans		5	8/14	2	0	2	1 10 m	1		14				10	2001		T		_	╈		
			£35.	Lon	1 Cees	- martine	- 4/	9/19	=	27	N			4	0			t \$	G G		<u>, r</u>			_	╀	Τ	
												2	tx R	R	X	0		3	Te	1	2	11	18	7	0	5	
īα	Pa				HONE .	N NET UN	<b>UNITAL</b>	SIGNA															+	1	┢		
90 22	ge 22					SIGNAT		AMPLER	5	2	ナト	No	환		F	DATES	ioned:					) ni 9M	bevied (N	led Vpote	n Dies V) V	4) #	
. 01 20	of 2				_				Ň	line	Ŋ	ð,	Ŷ					5		-		эт	92) 93) (X)	seS SuD	ν8ς (Λ\) 093	inta: //Y)	

÷

I

CHAIN-OF-CU The Chain-AC-Network

Pace Analytical

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

ig a	d d Client Information:	Section B Required P	roject In	formation:			Section	LC Informat												1		=	Г	
×.	Georgia Power - Coal Combustion Residuals	Report To:	Joju A	braham			Attentio	2	sinvoices	Bouthe	2000	E				Г		Pa	.: g	J	ŏ	7	٦	
,, I C	2480 Maner Road	Copy To:	Laurer	h Petty, Geosyntec			Compar	y Name:								Т								
ייוכ	A 30339		:				Address										KANE S					0.000		
<b>~</b> 11	au anamgeouriernoo.com	Purchase C	rder #:	SCS10348606			Pace Q	Jote:												TOP WALK			1	1
18	(404)500-/239 [rac	Project Nan	ے بو	Hant Hammond			Pace Pr	oject Mar	vager:	betsy.	modanie	i@pacel	abs.con	<b> </b>					(A.1.15)			A A REPORT	R	
		Lided #.					Pace Pn	;# 9jjo	327 (AI	<sup>2</sup> ) or 328	(Huff)								Ĭ	Ą			2	
_			þ			$\left  \right $	ŀ				Ĩ				漫画	L'HIGORDE	<b>TWAN</b>						ĨQ.	
	NATRN	2005	Valio) 1	COLL	ECTED	1		4	is nose	ivec		N/A	-+		-									
	Chinking was water water SAMPLE ID Societation Societatio Societatio Societatio Societatio	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	eboo bilav ses (GeGRAB Cert	START	EX	COLLECTION	s						p. IV, D&O.						) (N/A)				割	
	One Character per box. Wree (A.Z. 0-9.1, -) Ar Sample Ids must be unique Tissue	AR D ST	MATRIX CODE (	DATE	DATE	RA 9MBT 3J9MA2	# ОF СОИТАІИЕR Unpreserved	EONH POSZH	N®OH HCI	Nathanol Nathanol	Other	5 203 VIBUA	2A ,III .qqA) sieM 8 III .qqA) eleteM	102' CI' E' 204	077/072 1//2/000				eninotri) leublees					
	1-ANS		2	34 [4] (10 (5 <sup>4</sup>	11 44 191	20 K.S	3 7	╞				1	┟╴			$\square$	╋	╞						
	6-MC-9		とて	2 41910 5: 0	414/113	2015	32		<u> </u>		-	Ī			1	+			1				_	
	HJWC- (a		5	٢٠١ <u>٩</u> ٩٩٩، ۵،	4 19/19/0	25,04	32			-	Ē	1		12	Ļ	-	╋							
													<b> </b>			$\square$	$\mathbb{H}$	$\Lambda$	$\uparrow$				_	
													$\left  + \right $	$\mathbb{T}$	$\mathbf{I}$		+							
					,			-		$\square$	<u>Λ</u>		-		-			-						
				11/4		1	H	h			Ľ					F		-					<b>—</b>	
				E			$\square$				1		_		+	Ŧ	Ŧ	$\pm$					- <u></u>	
		$\mathbb{N}$			-										MC	ŧ	Ň	61		0				
1								_					$\neg$		н. Н	튧				ate	6	16/15		
														[	CLIE	NT:	GAPo		СR СС					
54X.04			anour a	dep en a fruction					-					-0						Apres.	<b>Morrido</b>		100	
		Poll	<u>ک</u>	Andersan	(mar)	1018	Ð		the 1	10.1		H'		in li	10			<u>к</u>					त्रा	
		Noch	ie M	Lesdens/ Cree	hale 41	0(19	202								13	10		<u>ا د</u>	+					
		123	Clear	Lowsen K	1	2	15		L.	17	4	2			4.9	61			+					
				SANDIE	ENDIE AND	GNATU	(E)		4	J.	) ~	M.	Ś	Ž	<u>i i i</u>	<u>1/1</u> 9	10	220	7+	8	8	入	ī	
				PRUN SHGN	IT Name of SAI IATURE of SAI	APLER:	Ĩ,	æ	A C	S I	8		ATE Sig	Paet:	181	6/			Received on	(N/A)	(N/A) 568(80 968(80 -	(V/N) Semples		
														1							S	) 4 5	-	

ł

. . . . . . . . . .

Pace Analytical

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

Reque Reque	ten A dred Cliont Information: Aany: Georgia Power - Coal Combustion Residuals ass: 2480 Maner Road as (A 30339 a, (A 404)505-7239 ested Due Data: (A A A A A A	I he Chain-of-Custo Section B Required Project Information: Report To: Joju Abraham Copy To: Lauren Petry, Geosyntec Purchase Order #: SCS10346606 Project Name: Plant Hammond	ody is a LEGAL DOCUMENT. All relevant fields must be completed in the complete complete throad a leader of the complete throad and the complete throad a leader of the company name: Address: Address: Page Royad Manager: betsy, modeniel@page1abs.com, Doco Double:	eted accurately.       Page : 3 of 4
LEW #	AATRIC AAMPLE ID AATRIC Develop Water Water Water Water Water Market Mar	Sample TYPE (G=GRB C=COMP) AMTRIX CODE (see valid codes to left) AMATRIX CODE (see valid codes to left) AMPLE TYPE (G=GRB C=COMP) AMPLE TYPE (G=GRB C=C	Action         Action<	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	6-VA-1 6-VA-11	7648913514891355		
				-2617209 Due Date: 04/16/19 GRPower-CCR
Page 24 of 2		Media rulution / augu 4-347 2015/000/ Crossinty (19/19 2010/19 200/ Crossinty 19/19	1812 Markin Munum Jours W 1811 2010 275/and Commun 1481 1127 MANAN 494 Baron Recder Baron Recder	(1,14) 2 (1,14) 2 (1,14) 2 (1,14) 2 (1,14) 2 (2 (1,14) 2 (1,

Pace Analytical

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

ł

				in the second start of the second		a service of a state of the service			(N/A) (	eninoiri) (eubise)						.2617209	Due Date: 04/16/19	utiPower-CCR	Souther States Continues	car -	4 112J	4133072 2 2 2		TEMP In Cooler (Y/N) (Y/	
Section C	Invoice information:	Autention. scsirvoices@southernco.com	compary Name: Artrase	Auditad. Bood Dumbar	Pace Project Mananer Monumoration	Pace Profile #: 327 (AP) or 328 (Huff)		Preservatives	25 20 20 20 20 20 20 20 20 20 20 20 20 20	<ul> <li>CF CONTAINEE</li> <li>Unpreserved</li> <li>Methanol</li> <li>Metals (App. III, Adv.</li> </ul>	32 11 1 4 4 4 - 1								Tute According Financial Car	1010 (212/00) (rashir (18)	11-1-1-1 Bace 41.911	Malman 4/al	Aladia Manua	Norlie Munten DATE Signed: 4/8/1	~
Section B	Required Project untormation:	CODY TO' 1 SURGE Party Concretion		Purchase Order #: Sr S10348206	Project Name: Plant Hammond	Project #:		DOUTECTED	R D D D D D D D D D D D D D	5 5 2 5 5 Амярце түре Sample түре Date Time Date Time Date Time Date Time	Arte Velaho39 Vela Irro 12			a//h	NT					1 4 action 11/1 and an Income 16 119	KINGOSTON ESTINA MININ		SAMPLER NOVE SAMPLER	SIGNATURE of SAMPLER:	
	pares Orsets Intoninguon. Deny General Press - Cost Combusting Decisi of	tress: 2480 Maner Road	nta, GA 30339	ali jabraham@southernco.com	via: (404)506-7239 Fex	prested Oue Date:		MATRAK	SAMPLE ID Soifsad	One Character per box. Way (A-Z, 0-91, -) Au Ar Sample tds must be unique Tisse	SWC-23								ADDITIONAL COMMENTS				Pagi	e 25 of 1	26
ð ð		Į	Alla	6	1	a Na	L			₩ 44341										μ			-		

•

and tanks do and and an an an and a second second as a second second second second second second second second

-----

( and the second se	Jamp	e Conditio	on Upon Receip		
Pace Anal	<i>vtical</i> Client Name: _	GIA	Power	Project #	
Courier: D Fed E	x 🗌 UPS 🗌 USPS 🗍 Client		I Pace Other	WO#:20	517209
Custody Seal on C	Coler/Box Brogenty			PM: BM	Due Date: 04/16/19
Packing Material			als intact: Jeryes	L CLIENT: GAP	uer-CCR
Thermometer Lise		None None			
Cooler Temperatu		iological Tiss	er Blue None Ie is Frozen: Yes No	Date and Initia	blingprocess has begun s of person examining
Chain of Custody P	resent:		Comments:		
Chain of Custody F	led Out:		/A 1		
Chain of Custody R			/A 2		
Sampler Name & Si			IA 3.	<u> </u>	
Samples Arrived wit	hin Hold Time:		(A   4.		
Short Hold Time A	nalysis (<72hr):		A 5		┝─────┥│
Rush Turn Around	Time Requested:		A D		
Sufficient Volume:					
Correct Containers	Used:			· · · · · · · · · · · · · · · · · · ·	
-Pace Containers	Used:		Δ		
Containers Intact:	1		A 10		
Filtered volume rece	ved for Dissolved tests	Yes INO DAN	A 11		
Sample Labels mate	n COC:		A 12		
-Includes date/tin	e/ID/Analysis Matrix:	$\omega$			
All containers needing p	eservation have been checked.		A 13.		
All containers needing compliance with EPA re	preservation are found to be in -21 commendation.	as ⊡no ⊡n//	A		
exceptions: VOA, coliform	TOC. 0&G. WI-DRO (water)	es UNo	Initial when completed	Lot # of added	
Samples checked for	dechlorination:	es 🗆 No 💭 🕅	14.	procervative	
Headspace in VOA V	fials ( >6mm): □v		15.		
Trip Blank Present:	ΥΩ		16.		
Trip Blank Custody S	eals Present	es 🗆 No 🖵 M1/2	1		
Pace Trip Blank Lot #	(if purchased):				
Client Notification/	esolution:			Field Date Required	
Person Contac	ted:	Date	Time:		
Comments/ Resolu	tion:				
<u></u>					
		-			
Project Manager F	teview:			Date:	
Note: Whenever there it	S a discrepancy affecting North Counting	compliane			
Certification Office ( i.e	out of hold, incorrect preservative, out of	ftemp, incorrect	npies, a copy of this form ( containers)	will be sent to the North	arolina DEHNR



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

April 25, 2019

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

RE: Project: Plant Hammond Pace Project No.: 2617267

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 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.

This report replaces the report issued on 4/18/2019. It has been revised to remove Mercury data per consultant request. No other changes have been made to this report.

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

Sincerely,

Bety Mr Damel

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

Enclosures

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





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

## CERTIFICATIONS

Project: Plant Hammond Pace Project No.: 2617267

## **Atlanta Certification IDs**

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



## SAMPLE SUMMARY

Project: Plant Hammond Pace Project No.: 2617267

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617267001	GWC-5	Water	04/09/19 09:36	04/10/19 14:05
2617267002	GWC-10	Water	04/09/19 11:26	04/10/19 14:05
2617267003	GWC-20	Water	04/09/19 14:16	04/10/19 14:05
2617267004	GWC-18	Water	04/09/19 10:40	04/10/19 14:05
2617267005	GWC-19	Water	04/09/19 12:35	04/10/19 14:05
2617267006	GWC-21	Water	04/09/19 10:37	04/10/19 14:05
2617267007	GWC-22	Water	04/09/19 13:01	04/10/19 14:05



# SAMPLE ANALYTE COUNT

Project: Plant Hammond Pace Project No.: 2617267

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2617267001	GWC-5	EPA 6020B	CSW	17
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2617267002	GWC-10	EPA 6020B	CSW	17
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2617267003	GWC-20	EPA 6020B	CSW	17
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2617267004	GWC-18	EPA 6020B	CSW	17
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2617267005	GWC-19	EPA 6020B	CSW	17
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2617267006	GWC-21	EPA 6020B	CSW	17
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2617267007	GWC-22	EPA 6020B	CSW	17
		SM 2540C	RLC	1
		EPA 300.0	RLC	3



## Project: Plant Hammond

Pace Project No.: 2617267

Sample: GWC-5	Lab ID:	2617267001	Collecte	ed: 04/09/19	9 09:36	Received: 04	/10/19 14:05 Ma	atrix: Water	
<b>-</b>			Report			<b>_</b>			<b>.</b> .
Parameters	Results	Units			DF	Prepared	Analyzed	CAS NO.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: E	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	04/11/19 13:50	04/12/19 14:21	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/11/19 13:50	04/12/19 14:21	7440-38-2	
Barium	0.067	mg/L	0.010	0.00078	1	04/11/19 13:50	04/12/19 14:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/11/19 13:50	04/12/19 14:21	7440-41-7	
Boron	0.048	mg/L	0.040	0.0039	1	04/11/19 13:50	04/12/19 14:21	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/11/19 13:50	04/12/19 14:21	7440-43-9	
Calcium	73.9	mg/L	25.0	0.69	50	04/11/19 13:50	04/12/19 14:27	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.0016	1	04/11/19 13:50	04/12/19 14:21	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/11/19 13:50	04/12/19 14:21	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	04/11/19 13:50	04/12/19 14:21	7440-50-8	
Lead	0.00039J	mg/L	0.0050	0.00027	1	04/11/19 13:50	04/12/19 14:21	7439-92-1	
Nickel	0.00098J	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 14:21	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	04/11/19 13:50	04/12/19 14:21	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 14:21	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	04/11/19 13:50	04/12/19 14:21	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	04/11/19 13:50	04/12/19 14:21	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	04/11/19 13:50	04/12/19 14:21	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	371	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	3.3	mg/L	0.25	0.024	1		04/16/19 03:02	16887-00-6	
Fluoride	0.061J	mg/L	0.30	0.029	1		04/16/19 03:02	16984-48-8	
Sulfate	83.6	ma/L	10.0	0.17	10		04/17/19 17:06	14808-79-8	M1



## Project: Plant Hammond

Pace Project No.: 2617267

Sample: GWC-10	Lab ID:	2617267002	Collecte	ed: 04/09/19	9 11:26	Received: 04	/10/19 14:05 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	thod: E	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	04/11/19 13:50	04/12/19 15:13	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/11/19 13:50	04/12/19 15:13	7440-38-2	
Barium	0.17	mg/L	0.010	0.00078	1	04/11/19 13:50	04/12/19 15:13	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/11/19 13:50	04/12/19 15:13	7440-41-7	
Boron	0.035J	mg/L	0.040	0.0039	1	04/11/19 13:50	04/12/19 15:13	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/11/19 13:50	04/12/19 15:13	7440-43-9	
Calcium	48.8	mg/L	25.0	0.69	50	04/11/19 13:50	04/12/19 15:19	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/11/19 13:50	04/12/19 15:13	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/11/19 13:50	04/12/19 15:13	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	04/11/19 13:50	04/12/19 15:13	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	04/11/19 13:50	04/12/19 15:13	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 15:13	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	04/11/19 13:50	04/12/19 15:13	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 15:13	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	04/11/19 13:50	04/12/19 15:13	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	04/11/19 13:50	04/12/19 15:13	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	04/11/19 13:50	04/12/19 15:13	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	213	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	1.9	mg/L	0.25	0.024	1		04/16/19 04:11	16887-00-6	В
Fluoride	0.067J	mg/L	0.30	0.029	1		04/16/19 04:11	16984-48-8	
Sulfate	21.4	ma/L	1.0	0.017	1		04/16/19 04:11	14808-79-8	M1



## Project: Plant Hammond

Pace Project No.: 2617267

Sample: GWC-20	Lab ID:	2617267003	Collecte	ed: 04/09/19	9 14:16	Received: 04/	/10/19 14:05 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: E	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	04/11/19 13:50	04/12/19 15:24	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/11/19 13:50	04/12/19 15:24	7440-38-2	
Barium	0.13	mg/L	0.010	0.00078	1	04/11/19 13:50	04/12/19 15:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/11/19 13:50	04/12/19 15:24	7440-41-7	
Boron	0.011J	mg/L	0.040	0.0039	1	04/11/19 13:50	04/12/19 15:24	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/11/19 13:50	04/12/19 15:24	7440-43-9	
Calcium	57.1	mg/L	25.0	0.69	50	04/11/19 13:50	04/12/19 15:30	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/11/19 13:50	04/12/19 15:24	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/11/19 13:50	04/12/19 15:24	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	04/11/19 13:50	04/12/19 15:24	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	04/11/19 13:50	04/12/19 15:24	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 15:24	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	04/11/19 13:50	04/12/19 15:24	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 15:24	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	04/11/19 13:50	04/12/19 15:24	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	04/11/19 13:50	04/12/19 15:24	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	04/11/19 13:50	04/12/19 15:24	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	267	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	1.8	mg/L	0.25	0.024	1		04/16/19 04:34	16887-00-6	В
Fluoride	0.056J	mg/L	0.30	0.029	1		04/16/19 04:34	16984-48-8	
Sulfate	50.3	ma/L	1.0	0.017	1		04/16/19 04:34	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617267

Sample: GWC-18	Lab ID:	2617267004	Collecte	ed: 04/09/19	9 10:40	Received: 04/	/10/19 14:05 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: E	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	04/11/19 13:50	04/12/19 15:36	7440-36-0	
Arsenic	0.00063J	mg/L	0.0050	0.00057	1	04/11/19 13:50	04/12/19 15:36	7440-38-2	
Barium	0.081	mg/L	0.010	0.00078	1	04/11/19 13:50	04/12/19 15:36	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/11/19 13:50	04/12/19 15:36	7440-41-7	
Boron	0.12	mg/L	0.040	0.0039	1	04/11/19 13:50	04/12/19 15:36	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/11/19 13:50	04/12/19 15:36	7440-43-9	
Calcium	41.4	mg/L	25.0	0.69	50	04/11/19 13:50	04/12/19 15:41	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/11/19 13:50	04/12/19 15:36	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/11/19 13:50	04/12/19 15:36	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	04/11/19 13:50	04/12/19 15:36	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	04/11/19 13:50	04/12/19 15:36	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 15:36	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	04/11/19 13:50	04/12/19 15:36	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 15:36	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	04/11/19 13:50	04/12/19 15:36	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	04/11/19 13:50	04/12/19 15:36	7440-62-2	
Zinc	0.0037J	mg/L	0.010	0.0021	1	04/11/19 13:50	04/12/19 15:36	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	212	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	1.6	mg/L	0.25	0.024	1		04/16/19 04:56	16887-00-6	В
Fluoride	0.10J	mg/L	0.30	0.029	1		04/16/19 04:56	16984-48-8	
Sulfate	11.3	ma/l	1.0	0.017	1		04/16/19 04:56	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617267

Sample: GWC-19	Lab ID:	2617267005	Collecte	ed: 04/09/19	9 12:35	Received: 04/	/10/19 14:05 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: E	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	04/11/19 13:50	04/12/19 15:47	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/11/19 13:50	04/12/19 15:47	7440-38-2	
Barium	0.15	mg/L	0.010	0.00078	1	04/11/19 13:50	04/12/19 15:47	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/11/19 13:50	04/12/19 15:47	7440-41-7	
Boron	0.17	mg/L	0.040	0.0039	1	04/11/19 13:50	04/12/19 15:47	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/11/19 13:50	04/12/19 15:47	7440-43-9	
Calcium	45.8	mg/L	25.0	0.69	50	04/11/19 13:50	04/12/19 15:53	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/11/19 13:50	04/12/19 15:47	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/11/19 13:50	04/12/19 15:47	7440-48-4	
Copper	0.0014J	mg/L	0.025	0.0013	1	04/11/19 13:50	04/12/19 15:47	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	04/11/19 13:50	04/12/19 15:47	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 15:47	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	04/11/19 13:50	04/12/19 15:47	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 15:47	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	04/11/19 13:50	04/12/19 15:47	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	04/11/19 13:50	04/12/19 15:47	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	04/11/19 13:50	04/12/19 15:47	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	253	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	1.9	mg/L	0.25	0.024	1		04/16/19 05:19	16887-00-6	В
Fluoride	0.10J	mg/L	0.30	0.029	1		04/16/19 05:19	16984-48-8	
Sulfate	16.7	ma/L	1.0	0.017	1		04/16/19 05:19	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617267

Sample: GWC-21	Lab ID:	2617267006	Collecte	ed: 04/09/19	9 10:37	Received: 04/	/10/19 14:05 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: E	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	04/11/19 13:50	04/12/19 15:59	7440-36-0	
Arsenic	0.0018J	mg/L	0.0050	0.00057	1	04/11/19 13:50	04/12/19 15:59	7440-38-2	
Barium	0.050	mg/L	0.010	0.00078	1	04/11/19 13:50	04/12/19 15:59	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/11/19 13:50	04/12/19 15:59	7440-41-7	
Boron	0.014J	mg/L	0.040	0.0039	1	04/11/19 13:50	04/12/19 15:59	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/11/19 13:50	04/12/19 15:59	7440-43-9	
Calcium	35.4	mg/L	25.0	0.69	50	04/11/19 13:50	04/12/19 16:04	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/11/19 13:50	04/12/19 15:59	7440-47-3	
Cobalt	0.0023J	mg/L	0.010	0.00052	1	04/11/19 13:50	04/12/19 15:59	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	04/11/19 13:50	04/12/19 15:59	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	04/11/19 13:50	04/12/19 15:59	7439-92-1	
Nickel	0.0048J	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 15:59	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	04/11/19 13:50	04/12/19 15:59	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 15:59	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	04/11/19 13:50	04/12/19 15:59	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	04/11/19 13:50	04/12/19 15:59	7440-62-2	
Zinc	0.0041J	mg/L	0.010	0.0021	1	04/11/19 13:50	04/12/19 15:59	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	167	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	2.6	mg/L	0.25	0.024	1		04/16/19 05:42	16887-00-6	В
Fluoride	0.063J	mg/L	0.30	0.029	1		04/16/19 05:42	16984-48-8	
Sulfate	19.9	ma/L	1.0	0.017	1		04/16/19 05:42	14808-79-8	



## Project: Plant Hammond

Pace Project No.: 2617267

Sample: GWC-22	Lab ID:	2617267007	Collecte	ed: 04/09/19	9 13:01	Received: 04	/10/19 14:05 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: E	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	04/11/19 13:50	04/12/19 16:25	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/11/19 13:50	04/12/19 16:25	7440-38-2	
Barium	0.094	mg/L	0.010	0.00078	1	04/11/19 13:50	04/12/19 16:25	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/11/19 13:50	04/12/19 16:25	7440-41-7	
Boron	0.063	mg/L	0.040	0.0039	1	04/11/19 13:50	04/12/19 16:25	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/11/19 13:50	04/12/19 16:25	7440-43-9	
Calcium	47.3	mg/L	25.0	0.69	50	04/11/19 13:50	04/12/19 16:30	7440-70-2	
Chromium	0.0023J	mg/L	0.010	0.0016	1	04/11/19 13:50	04/12/19 16:25	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/11/19 13:50	04/12/19 16:25	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	04/11/19 13:50	04/12/19 16:25	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	04/11/19 13:50	04/12/19 16:25	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 16:25	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	04/11/19 13:50	04/12/19 16:25	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 16:25	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	04/11/19 13:50	04/12/19 16:25	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	04/11/19 13:50	04/12/19 16:25	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	04/11/19 13:50	04/12/19 16:25	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	222	mg/L	25.0	10.0	1		04/15/19 21:22		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	1.7	mg/L	0.25	0.024	1		04/16/19 06:05	16887-00-6	В
Fluoride	0.063J	mg/L	0.30	0.029	1		04/16/19 06:05	16984-48-8	
Sulfate	11.0	ma/L	1.0	0.017	1		04/16/19 06:05	14808-79-8	



Project: Plant Hammond

Pace Project No.: 2617267

QC Batch:	26237
QC Batch Method:	EPA 3005A

Analysis Method: Analysis Description: EPA 6020B

6020B MET

Associated Lab Samples: 2617267001, 2617267002, 2617267003, 2617267004, 2617267005, 2617267006, 2617267007

METHOD BLANK: 118407	Matrix: Water
Associated Lab Samples:	2617267001, 2617267002, 2617267003, 2617267004, 2617267005, 2617267006, 2617267007

		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/12/19 14:10	
Arsenic	mg/L	ND	0.0050	0.00057	04/12/19 14:10	
Barium	mg/L	ND	0.010	0.00078	04/12/19 14:10	
Beryllium	mg/L	ND	0.0030	0.000050	04/12/19 14:10	
Boron	mg/L	ND	0.040	0.0039	04/12/19 14:10	
Cadmium	mg/L	ND	0.0010	0.000093	04/12/19 14:10	
Calcium	mg/L	ND	0.50	0.014	04/12/19 14:10	
Chromium	mg/L	ND	0.010	0.0016	04/12/19 14:10	
Cobalt	mg/L	ND	0.010	0.00052	04/12/19 14:10	
Copper	mg/L	ND	0.025	0.0013	04/12/19 14:10	
Lead	mg/L	ND	0.0050	0.00027	04/12/19 14:10	
Nickel	mg/L	ND	0.010	0.00095	04/12/19 14:10	
Selenium	mg/L	ND	0.010	0.0014	04/12/19 14:10	
Silver	mg/L	ND	0.010	0.00095	04/12/19 14:10	
Thallium	mg/L	ND	0.0010	0.00014	04/12/19 14:10	
Vanadium	mg/L	ND	0.010	0.0019	04/12/19 14:10	
Zinc	mg/L	ND	0.010	0.0021	04/12/19 14:10	

## LABORATORY CONTROL SAMPLE: 118408

_		Spike	LCS	LCS	% Rec	Qualifian	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Antimony	mg/L	0.1	0.099	99	80-120		
Arsenic	mg/L	0.1	0.098	98	80-120		
Barium	mg/L	0.1	0.097	97	80-120		
Beryllium	mg/L	0.1	0.10	103	80-120		
Boron	mg/L	1	1.0	103	80-120		
Cadmium	mg/L	0.1	0.097	97	80-120		
Calcium	mg/L	1	0.96	96	80-120		
Chromium	mg/L	0.1	0.10	102	80-120		
Cobalt	mg/L	0.1	0.10	100	80-120		
Copper	mg/L	0.1	0.10	100	80-120		
Lead	mg/L	0.1	0.10	100	80-120		
Nickel	mg/L	0.1	0.099	99	80-120		
Selenium	mg/L	0.1	0.098	98	80-120		
Silver	mg/L	0.1	0.099	99	80-120		
Thallium	mg/L	0.1	0.098	98	80-120		
Vanadium	mg/L	0.1	0.10	100	80-120		
Zinc	mg/L	0.1	0.10	100	80-120		

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



Project:	Plant Hammond
Pace Project No.:	2617267

MATRIX SPIKE & MATRIX SPIK	E DUPLIC	CATE: 118409	9		118410							
			MS	MSD								
		2617267001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	103	103	75-125	0	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	20	
Barium	mg/L	0.067	0.1	0.1	0.17	0.17	103	99	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.094	0.092	94	92	75-125	2	20	
Boron	mg/L	0.048	1	1	1.0	0.97	95	92	75-125	3	20	
Cadmium	mg/L	ND	0.1	0.1	0.097	0.099	97	99	75-125	1	20	
Calcium	mg/L	73.9	1	1	74.4	72.8	50	-109	75-125	2	20	M6
Chromium	mg/L	ND	0.1	0.1	0.099	0.099	99	98	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	1	20	
Copper	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Lead	mg/L	0.00039J	0.1	0.1	0.097	0.097	96	96	75-125	0	20	
Nickel	mg/L	0.00098J	0.1	0.1	0.099	0.098	98	97	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.095	0.099	95	99	75-125	5	20	
Silver	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Thallium	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	0	20	
Vanadium	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20	
Zinc	mg/L	ND	0.1	0.1	0.10	0.10	99	100	75-125	1	20	

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



Project:	Plant Hammond							
Pace Project No.:	2617267							
QC Batch:	26275		Analysis M	lethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total D	issolved Solids	5	
Associated Lab Sar	mples: 26172670	01, 2617267002,	2617267003, 26	17267004, 261	7267005, 2617	267006, 26172	267007	
LABORATORY CO	NTROL SAMPLE:	118616						
			Spike	LCS	LCS	% Rec		
Para	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Sol	ids	mg/L	400	381	95	84-108		
SAMPLE DUPLICA	TE: 118618							
_			2617267003	Dup		Max		
Para	meter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	26	7 2	252	6	10	
SAMPLE DUPLICA	TE: 118698							
			2617209006	Dup		Max		
Para	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	26	4 2	245	7	10	

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



OC Batch:	26352		Analysis	s Method	F	PA 300.0							
QC Batch Method:	EPA 300.0		Analysis	s Descrip	tion: 30	0.0 IC Anio	ns						
Associated Lab Sa	mples: 2617267	001, 2617267002, 2	617267003,	2617267	004, 261726	67005, 2617	267006	6, 26172	67007				
METHOD BI ANK <sup>.</sup>	119015		M	atrix <sup>.</sup> Wa	ter								
Associated Lab Sa	mples: 2617267	01 2617267002 2	0617267003	2617267	004 261726	37005 2617	267006	5 26172	67007				
	2011201	501, 2017207002, 2	Blank	2011201 R	eportina	57 000, 2017	201000	5, 20172	01001				
Para	meter	Units	Result		Limit	MDL		Analy	zed	Qua	alifiers		
Chloride		mg/L	(	0.31	0.25	0.	.024	04/16/19	02:16				
Fluoride		mg/L		ND	0.30	0	.029	04/16/19	02:16				
Sulfate		mg/L		ND	1.0	0	.017	04/16/19	02:16				
LABORATORY CO	NTROL SAMPLE:	119016											
			Spike	LCS	6	LCS	%	Rec					
Para	meter	Units	Conc.	Resu	ult (	% Rec	Lir	nits	Qu	alifiers			
Chloride		mg/L	10		10.1	101		90-110					
Fluoride		mg/L	10		9.3	93		90-110					
Sulfate		ma/l	10		107	107		00 110					
Cullato		ing/L	10		10.7	107		90-110					
MATRIX SPIKE & I	MATRIX SPIKE DU	PLICATE: 11901	7		119018	107		90-110					
MATRIX SPIKE & I	MATRIX SPIKE DU	PLICATE: 11901	7 MS	MSD	119018	107		90-110					
MATRIX SPIKE & I	MATRIX SPIKE DU	PLICATE: 11901 2617267001	7 MS Spike	MSD Spike	119018 MS	MSD	MS	90-110 	SD	% Rec		Max	0
MATRIX SPIKE & I Paramet	MATRIX SPIKE DU er Ur	PLICATE: 11901 2617267001 its Result	7 MS Spike Conc.	MSD Spike Conc.	119018 MS Result	MSD Result	MS % Rec	90-110 	SD Rec	% Rec Limits	RPD	Max RPD	Qua
MATRIX SPIKE & I Paramet Chloride	MATRIX SPIKE DU er Ur mg	PLICATE: 11901 2617267001 hits Result g/L 3.3	7 MS Spike Conc. 10	MSD Spike Conc.	119018 MS Result 13.1	MSD Result 13.0	MS % Red	M: c % I 98	SD Rec 97	% Rec Limits 90-110	RPD 1	Max RPD 15	Qua
MATRIX SPIKE & I Paramet Chloride Fluoride	MATRIX SPIKE DU er Ur mg mg	PLICATE: 11901 2617267001 hits Result g/L 3.3 g/L 0.061J g/L 82.6	7 MS Spike Conc. 10 10	MSD Spike Conc. 10 10	119018 MS Result 13.1 9.2	MSD Result 13.0 9.1	MS % Red	90-110 Mt 2 % I 98 91 21	SD Rec 97 91	% Rec Limits 90-110 90-110	RPD 1 1	Max RPD 15 15	Qua
MATRIX SPIKE & I Paramet Chloride Fluoride Sulfate	MATRIX SPIKE DU er Ur mş mş mş	PLICATE: 11901 2617267001 hits Result g/L 3.3 g/L 0.061J g/L 83.6	7 MS Spike Conc. 10 10 10	MSD Spike Conc. 10 10 10	119018 MS Result 13.1 9.2 81.4	MSD Result 13.0 9.1 81.5	MS % Red	M: c % I 98 91 21	SD Rec 97 91 -21	% Rec Limits 90-110 90-110 90-110	RPD 1 1 0	Max RPD 15 15 15	Qua M1
MATRIX SPIKE & I Paramet Chloride Fluoride Sulfate MATRIX SPIKE SA	MATRIX SPIKE DU er Ur mg mg mg MPLE:	PLICATE: 11901 2617267001 hits Result g/L 3.3 g/L 0.061J g/L 83.6 119019	7 MS Spike Conc. 10 10 10	MSD Spike Conc. 10 10 10	119018 MS Result 13.1 9.2 81.4	MSD Result 13.0 9.1 81.5	MS % Rec	M: <u>c</u> % I 98 91 21	SD Rec 97 91 -21	% Rec Limits 90-110 90-110 90-110	RPD 1 1 0	Max RPD 15 15 15	Qua M1
MATRIX SPIKE & I Paramet Chloride Fluoride Sulfate MATRIX SPIKE SA Para	MATRIX SPIKE DU er Ur mg mg mg MPLE: meter	PLICATE: 11901 2617267001 hits Result y/L 3.3 y/L 0.061J y/L 83.6 119019 Units	7 MS Spike Conc. 10 10 10 10 2617267 Resu	MSD Spike Conc. 10 10 10 10	119018 MS Result 13.1 9.2 81.4 Spike Conc.	MSD Result 13.0 9.1 81.5 MS Result	MS % Rec	M: <u>c % F</u> 98 91 21 MS % Rec	SD Rec 97 91 -21	% Rec Limits 90-110 90-110 90-110 % Rec Limits	RPD 1 1 0	Max RPD 15 15 15 25	Qua M1
MATRIX SPIKE & I Paramet Chloride Fluoride Sulfate MATRIX SPIKE SA Para Chloride	MATRIX SPIKE DU er Ur mg mg MPLE: meter	PLICATE: 11901 2617267001 its Result y/L 3.3 y/L 0.061J y/L 83.6 119019 Units mg/L	7 MS Spike Conc. 10 10 10 10 2617267 Resu	MSD Spike Conc. 10 10 10 10 7002 It 1.9	119018 MS Result 13.1 9.2 81.4 Spike Conc. 10	MSD Result 13.0 9.1 81.5 MS Result	MS % Red - -	M: <u>c % I</u> 98 91 21 MS % Rec	SD Rec 97 91 -21	% Rec Limits 90-110 90-110 90-110 % Rec Limits 90- <sup>-</sup>	RPD 1 1 0	Max RPD 15 15 15 Qualit	Qua M1 fiers
MATRIX SPIKE & I Paramet Chloride Fluoride Sulfate MATRIX SPIKE SA Para Chloride Fluoride Fluoride	MATRIX SPIKE DU er Ur mg mg MPLE: meter	PLICATE: 11901 2617267001 its Result g/L 3.3 g/L 0.061J g/L 83.6 119019 Units mg/L mg/L	7 MS Spike Conc. 10 10 10 10 2617267 Resu	MSD Spike Conc. 10 10 10 10 7002 It 1.9 0.067J	119018 MS Result 13.1 9.2 81.4 Spike Conc. 10 10	MSD Result 13.0 9.1 81.5 MS Result 11 9	MS % Red - - .5 .1	M: <u>6</u> % I 98 91 21 MS % Rec	SD Rec 97 91 -21 96 90	% Rec Limits 90-110 90-110 90-110 % Rec Limits 90- <sup>-1</sup> 90- <sup>-1</sup>	RPD 1 1 0	Max RPD 15 15 15 25	Qua M1 fiers

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

## **REPORT OF LABORATORY ANALYSIS**

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


#### QUALIFIERS

Project: Plant Hammond Pace Project No.: 2617267

#### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

- B Analyte was detected in the associated method blank.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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



# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	Plant Hammond
Pace Project No .:	2617267

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617267001	GWC-5	EPA 3005A	26237	EPA 6020B	26241
2617267002	GWC-10	EPA 3005A	26237	EPA 6020B	26241
2617267003	GWC-20	EPA 3005A	26237	EPA 6020B	26241
2617267004	GWC-18	EPA 3005A	26237	EPA 6020B	26241
2617267005	GWC-19	EPA 3005A	26237	EPA 6020B	26241
2617267006	GWC-21	EPA 3005A	26237	EPA 6020B	26241
2617267007	GWC-22	EPA 3005A	26237	EPA 6020B	26241
2617267001	GWC-5	SM 2540C	26275		
2617267002	GWC-10	SM 2540C	26275		
2617267003	GWC-20	SM 2540C	26275		
2617267004	GWC-18	SM 2540C	26275		
2617267005	GWC-19	SM 2540C	26275		
2617267006	GWC-21	SM 2540C	26275		
2617267007	GWC-22	SM 2540C	26275		
2617267001	GWC-5	EPA 300.0	26352		
2617267002	GWC-10	EPA 300.0	26352		
2617267003	GWC-20	EPA 300.0	26352		
2617267004	GWC-18	EPA 300.0	26352		
2617267005	GWC-19	EPA 300.0	26352		
2617267006	GWC-21	EPA 300.0	26352		
2617267007	GWC-22	EPA 300.0	26352		

Pace Analytical

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

			and the second		el@oacelabs.com	GA		(VI .qqA .8 0.80 .VI .qqu (I) (0.80 .8 1 1 2 2 3 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3	Metals (App. III, A Metals (App. III), A Metals (App. III, A Metals (App. III), A Metals (App. III, A Metals (App. III), A Meta			- <u>/ / +</u>						riversition and a solution and a solution of a solution	n / Greeninger 4/9/19 1535	Perce, 4110119 1040	man 4/10/10 1405 2.4 2 2 4		201 201
Section C Levelso I Commenter	Attention: scsinvoices@southernco.cc	Company Name:	Address:	Pace Quote:	Pace Project Manager. belsv.mcdani	Pace Profile #: 327 (AP) or 328 (Huff)	ECTED z Preservatives	is E D	A Meihenoi Meihenoi HCI Unpreserved HCO4 HCO3 HCO4 HCO3 HCO3 HCO3 HCO3 HCO3 HCO3 HCO4 HCO3 HCO3 HCO3 HCO3 HCO3 HCO3 HCO3 HCO3	1 1 C 2 8 9:36 60400	Dytog 11, 25 11 22 11	64/69 NY16 16 3 2 1		 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				<u>arts kants kines his interna</u> a	when OH/OCVIS 1535 Nergen 11/make	regard y holig loyd for 1	Mall	a nue a designatinge	VT Namo of SAMPLER: A. L.
Section B Descripted Basicon Information	iduals [Report To: Joju Abraham	Copy To: Lauren Petty, Geosyntec		Purchase Order #: SCS10348608	Project Name: Plant Hammond	Project #:	MATRIX CODE CODE	Ditritiong Water OW Water Wit Water Water Wit Product To Water Water Water Product Sold Sold Sold Sold Sold Sold Sold Sold Sold	A Weat Weat Weat Weat Weat Weat Weat Weat	IE: 6 POMOR 4:31	WT 6 04609 11:21	wrt 6 24/69 14:11							Roinn Grat Wiltor George	, Cobalt, Wolkin Muhun 16	Zhr/,		- HRIA
tion A wired Client Information:	npany: Georgia Power - Coal Combustion Resid	ress: 2480 Maner Road	ita, GA 30339	li jabraham@southernco.com	e: (404)506-7239 Fax	ested Due Date: Standard		SAMPLE ID	One Character par box. (A.Z, 0-9 (, -) Semple Ids must be unique	RVC-S	BGWC-10	6wc - 20		20121	(Mar Cal				40 (1): Allimony, Acerca	eryllinen, Cedrium, Chronium,	Nec. Thelling, Vuedium,		

Å

Pace Analytical

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

1

د <u>،</u> د									(N/A) OU	iroirt) (subize)							2617267	Due Date: 04/17/19	3APouer-CCR		14 1 5 46	10H0	191405237 2 2 2		(K/N) Sealed (K/N) Sealed (Coster (K/N) LC LEWb III LEWb III	
Section C	Invoice Information:	Attention: scsinvoices@southernco.com Comman Neme:	Lonpary Name:			rave Frojeti markajeti Delsy, modaniej@pacejabs.com, Dare Dmilia # 327 /AD/ 22 22 /L.46	High Antwine set bat and interior in the set of the set	Descentations	1 COLLECTION	SAMPLE TEMP A Motals (App. III, A Motals (App. III), A Motals (App. III, A Motals (App. III), A M								PN: BM	CLIENT: (		19 15:46 Mole a Murber Kreisynder 4/6	10 1040 , , , Parce 410	HA alman HIN		ER: Talton Ander 2001 DATE Signed: 4/9	
Section B	Kequired Project Information:	report to: Joju Abraham	CODY 10. Lauren Petty, Gaosyntec	B		Project waite. Plant Haminond	the second se	(JMC (74) (74) (74) (74) (74) (74) (74) (74)		а 2 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	121 6 419/10: 00 10 10 10 10 10 10	25:21 P/10/11 21:11/10/10/10 TW			<u> </u>					The second s	Valpon Anderson (ceo) 4/9/	Mouria Montan Caseyater 4/10/1		SAUPLER NAME (ND SIGN	PRINT Name of SAMPLE SIGNATURE of SAMPLE	
Section A	Kequired Cilcrit Information:	Company. Georgia Power - Coal Combustion Residuals Address: 2460 Maccor Band	Autorso. 2460 Marter Koad		Editate	Recuested Due Date: 5.4-0 A A C A C A				Chie Character Per box. Wea (A-Z, 0-9 /, -) Kar Sample Ids must be unique Taxee	(10 C- 12	0 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		9										Pa	ge 19 of	2

Pace Analytical

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

Page: 3 of 3					Scelabs.com, by a second s	A Prequested Analysis is the read (YAN) - X		(V) .q (03.0 ,V (0)	I, 1, qqA, 3, 11, , qqA, 1, 11, qqA, 1, 11, 12, 12, 12, 12, 12, 12, 12, 12,	Metals (App. I Metals (App. I Motals (App TDS, CI, F, Radium 226 Radium 226						W0#:2617267	PM: BM Due Date: 04/17/19	CLIENT: GRPower-CCR		10 To	w 4101914052.38 2 2	on on other states and	24HE Grunnart, 1 2 12	
Section C trivoice Information:	Attention: scsinvoices@southermoo.com	nec Company vane. Arthese	Accession of the second of the	Dave Derivet Manner 1. 1. 1. 1.	Face Frofile #: 327 (AP) or 328 (Huff)					Metals (400 Other Methenol Methenol HISSO4 H	028 4/6/10 10 37 14 2 1 1 1 -	231 4/4 14 1301 m 2 1 1 1 -			114/1/14/11					a lacam 4/10/14 1040 5 1 Pa	Mar Mar	ureizer vanig din sjon tute	PRINT Name of SAMPLER: Nocia Muxus	SIGNATURE OF SAMPLER: NOULing Murphus
Section B Required Project Information:	Residuals Report I o: Joju Abraham From To: 10,000 Both Come	CONT IN. LEUREN FERY, GEOSYR	Burchase Onlos #		Project #:		(Tho i of (Phoi	MATRIX CODE Divides Water CODE Water WW With Codes Water WW With Codes Water Water WW	Mound P C C C C C C C C C C C C C C C C C C	а	WGG HAIR	we a unit in							A REMONSION AF	Merica Mura				
Section A Section A Required Client Information:	Company: Georgia Power - Coal Combustion	Aurolo CA 20320	Emol: Libration Second		Requested Due Date: State Ard At				SAMPLE ID Drie Character per box.	(A-Z, 0-91,) Sample tds must be unique TE	GWC 21	GNC-22		<b>1</b>			-0/-					Pag	ge 20	) of 2

. . . .

	Sam	ole Conditio	n Upon Receipt		1	
and the second		0	<u> </u>	i		
/Pace Analy	Client Name:	GA	Power_	Project #		
1						
Courier: 🔲 Fed E Tracking #:	x 🔲 UPS 🗌 USPS 🔲 Client		Pace Other	- WO#:2	617267	
Custody Seal on C	ooler/Box Present:	no Sea	s intact: ves	F PM: BM	Due Date: 04/17/19	
				CLIENT: GAP	wer-CCR	
Packing Material:		ags 1 None		┾ │	•	
Thermometer Used		ype of Ice: W	Blue None	Samples on ice, co	dling process has begun	
Cooler Temperatur Temp should be above	re <u>2.5</u> freezing to 6°C	Biological Tissu	e is Frozen: Yes No Comments:	contents:	10/19 MK	
Chain of Custody P	esent:	ZNés 🗆 No 🗆 N/	A 1.			
Chain of Custody Fi	led Out:		A 2.			
Chain of Custody R	elinquished:		A 3.			
Sampler Name & Si	anature on COC:		A 4			
Samples Agrived with	bin Hold Time:				······	
Samples Arrived with			<u>^ 5.</u>			
Short Hold Time A	nalysis ( 2nr):</td <td></td> <td></td> <td></td> <td></td> <td></td>					
Rush Turn Around	Time Requested:	Lives Lano Lini	<u>A 7.</u>			
Sufficient Volume:	) 		A 8.			
Correct Containers	Used: -	Elves DNo DN	A 9.			
-Pace Container	s Used:		A			
Containers Intact:		Dies DNo DN	A 10.			
Filtered volume rec	eived for Dissolved tests	🗆 Yes 🗆 No 📮 🖬	<b>≭ 1</b> 1.			
Sample Labels mat	ر h COC:		A 12.			
-Includes date/til	ne/ID/Analysis Matrix:	$\omega$				
All containers needing	reservation have been checked.		/A 13.			
All containers needing	preservation are found to be in					
compliance with EPA	recommendation.	CIYes LINO LIN	/A			
excentions: VOA, colifor	m. TOC. O&G. WI-DBO (water)		Initial when completed	Lot # of added		
Semples sheeked f						
			6 14. Dar			
Headspace in VOA	viais ( >6mm):		/A [15.			
Trip Blank Present:			/A 16.			
Trip Blank Custody	Seals Present	Tes ONO -BN	/A	1		
Pace Trip Blank Lo	# (if purchased):					
Client Notification	Resolution:			Field Data Require	d? Y / N	
Person Cont	acted:	Dat	e/Time:			
Comments/ Reso	lution:					
<u>.</u>						
Duciant Manager	• Paylow			Data		
Project Manage					<u> </u>	

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

May 01, 2019

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

RE: Project: Plant Hammond Pace Project No.: 2617148

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 08, 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.

This revised report replaces the one issued on 4/16/2019. The report has been revised to correct metals units per consultant request. No other changes have been made to this report.

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

Sincerely,

Bety Mr Damel

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

Enclosures

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





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

#### CERTIFICATIONS

Project: Plant Hammond Pace Project No.: 2617148

#### **Atlanta Certification IDs**

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

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

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



# SAMPLE SUMMARY

Project: Plant Hammond Pace Project No.: 2617148

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617148001	 FB-01	Water	04/05/19 08:50	04/08/19 15:30



# SAMPLE ANALYTE COUNT

Project:Plant HammondPace Project No.:2617148

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617148001	FB-01	EPA 6020B	SER	19	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA



# ANALYTICAL RESULTS

#### Project: Plant Hammond

Pace Project No.: 2617148

Sample: FB-01	Lab ID:	2617148001	Collecte	ed: 04/05/19	9 08:50	Received: 04/	/08/19 15:30 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: El	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/16/19 07:51	04/16/19 18:55	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.000060	1	04/16/19 07:51	04/16/19 18:55	7440-38-2	
Barium	0.000078J	mg/L	0.010	0.000060	1	04/16/19 07:51	04/16/19 18:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/16/19 07:51	04/16/19 18:55	7440-41-7	
Boron	ND	mg/L	0.10	0.0026	1	04/16/19 07:51	04/16/19 18:55	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/16/19 07:51	04/16/19 18:55	7440-43-9	
Calcium	0.024J	mg/L	0.50	0.021	1	04/16/19 07:51	04/16/19 18:55	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/16/19 07:51	04/16/19 18:55	7440-47-3	
Cobalt	ND	mg/L	0.010	0.000050	1	04/16/19 07:51	04/16/19 18:55	7440-48-4	
Copper	ND	mg/L	0.025	0.00023	1	04/16/19 07:51	04/16/19 18:55	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/16/19 07:51	04/16/19 18:55	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/16/19 07:51	04/16/19 18:55	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00010	1	04/16/19 07:51	04/16/19 18:55	7439-98-7	
Nickel	ND	mg/L	0.010	0.00011	1	04/16/19 07:51	04/16/19 18:55	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/16/19 07:51	04/16/19 18:55	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/16/19 07:51	04/16/19 18:55	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/16/19 07:51	04/16/19 18:55	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/16/19 07:51	04/16/19 18:55	7440-62-2	
Zinc	0.017	mg/L	0.010	0.0011	1	04/16/19 07:51	04/16/19 18:55	7440-66-6	C0
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: El	PA 7470A			
Mercury	ND	mg/L	0.00020	0.00010	1	04/11/19 21:25	04/15/19 18:37	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	ND	mg/L	25.0	10.0	1		04/11/19 20:53		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	0.11J	mg/L	0.25	0.024	1		04/10/19 22:29	16887-00-6	В
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 22:29	16984-48-8	
Sulfate	0.069J	mg/L	1.0	0.017	1		04/10/19 22:29	14808-79-8	



Project:	Plant Hammond											
Pace Project No.:	2617148											
QC Batch:	468895		Analysi	s Method:	E	EPA 7470A						
QC Batch Method:	EPA 7470A		Analysi	s Descript	tion: 7	7470 Mercury	,					
Associated Lab Sar	nples: 2617148	001										
METHOD BLANK:	2546716		N	latrix: Wat	ter							
Associated Lab Sar	nples: 2617148	001										
			Blank	R	eporting							
Parar	neter	Units	Result		Limit	MDL		Analyzed	Qua	alifiers		
Mercury		mg/L		ND	0.00020	0.00	0010 04/	15/19 18:06	6			
LABORATORY CO	NTROL SAMPLE:	2546717										
Parar	neter	Units	Spike Conc.	LCS Resu	S Ilt	LCS % Rec	% Red Limits	c G QI	alifiers			
Mercury		mg/L	0.0025	0	.0021	83	80	)-120		-		
MATRIX SPIKE & N	IATRIX SPIKE DU	PLICATE: 25467	18		2546719	1						
			MS	MSD								
_		92424398001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	er Ur	nits Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	m	g/L ND	0.0025	0.0025	0.0019	0.0019	77	77	75-125	0	25	

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



Project: Plant Hammond

Pace Project No.: 2617148

Nickel

Silver

Zinc

Selenium

Thallium

Vanadium

Pace Project No 2617 148						
QC Batch: 469500		Analysis Meth	nod: E	PA 6020B		
QC Batch Method: EPA 3010A		Analysis Dese	cription: 6	020 MET		
Associated Lab Samples: 2617148001						
METHOD BLANK: 2549697		Matrix:	Water			
Associated Lab Samples: 2617148001						
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00011	04/16/19 18:48	
Arsenic	mg/L	ND	0.0050	0.000060	04/16/19 18:48	
Barium	mg/L	ND	0.010	0.000060	04/16/19 18:48	
Beryllium	mg/L	ND	0.0030	0.000050	04/16/19 18:48	
Boron	mg/L	ND	0.10	0.0026	04/16/19 18:48	
Cadmium	mg/L	ND	0.0010	0.000070	04/16/19 18:48	
Calcium	mg/L	ND	0.50	0.021	04/16/19 18:48	
Chromium	mg/L	ND	0.010	0.00042	04/16/19 18:48	
Cobalt	mg/L	ND	0.010	0.000050	04/16/19 18:48	
Copper	mg/L	ND	0.025	0.00023	04/16/19 18:48	
Lead	mg/L	ND	0.0050	0.000050	04/16/19 18:48	
Lithium	mg/L	ND	0.050	0.00042	04/16/19 18:48	
Molybdenum	mg/L	ND	0.010	0.00010	04/16/19 18:48	

ND

ND

ND

ND

ND

ND

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

0.010

0.010

0.010

0.010

0.010

0.0010

0.00011 04/16/19 18:48

0.000080 04/16/19 18:48

0.000050 04/16/19 18:48

0.000060 04/16/19 18:48

0.00012 04/16/19 18:48

0.0011 04/16/19 18:48

#### LABORATORY CONTROL SAMPLE: 2549698

_		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.098	98	80-120	
Arsenic	mg/L	0.01	0.0096	96	80-120	
Barium	mg/L	0.05	0.049	98	80-120	
Beryllium	mg/L	0.01	0.0096	96	80-120	
Boron	mg/L	0.05	0.048J	95	80-120	
Cadmium	mg/L	0.01	0.0099	99	80-120	
Calcium	mg/L	0.62	0.64	103	80-120	
Chromium	mg/L	0.05	0.048	97	80-120	
Cobalt	mg/L	0.01	0.0098J	98	80-120	
Copper	mg/L	0.05	0.049	98	80-120	
Lead	mg/L	0.05	0.050	99	80-120	
Lithium	mg/L	0.05	0.049J	98	80-120	
Molybdenum	mg/L	0.05	0.049	98	80-120	
Nickel	mg/L	0.05	0.049	97	80-120	
Selenium	mg/L	0.05	0.050	100	80-120	
Silver	mg/L	0.025	0.025	99	80-120	
Thallium	mg/L	0.01	0.010	100	80-120	

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



Project:	Plant Hammond
Pace Project No .:	2617148

LABORATORY CONTROL SA	MPLE: 25	549698										
			Spike	LCS	5	LCS	% Rec	;				
Parameter		Units	Conc.	Result		% Rec	Limits	Qu	ualifiers			
Vanadium		mg/L	0.05		0.049	98	80	-120				
Zinc		mg/L	0.05		0.049	97	80	-120				
MATRIX SPIKE & MATRIX SP		CATE: 254969	99		2549700							
			MS	MSD								
		2617148001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L	 ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	
Arsenic	mg/L	ND	0.01	0.01	0.0098	0.0097	98	97	75-125	1	20	
Barium	mg/L	0.000078J	0.05	0.05	0.049	0.050	99	99	75-125	0	20	
Beryllium	mg/L	ND	0.01	0.01	0.0097	0.0097	97	97	75-125	0	20	
Boron	mg/L	ND	0.05	0.05	0.049J	0.050J	93	95	75-125	2	20	
Cadmium	mg/L	ND	0.01	0.01	0.010	0.0099	100	99	75-125	1	20	
Calcium	mg/L	0.024J	0.62	0.62	0.65	0.65	100	101	75-125	1	20	
Chromium	mg/L	ND	0.05	0.05	0.050	0.049	99	97	75-125	2	20	
Cobalt	mg/L	ND	0.01	0.01	0.010J	0.0099J	100	98	75-125	1	20	
Copper	mg/L	ND	0.05	0.05	0.050	0.050	101	99	75-125	2	20	
Lead	mg/L	ND	0.05	0.05	0.050	0.050	100	99	75-125	1	20	
Lithium	mg/L	ND	0.05	0.05	0.050J	0.048J	99	96	75-125	4	20	
Molybdenum	mg/L	ND	0.05	0.05	0.050	0.050	100	99	75-125	1	20	
Nickel	mg/L	ND	0.05	0.05	0.050	0.049	100	98	75-125	1	20	
Selenium	mg/L	ND	0.05	0.05	0.050	0.050	101	100	75-125	1	20	
Silver	mg/L	ND	0.025	0.025	0.025	0.025	100	100	75-125	0	20	
Thallium	mg/L	ND	0.01	0.01	0.010	0.0099	100	99	75-125	1	20	
Vanadium	mg/L	ND	0.05	0.05	0.050	0.049	99	98	75-125	1	20	
Zinc	mg/L	0.017	0.05	0.05	0.067	0.066	99	98	75-125	1	20	

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



Project:	Plant Hammond							
Pace Project No.:	2617148							
QC Batch:	26252		Analysis M	lethod:	SM 2540C			
QC Batch Method:	QC Batch Method: SM 2540C		Analysis Description:		2540C Total Di	ssolved Solids		
Associated Lab Sar	mples: 26171480	01						
LABORATORY CO	NTROL SAMPLE:	118510						
			Spike	LCS	LCS	% Rec		
Parar	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Soli	ids	mg/L	400	408	102	84-108		
SAMPLE DUPLICA	TE: 118512							
			2617150003	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Soli	ids	mg/L	231	0 23	80	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.



Project:	Plant Hammond												
Pace Project No .:	2617148												
QC Batch:	26135		Analys	sis Method	: E	PA 300.0							
QC Batch Method:	EPA 300.0		Analys	sis Descrip	tion: 30	00.0 IC Anio	ns						
Associated Lab Sam	ples: 26171480	01											
METHOD BLANK:	117979		1	Matrix: Wa	ater								
Associated Lab Sam	ples: 26171480	01											
			Blanl	k F	Reporting								
Param	eter	Units	Resu	lt	Limit	MDL		Analyz	zed	Qua	alifiers		
Chloride		mg/L	0	.064J	0.25	C	.024	04/10/19	21:47				
Fluoride		mg/L		ND	0.30	C	.029	04/10/19	21:47				
Sulfate		mg/L		ND	1.0	C	0.017	04/10/19	21:47				
LABORATORY CON	TROL SAMPLE:	117980											
			Spike	LCS	5	LCS	%	Rec					
Param	eter	Units	Conc.	Resi	ult	% Rec	Li	mits	Qu	alifiers			
Chloride		mg/L	10	)	10.2	102		90-110					
Fluoride		mg/L	10	)	10.0	100		90-110					
Sulfate		mg/L	10	)	9.9	99		90-110					
MATRIX SPIKE & MA	ATRIX SPIKE DUP	LICATE: 11798	1		117982								
			MS	MSD									
		2617207001	Spike	Spike	MS	MSD	MS	MS	SD	% Rec		Max	
Parameter	Unit	ts Result	Conc.	Conc.	Result	Result	% Re	°C % F	Rec	Limits	RPD	RPD	Qual
Chloride	mg/	L 0.25J	10	10	9.9	10		96	97	90-110	1	15	
Fluoride	mg/	L ND	10	10	9.5	9.6		95	96	90-110	1	15	
Sulfate	mg/	L 0.13J	10	10	9.5	9.6		94	94	90-110	1	15	
MATRIX SPIKE SAM	PLE:	117983											
			26171	50001	Spike	MS		MS		% Rec			
Param	eter	Units	Res	sult	Conc.	Result		% Rec		Limits		Qualif	iers
Chloride		mg/L		131	10	10	).5	-12	10	90-1	110		
Fluoride		mg/L		0.13J	10	ę	9.4	:	93	90-1	110		
Sulfate		mg/L		392	10	13	3.7	-378	80	90-1	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**

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



#### QUALIFIERS

Project: Plant Hammond Pace Project No.: 2617148

#### 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

- B Analyte was detected in the associated method blank.
- C0 Result confirmed by second analysis.



#### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond Pace Project No.: 2617148

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617148001	FB-01	EPA 3010A	469500	EPA 6020B	469558
2617148001	FB-01	EPA 7470A	468895	EPA 7470A	468941
2617148001	FB-01	SM 2540C	26252		
2617148001	FB-01	EPA 300.0	26135		

Pace Arabytical

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

Sect		Section B	Section C	
	pany: Georgia Power - Coal Combustion Residuals	required Project information: Report To: Init Absham	Involce Information: Attention	Page: 1 Of
Addn	1858: 2460 Maner Road	Copy To: Lauren Petty, Geosvintec	Сотралу Лате:	
Atlan	tta, GA 30339		Address:	
Emai	il: jabraham@southernco.com	Purchase Order #: SCS10348606	Pace Quote:	A Sector of the
hong	ne: (404)506-7239 Fax	Project Name: Plant Hammond	Pace Project Manager. betsy.mcdaniel@pacelabs.com	
Requ	uested Due Date: SPCM & Cord   P-1	Project #:	Pace Profile #: 327 (AP) or 328 (Huft)	
Ĺ				
		(มค) ณ (มค) ณ		
	MATRIX Drinking Wi		Preservatives	
	SAMPLE ID	۲ COLLECT T COLLECT D & P = ₹ S S S S S S S S S S S S S S S S S S S	25 2010 2010 2010 2010 2010 2010 2010 20	(N/A) 6
# WƏLI	One Character per box. Were (A-2, 0-9 (, -) Ku Sample Ids must bo unique Tissue		<ul> <li>Ф. С СОИТАНИЕ</li> <li>Мартезегуей</li> <li>Маране (Арр. III, А Мета (Арр. III, А Мета (Арр. III, А</li> <li>Мета (Арр. III, А</li> <li>Мета (Арр. III, А</li> </ul>	ninoirt) teubises
	40-01	WTG 415/10 0940 4/15/10 0850 17	52 3 1 1 7 4 7 1	
S				
C				
		M.L.		
				474,0
D				
S.				
	Antiputo attratus	Elio		
		Molla Munden acourt 4/5/19	1945 Whelen / Ours in tree 45/19	
		10 33 low Corsular 4/6/19	11.8.14 Save 4.8.19	
			Maximan 4/8/1:	1153dr11 8 8 8
Ра	Do	SAMPLET AND SAMPLED		
ge 13		SIGNATURE of SAMPLER:	Nodia Muskus	AP h (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
s of 1			Mochia Mudary   wie again 4/5	

. . . . . . . . . . . . . . . . . . .

. . . . . . . . . .

4

Sa	mple Condition Upon Receip		1
Face Analytical			
Client Name	= OTA power	Project #	
		1.04.261	71/9
Tracking #:	Pace Other	- WUH · ZOI	140
Custody Seal on Cooler/Box Present:		PM: BM Di	Je Date: 04/15/19
Packing Material		CLIENT: GRPower-	CR
Thermometer Useri	Turne of less Ward Blue Ness		
	Biological Tissue is Erozony Van No.	Date and Initials of pe	rees has begun
Temp should be above freezing to 6°C	Comments:	contents: $\frac{4}{8}$	19 mg
Chain of Custody Present:			
Chain of Custody Filled Out:			
Chain of Custody Relinguished:	Pres INO IN/A 3.		
Sampler Name & Signature on COC:			
Samples Arrived within Hold Time:	Fes INO IN/A 5.		
Short Hold Time Analysis (<72hr):	□Yes □₩5" □N/A 6.		
Rush Turn Around Time Requested:	□ Yes □ M/A 7.		
Sufficient Volume:			
Correct Containers Used:			
-Pace Containers Used:			
Containers Intact:			
Filtered volume received for Dissolved tests	□Yes □No □177Å 11.		
Sample Labels match COC:			
-Includes date/time/ID/Analysis Matrix:	$\omega$		
All containers needing preservation have been checked.	Pres DNo DN/A 13.		
All containers needing preservation are found to be in			
compliance with EPA recommendation.	Initial when	Lot # of added	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	tes 210 completed	preservative	
Samples checked for dechlorination:	□ Yes □No ØN/A 14.		
Headspace in VOA Vials ( >6mm):	□ Yes □No □HVA 15.		
Trip Blank Present:	□ res □No ØN/A 16.		
Trip Blank Custody Seals Present	Tes INO DINIA		
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

May 03, 2019

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

RE: Project: Plant Hammond Pace Project No.: 2617207

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 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.

This revised report replaces the one issued on 4/16/2019. The report has been revised to correct metals units per consultant request. No other changes have been made to this report.

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

Sincerely,

Bety Mr Damel

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

Enclosures

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





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

#### CERTIFICATIONS

Project: Plant Hammond Pace Project No.: 2617207

#### **Atlanta Certification IDs**

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

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

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



# SAMPLE SUMMARY

Project: Plant Hammond

Pace Project No.: 2617207

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617207001	FB-02	Water	04/08/19 17:45	04/09/19 13:30
2617207002	EB-01	Water	04/08/19 18:00	04/09/19 13:30



# SAMPLE ANALYTE COUNT

Project:Plant HammondPace Project No.:2617207

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617207001	FB-02	EPA 6020B	JMW1	19	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617207002	EB-01	EPA 6020B	JMW1	19	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA



# ANALYTICAL RESULTS

#### Project: Plant Hammond

Pace Project No.: 2617207

Sample: FB-02	Lab ID: 2617207001 Collected: 04/08/19 17:45 Received: 04/09/19 13:30 Matrix: Wa								
Doromotoro	Deculto	Linito	Report	MDI		Droporod	Applyzod		Qual
Parameters		Units	Limit			- Prepared	Analyzed	CAS NO.	Quai
6020 MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: E	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 01:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 01:04	7440-38-2	
Barium	ND	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 01:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 01:04	7440-41-7	
Boron	ND	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 01:04	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 01:04	7440-43-9	
Calcium	ND	mg/L	0.50	0.021	1	04/10/19 19:59	04/12/19 01:04	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 01:04	7440-47-3	
Cobalt	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:04	7440-48-4	
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 01:04	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 01:04	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/10/19 19:59	04/12/19 01:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00010	1	04/10/19 19:59	04/12/19 01:04	7439-98-7	
Nickel	ND	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 01:04	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 01:04	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:04	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 01:04	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 01:04	7440-62-2	
Zinc	ND	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 01:04	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: El	PA 7470A			
Mercury	ND	mg/L	0.00020	0.00010	1	04/11/19 21:25	04/15/19 18:39	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	14.0J	mg/L	25.0	10.0	1		04/11/19 20:54		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	0.25J	mg/L	0.25	0.024	1		04/11/19 00:54	16887-00-6	В
Fluoride	ND	mg/L	0.30	0.029	1		04/11/19 00:54	16984-48-8	
Sulfate	0.13J	ma/L	1.0	0.017	1		04/11/19 00:54	14808-79-8	



# ANALYTICAL RESULTS

#### Project: Plant Hammond

Pace Project No.: 2617207

Sample: EB-01	Lab ID:	2617207002	Collecte	ed: 04/08/19	9 18:00	Received: 04/	/09/19 13:30 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Method: EPA	 6020B Pre	paration Met	hod: El	PA 3010A			
Antimony	ND	mg/L	0.0030	0.00011	1	04/10/19 19:59	04/12/19 01:08	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.000060	1	04/10/19 19:59	04/12/19 01:08	7440-38-2	
Barium	ND	mg/L	0.010	0.000060	1	04/10/19 19:59	04/12/19 01:08	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/19 19:59	04/12/19 01:08	7440-41-7	
Boron	ND	mg/L	0.10	0.0026	1	04/10/19 19:59	04/12/19 01:08	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/10/19 19:59	04/12/19 01:08	7440-43-9	
Calcium	ND	mg/L	0.50	0.021	1	04/10/19 19:59	04/12/19 01:08	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/10/19 19:59	04/12/19 01:08	7440-47-3	
Cobalt	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:08	7440-48-4	
Copper	ND	mg/L	0.025	0.00023	1	04/10/19 19:59	04/12/19 01:08	7440-50-8	
Lead	ND	mg/L	0.0050	0.000050	1	04/10/19 19:59	04/12/19 01:08	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/10/19 19:59	04/12/19 01:08	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00010	1	04/10/19 19:59	04/12/19 01:08	7439-98-7	
Nickel	ND	mg/L	0.010	0.00011	1	04/10/19 19:59	04/12/19 01:08	7440-02-0	
Selenium	ND	mg/L	0.010	0.000080	1	04/10/19 19:59	04/12/19 01:08	7782-49-2	
Silver	ND	mg/L	0.010	0.000050	1	04/10/19 19:59	04/12/19 01:08	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000060	1	04/10/19 19:59	04/12/19 01:08	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00012	1	04/10/19 19:59	04/12/19 01:08	7440-62-2	
Zinc	ND	mg/L	0.010	0.0011	1	04/10/19 19:59	04/12/19 01:08	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: El	PA 7470A			
Mercury	ND	mg/L	0.00020	0.00010	1	04/11/19 21:25	04/15/19 18:41	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	12.0J	mg/L	25.0	10.0	1		04/11/19 20:54		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	0.22J	mg/L	0.25	0.024	1		04/11/19 03:19	16887-00-6	В
Fluoride	ND	mg/L	0.30	0.029	1		04/11/19 03:19	16984-48-8	
Sulfate	0.38J	mg/L	1.0	0.017	1		04/11/19 03:19	14808-79-8	



Project: Pla	ant Hammond											
Pace Project No.: 26	17207											
QC Batch: 4	68895		Analys	is Method	: E	PA 7470A						
QC Batch Method:	EPA 7470A		Analysis Description:		tion: 7	470 Mercury	,					
Associated Lab Sample	es: 26172070	01, 2617207002										
METHOD BLANK: 25	46716		N	latrix: Wa	ter							
Associated Lab Sample	es: 26172070	01, 2617207002										
Paramete	er	Units	Blank Resulf	R	eporting Limit	MDL	,	Analyzed	Qua	alifiers		
Mercury		mg/L		ND	0.00020	0.00	0010 04/	15/19 18:06	;			
LABORATORY CONTR	ROL SAMPLE:	2546717										
Paramete	er	Units	Spike Conc.	LCS Resu	S Ilt	LCS % Rec	% Red Limits	c Qu	alifiers			
Mercury		mg/L	0.0025	C	0.0021	83	80	-120		-		
MATRIX SPIKE & MAT	RIX SPIKE DUP	PLICATE: 25467	18		2546719							
			MS	MSD								
Parameter	Uni	92424398001 ts Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/	/L ND	0.0025	0.0025	0.0019	0.0019	77	77	75-125	0	25	

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



Project: Plant Hammond

Pace Project No.: 2617207

	Analysis Meth	od: EPA	6020B			
	Analysis Desc	ription: 6020	MET			
001, 2617207002						
	Matrix:	Water				
7001, 2617207002						
	Blank	Reporting				
Units	Result	Limit	MDL	Analyzed	Qualifiers	
mg/L	ND	0.0030	0.00011	04/11/19 20:42		
mg/L	ND	0.0050	0.000060	04/11/19 20:42		
mg/L	ND	0.010	0.000060	04/11/19 20:42		
mg/L	ND	0.0030	0.000050	04/11/19 20:42		
mg/L	ND	0.10	0.0026	04/11/19 20:42		
mg/L	ND	0.0010	0.000070	04/11/19 20:42		
mg/L	ND	0.50	0.021	04/11/19 20:42		
mg/L	ND	0.010	0.00042	04/11/19 20:42		
mg/L	ND	0.010	0.000050	04/11/19 20:42		
mg/L	ND	0.025	0.00023	04/11/19 20:42		
mg/L	ND	0.0050	0.000050	04/11/19 20:42		
mg/L	ND	0.050	0.00042	04/11/19 20:42		
mg/L	ND	0.010	0.00010	04/11/19 20:42		
mg/L	ND	0.010	0.00011	04/11/19 20:42		
mg/L	ND	0.010	0.000080	04/11/19 20:42		
mg/L	ND	0.010	0.000050	04/11/19 20:42		
mg/L	ND	0.0010	0.000060	04/11/19 20:42		
mg/L	ND	0.010	0.00012	04/11/19 20:42		
mg/L	ND	0.010	0.0011	04/11/19 20:42		
	2001, 2617207002 2001, 2617207002 Units mg/L	Analysis Meth Analysis Desc 2001, 2617207002 2001, 2617207002 Matrix: 7 2001, 2617207002 Blank Units Result mg/L ND mg/L ND	Analysis Method:         EPA Analysis Description:         6020           2001, 2617207002         Matrix:         Water           2001, 2617207002         Blank         Reporting Limit           Units         Result         Limit           mg/L         ND         0.0030           mg/L         ND         0.0050           mg/L         ND         0.0030           mg/L         ND         0.0010           mg/L         ND         0.0030           mg/L         ND         0.0010           mg/L         ND         0.010           mg/L         ND         0.0010           mg/L         ND         0.010           mg/	Analysis Method:         EPA 6020B Analysis Description:         6020 MET           2001, 2617207002         Matrix: Water         2001, 2617207002           Matrix         Water         MDL           2001, 2617207002         Blank Result         Reporting Limit         MDL           2001, 2617207002         ND         0.00030         0.00011           2001, 2617207002         ND         0.010         0.000050           2012         ND         0.010         0.000070           2014         ND         0.010         0.000042           2015         ND         0.010         0.000050           2016         ND         0.010         0.00010           2017         ND         0.010	Analysis Method:         EPA 6020B           Analysis Description:         6020 MET           '001, 2617207002         Matrix: Water           '001, 2617207002         Matrix: Water           '01, 2617207002         Blank         Reporting           Units         Result         Limit         MDL         Analyzed           ''''''''''''''''''''''''''''''''''''	Analysis Method:         EPA 6020B Analysis Description:         6020 MET           2001, 2617207002         Matrix: Water         001, 2617207002         Matrix: Water           201, 2617207002         Blank         Reporting Limit         MDL         Analyzed         Qualifiers           mg/L         ND         0.0030         0.00011         04/11/19 20:42         Qualifiers           mg/L         ND         0.0030         0.000060         04/11/19 20:42         Qualifiers           mg/L         ND         0.0030         0.000060         04/11/19 20:42         Qualifiers           mg/L         ND         0.0030         0.000060         04/11/19 20:42         Qualifiers           mg/L         ND         0.010         0.000060         04/11/19 20:42         Qualifiers           mg/L         ND         0.010         0.000060         04/11/19 20:42         Qualifiers           mg/L         ND         0.010         0.000070         04/11/19 20:42         Qualifiers           mg/L         ND         0.010         0.000070         04/11/19 20:42         Qualifiers           mg/L         ND         0.010         0.000070         04/11/19 20:42         Qualifiers           mg/L         ND

#### LABORATORY CONTROL SAMPLE: 2545264

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.01	0.0099	99	80-120	
Barium	mg/L	0.05	0.049	99	80-120	
Beryllium	mg/L	0.01	0.010	104	80-120	
Boron	mg/L	0.05	0.052J	104	80-120	
Cadmium	mg/L	0.01	0.010	102	80-120	
Calcium	mg/L	0.62	0.64	102	80-120	
Chromium	mg/L	0.05	0.051	102	80-120	
Cobalt	mg/L	0.01	0.010	102	80-120	
Copper	mg/L	0.05	0.051	103	80-120	
Lead	mg/L	0.05	0.050	100	80-120	
Lithium	mg/L	0.05	0.050	100	80-120	
Molybdenum	mg/L	0.05	0.051	102	80-120	
Nickel	mg/L	0.05	0.051	102	80-120	
Selenium	mg/L	0.05	0.051	101	80-120	
Silver	mg/L	0.025	0.025	102	80-120	
Thallium	mg/L	0.01	0.010	100	80-120	

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

# **REPORT OF LABORATORY ANALYSIS**

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



Project:	Plant Hammond
Pace Project No .:	2617207

LABORATORY CONTROL SAMPLE:	2545264					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Vanadium	mg/L	0.05	0.051	101	80-120	
Zinc	mg/L	0.05	0.051	102	80-120	

MATRIX SPIKE & MATRIX SPIKI		CATE: 254520	65		2545266							
			MS	MSD								
		2617144001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L		0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Arsenic	mg/L		0.01	0.01	0.0091J	0.0089J	91	89	75-125	2	20	
Barium	mg/L		0.05	0.05	0.085	0.085	85	85	75-125	0	20	
Beryllium	mg/L		0.01	0.01	0.0086	0.0089	86	89	75-125	4	20	
Boron	mg/L	1.0J	0.05	0.05	1.0J	1.0J	67	48	75-125	1	20	M6
Cadmium	mg/L		0.01	0.01	0.011	0.011	99	99	75-125	0	20	
Calcium	mg/L	70.0	0.62	0.62	71.3	74.8	207	759	75-125	5	20	M6
Chromium	mg/L		0.05	0.05	0.048	0.048	96	95	75-125	1	20	
Cobalt	mg/L		0.01	0.01	0.015	0.015	97	96	75-125	1	20	
Copper	mg/L		0.05	0.05	0.049	0.048	98	97	75-125	1	20	
Lead	mg/L		0.05	0.05	0.048	0.048	96	96	75-125	0	20	
Lithium	mg/L		0.05	0.05	0.043J	0.044J	82	85	75-125	3	20	
Molybdenum	mg/L		0.05	0.05	0.050	0.049	99	99	75-125	1	20	
Nickel	mg/L		0.05	0.05	0.051	0.051	96	96	75-125	0	20	
Selenium	mg/L		0.05	0.05	0.044	0.044	89	88	75-125	1	20	
Silver	mg/L		0.025	0.025	0.023	0.023	92	91	75-125	1	20	
Thallium	mg/L		0.01	0.01	0.0096	0.0096	96	96	75-125	0	20	
Vanadium	mg/L		0.05	0.05	0.050	0.050	100	100	75-125	0	20	
Zinc	mg/L		0.05	0.05	0.047	0.047	86	86	75-125	0	20	

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



Project:	Plant Hammond							
Pace Project No.:	2617207							
QC Batch:	26252		Analysis M	lethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total Di	ssolved Solids		
Associated Lab Sar	mples: 26172070	01, 2617207002						
LABORATORY CO	NTROL SAMPLE:	118510						
			Spike	LCS	LCS	% Rec		
Parar	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Sol	ids	mg/L	400	408	102	84-108		
SAMPLE DUPLICA	TE: 118512							
			2617150003	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	231	0 23	80	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.



Project: Plant Ha	mmond												
Pace Project No.: 2617207													
QC Batch: 26135			Analys	is Method	: 6	EPA 300.0							
QC Batch Method: EPA 30	0.0		Analys	is Descrip	tion: 3	300.0 IC Anic	ons						
Associated Lab Samples: 2	2617207001,	, 2617207002											
METHOD BLANK: 117979			Ν	Aatrix: Wa	iter								
Associated Lab Samples: 2	2617207001,	, 2617207002											
			Blank	. F	Reporting								
Parameter		Units	Resul	t	Limit	MDL		Analyz	ed	Qua	lifiers		
Chloride		mg/L	0.	064J	0.2	5 C	).024	04/10/19	21:47				
Fluoride		mg/L		ND	0.3	0 0	).029	04/10/19	21:47				
Sulfate		mg/L		ND	1.0	0 0	).017	04/10/19	21:47				
	MPLE 11	17980											
			Spike	LCS	5	LCS	%	Rec					
Parameter		Units	Conc.	Resu	ult	% Rec	Li	mits	Qu	alifiers			
Chloride		mg/L	10		10.2	102		90-110					
Fluoride		mg/L	10		10.0	100		90-110					
Sulfate		mg/L	10		9.9	99		90-110					
MATRIX SPIKE & MATRIX SI		CATE: 11798	1		117982								
		0,112. 11,00	MS	MSD	111002								
		2617207001	Spike	Spike	MS	MSD	MS	MS	D	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Re	ec % R	ec	Limits	RPD	RPD	Qual
Chloride	mg/L		10	10	9.9	10		96	97	90-110	1	15	
Fluoride	mg/L	ND	10	10	9.5	5 9.6		95	96	90-110	1	15	
Sulfate	mg/L	0.13J	10	10	9.5	5 9.6		94	94	90-110	1	15	
MATRIX SPIKE SAMPLE:	11	17983											
			261715	50001	Spike	MS		MS		% Rec			
Parameter		Units	Res	ult	Conc.	Result		% Rec		Limits		Qualif	iers
Chloride		mg/L		131	10	1(	0.5	-121	0	90-1	110		
Fluoride		mg/L		0.13J	10	ę	9.4	g	3	90-1	10		
Sulfate		mg/L		392	10	1:	3.7	-378	0	90-1	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**

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



#### QUALIFIERS

Project: Plant Hammond Pace Project No.: 2617207

#### 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

B Analyte was detected in the associated method blank.

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



#### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	Plant Hammond
Pace Project No.:	2617207

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617207001	FB-02	EPA 3010A	468622	EPA 6020B	468673
2617207002	EB-01	EPA 3010A	468622	EPA 6020B	468673
2617207001	FB-02	EPA 7470A	468895	EPA 7470A	468941
2617207002	EB-01	EPA 7470A	468895	EPA 7470A	468941
2617207001	FB-02	SM 2540C	26252		
2617207002	EB-01	SM 2540C	26252		
2617207001	FB-02	EPA 300.0	26135		
2617207002	EB-01	EPA 300.0	26135		

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

Pace Anatytical

3	ection A		Section B						й	iction C											L		.			Γ	
ž <u>  8</u>	ompany:	a cuerte micornation: 6 Georgia Power - Coal Combration Residuals	Report To:	Join Aho	aham					voice In ention:	formati	0n: Jacobiana	Samuel						ſ		۵	399 :	-		7		
R	dress:	2480 Maner Road	Copy To:	Lauren	<sup>2</sup> eth, Ger	syntec				mpany	Name:	20000	Innoon	2.00					Т								
F	lanta, G	3A 30339							¥	ldress:			ļ								Sector Sec			01-01-01	arts: Ave	SULTRANS	
ភ្	<u>mail: ja</u>	jabrahan@southemco.com	Purchase Ord	ler.#:	SCS103	48606			å	toe Quo	l ig																
£	.eue	(404)506-7239 Fax	Project Name.	: Pla	int Hamm	puc			å	ice Projt	oct Man	ager.	belsy.	modani	el@pac	elabs.cc	Ĕ		CM ال	STATES IN		にある	VAINER	101 Bar			
ž	equested	od Due Date: Starto and TRI	Project #						ă	De Prof	ie #:	327 (AF	<sup>a</sup> ) or 326	(Linf)					Η				Ą				
L	ŀ			$\left  \right $					E					T					通田園	NULL De					S. 1944		
		XIATAN	SUCO	(GMP) (GMP)		COLL	CTED		ı		Pre	servat	ives		1 2N/2	1	1	_†									
		SAMPLE ID	828°49	cebes bild codes (G=GRAB C=C	ST	4RT		g g	I COLLECTION						(VI .994 8	oso ,vi qq	(080 s	<b> </b>				(N/A) 0					
	# WƏLI	One Character per box. Wee (A-Z, 0-9 / , -) Ar Sample ids must bo unique Tasse	84 FO 25	MATRIX CODE	DATE	TIME	DATE	TIME	* OF CONTAINER	Unpreserved	FONH FOSZH	N®OH HCI	N828203	Other	EOSVIERA	A ,III ,qqA) steM	TDS, CI, F, SO4	S25/922 muipeA				nitolinO laubiseA					
		20- 9t		5	4/8/14	545	ella/12	2	195	5	~				Ľ	Ē	7	╞		<b> </b> _	1_						
	NZ.	EB -01		<u>ک</u> لا	4/8/19	Sici	4/6/19	ŝ	6	4	~				)	7	7	╞╾		┢	F	1				Τ	
															<u> </u>					1	1		1			Τ	
																					$\downarrow$	$\overline{+}$		1		1	
69 X	G														L			<u> </u>	$\square$	$\Lambda$	-	T					
1967. 1	200															$\square$	<u></u> ↓				$\square$					T	
										2	2	5	1		L											Τ	
							2	ľ	H	<u>þ</u>	1				I		F	$\vdash$		╞	F					Τ	
	R					4	1		1									Ċ		20		K					
200	00														<u> </u>		5 i	5				Í	5 1				
															<u> </u>		1										
2223	No.										<b>—</b>				<u> </u>		~~=~~~	1172	7							·	
				tion i	Na on			ine.	國際					海胆		NOL			<b>MATE</b>					LOND I	ieller		
┽╹			Mac	22	1m	(100	36	<u>1/8</u>	69	102	0	5600	3/0	N X X	v Kee			3	819	2	3						
			lest.	Laco	/ La	1430	]9	1/6/1	5	2	N N				9			7	0		ŗ			<u> </u>	+		
								•	-			$\left  \right $	r		P				-						$\left  \right $	Г	
]												30		Þ,	K	2	$\left  \right $	£	41	213	2	L-	2	ſ	1 N		
	Pag					SAD R	<b>NAME</b>	<b>D</b> SQN	<b>MTIR</b>														L uo	<u>}</u>	$\vdash$		
	ge 14 d					SIG:	II Namo IATURE	of SAMPL STAMPL		22	بتم	o la	2	<u>z</u> ł	┢	DATE	Signed:		8	110		) vi dWE	(N/) cesived	sieq http://www. http://www.	sejdure ///)	(N/.	
	of 15								·						-			5			1	I	2	2	s V	ູ	

( in the second s	Sample Condition	Upon Receipt		
Pace Analytical Client N	Name: GAA	Power	Project #	
Courier: Fed Ex UPS USPS		Pace Other	WO#:26	17207
Custody Seal on Cooler/Box Present		ntact: Ves	PM: BM	Due Date: 04/16/19
			CLIENT: CHICH	
				N
Cooler Temperature	Biological Tissue is	Blue None s Frozen: Yes No	Date and Initia contents:	s of person examining
Chain of Custody Property		Comments:		
Chain of Custody Present:		1.		
Chain of Custody Filled Out:		2.		
Sampler Name & Signature on COC		о. 1		
Samples Arrived within Hold Time		+. 5		
Short Hold Time Analysis /<72hr)		s.		
Rush Turn Around Time Requested:		7		
Sufficient Volume:		r. R		
Correct Containers Used:		э. Э		
-Pace Containers Used		2.		
Containers Intact:		10		
Filtered volume received for Dissolved test		11		
Sample Labels match COC:		12		
-Includes date/time/ID/Analysis		12.		
All containers needing preservation have been che		13		
All containers needing preservation are found to compliance with EPA recommendation.	be in Dies ONo ON/A	13.		
exceptions: VOA. coliform, TOC, O&G, WI-DRO (wat	er) 🗆 Yes 🗇 No	initial when completed	Lot # of added	
Samples checked for dechlorination:	Dres Dino Dinta	14	· · · · · · · · · · · · · · · · · · ·	
Headspace in VOA Vials ( >6mm):		15.		
Trip Blank Present:		16.		
Trip Blank Custody Seals Present				
Pace Trip Blank Lot # (if purchased):				
Chent Nothication Kesolution:	Deter	imo	Field Data Require	P?Y/N
Comments/ Resolution:				
				s
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

April 18, 2019

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

RE: Project: Plant Hammond Pace Project No.: 2617269

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 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.

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

Sincerely,

Batery Mr Damil

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

Enclosures






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

### CERTIFICATIONS

Project: Plant Hammond Pace Project No.: 2617269

### **Atlanta Certification IDs**

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



### SAMPLE SUMMARY

Project: Plant Hammond Pace Project No.: 2617269

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617269001	EB-02	Water	04/09/19 15:30	04/10/19 14:05



# SAMPLE ANALYTE COUNT

Project:Plant HammondPace Project No.:2617269

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2617269001	EB-02	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	RLC	1
		EPA 300.0	RLC	3



### ANALYTICAL RESULTS

### Project: Plant Hammond

Pace Project No.: 2617269

Sample: EB-02	Lab ID:	2617269001	Collecte	ed: 04/09/19	9 15:30	Received: 04/	(10/19 14:05 Ma	atrix: Water	
<b>-</b>			Report			<b>.</b> .			<u> </u>
Parameters	Results	Units	Limit	MDL		Prepared	Analyzed	CAS NO.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: E	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	04/11/19 13:50	04/12/19 16:42	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/11/19 13:50	04/12/19 16:42	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	04/11/19 13:50	04/12/19 16:42	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/11/19 13:50	04/12/19 16:42	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	04/11/19 13:50	04/12/19 16:42	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/11/19 13:50	04/12/19 16:42	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	04/11/19 13:50	04/12/19 16:42	7440-70-2	
Chromium	0.028	mg/L	0.010	0.0016	1	04/11/19 13:50	04/12/19 16:42	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/11/19 13:50	04/12/19 16:42	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	04/11/19 13:50	04/12/19 16:42	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	04/11/19 13:50	04/12/19 16:42	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	04/11/19 13:50	04/12/19 16:42	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/11/19 13:50	04/12/19 16:42	7439-98-7	
Nickel	0.0071J	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 16:42	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	04/11/19 13:50	04/12/19 16:42	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	04/11/19 13:50	04/12/19 16:42	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	04/11/19 13:50	04/12/19 16:42	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	04/11/19 13:50	04/12/19 16:42	7440-62-2	
Zinc	0.0021J	mg/L	0.010	0.0021	1	04/11/19 13:50	04/12/19 16:42	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: E	PA 7470A			
Mercury	ND	mg/L	0.00050	0.000036	1	04/12/19 09:10	04/12/19 14:25	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	20.0J	mg/L	25.0	10.0	1		04/15/19 21:23		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	0.38	mg/L	0.25	0.024	1		04/16/19 06:28	16887-00-6	В
Fluoride	ND	ma/L	0.30	0.029	1		04/16/19 06:28	16984-48-8	
Sulfate	0.13J	mg/L	1.0	0.017	1		04/16/19 06:28	14808-79-8	



Project: Pl	ant Hammond											
Pace Project No.: 26	617269											
QC Batch:	26291		Analysi	is Method:	E	PA 7470A						
QC Batch Method:	EPA 7470A		Analysi	is Descript	ion: 7	470 Mercury	/					
Associated Lab Sample	es: 261726900	1										
METHOD BLANK: 11	8724		N	latrix: Wat	ter							
Associated Lab Sample	es: 261726900	1										
			Blank	R	eporting							
Paramete	er	Units	Result	t	Limit	MDL	/	Analyzed	Qua	alifiers		
Mercury		mg/L		ND	0.00050	0.000	0036 04/	12/19 13:52	2			
LABORATORY CONTR	ROL SAMPLE:	118725										
Paramete	er	Units	Spike Conc.	LCS Resu	; It	LCS % Rec	% Rec Limits	c G QI	ualifiers			
Mercury		mg/L	0.0025	0	.0025	99	80	-120		_		
MATRIX SPIKE & MAT	RIX SPIKE DUPL	ICATE: 118726	6		118727							
			MS	MSD								
		2617267001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	<b>•</b> •
Parameter	Units	B Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	mg/L	. ND	0.0025	0.0025	0.0025	0.0025	101	101	75-125	0	20	

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



Plant Hammond Project:

Doco Project No 2617260

Pace Project No.: 2617269										
QC Batch: 26237		Analysis Meth	nod: EPA	A 6020B						
QC Batch Method: EPA 3005A		Analysis Description: 6020B MET								
Associated Lab Samples: 261726	9001									
METHOD BLANK: 118407 Matrix: Water										
Associated Lab Samples: 261726	9001									
		Blank	Reporting							
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers				
Antimony	mg/L	ND	0.0030	0.00078	04/12/19 14:10					
Arsenic	mg/L	ND	0.0050	0.00057	04/12/19 14:10					
Barium	mg/L	ND	0.010	0.00078	04/12/19 14:10					
Beryllium	mg/L	ND	0.0030	0.000050	04/12/19 14:10					
Boron	mg/L	ND	0.040	0.0039	04/12/19 14:10					
Cadmium	mg/L	ND	0.0010	0.000093	04/12/19 14:10					
Calcium	mg/L	ND	0.50	0.014	04/12/19 14:10					
Chromium	mg/L	ND	0.010	0.0016	04/12/19 14:10					
Cobalt	mg/L	ND	0.010	0.00052	04/12/19 14:10					
Copper	mg/L	ND	0.025	0.0013	04/12/19 14:10					
Lead	mg/L	ND	0.0050	0.00027	04/12/19 14:10					
Lithium	mg/L	ND	0.050	0.00097	04/12/19 14:10					
Molybdenum	mg/L	ND	0.010	0.0019	04/12/19 14:10					

ND

ND

ND

ND

ND

ND

0.010

0.010

0.010

0.010

0.010

0.0010

0.00095 04/12/19 14:10

0.0014 04/12/19 14:10

0.00095 04/12/19 14:10

0.00014 04/12/19 14:10

0.0019 04/12/19 14:10

0.0021 04/12/19 14:10

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

### LABORATORY CONTROL SAMPLE: 118408

Nickel

Silver

Zinc

Thallium

Vanadium

Selenium

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.099	99	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.10	103	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Calcium	mg/L	1	0.96	96	80-120	
Chromium	mg/L	0.1	0.10	102	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Copper	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.097	97	80-120	
Nickel	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Silver	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

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

### **REPORT OF LABORATORY ANALYSIS**

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



Project:	Plant Hammond
Pace Project No .:	2617269

LABORATORY CONTROL SAMPLE:	118408					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Vanadium	mg/L	0.1	0.10	100	80-120	
Zinc	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 118409 118410												
			MS	MSD									
		2617267001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max		
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	103	103	75-125	0	20		
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	20		
Barium	mg/L	0.067	0.1	0.1	0.17	0.17	103	99	75-125	2	20		
Beryllium	mg/L	ND	0.1	0.1	0.094	0.092	94	92	75-125	2	20		
Boron	mg/L	0.048	1	1	1.0	0.97	95	92	75-125	3	20		
Cadmium	mg/L	ND	0.1	0.1	0.097	0.099	97	99	75-125	1	20		
Calcium	mg/L	73.9	1	1	74.4	72.8	50	-109	75-125	2	20	M6	
Chromium	mg/L	ND	0.1	0.1	0.099	0.099	99	98	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	1	20		
Copper	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20		
Lead	mg/L	0.00039J	0.1	0.1	0.097	0.097	96	96	75-125	0	20		
Lithium	mg/L	0.031J	0.1	0.1	0.12	0.12	93	90	75-125	2	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	101	75-125	1	20		
Nickel	mg/L	0.00098J	0.1	0.1	0.099	0.098	98	97	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.095	0.099	95	99	75-125	5	20		
Silver	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	0	20		
Vanadium	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20		
Zinc	mg/L	ND	0.1	0.1	0.10	0.10	99	100	75-125	1	20		

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

### **REPORT OF LABORATORY ANALYSIS**

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



Project:	Plant Hammond							
Pace Project No.:	2617269							
QC Batch:	26275		Analysis	Method:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis	Description:	2540C Total D	issolved Solids		
Associated Lab Sar	mples: 26172690	01						
LABORATORY CO	NTROL SAMPLE:	118616						
			Spike	LCS	LCS	% Rec		
Para	meter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Sol	ids	mg/L	400	381	95	84-108		
SAMPLE DUPLICA	TE: 118618							
			261726700	3 Dup		Max		
Para	meter	Units	Result	Result	RPD	RPD	Qualifiers	2
Total Dissolved Sol	ids	mg/L	2	67	252	6	10	
SAMPLE DUPLICA	TE: 118698							
			261720900	6 Dup		Max		
Para	meter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	2	64 2	245	7	10	

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



Project: Pla	ant Hammond											
Pace Project No.: 26	17269											
QC Batch: 2	6352		Analys	sis Method	: El	PA 300.0						
QC Batch Method: E	PA 300.0		Analys	sis Descrip	tion: 30	0.0 IC Anio	ns					
Associated Lab Sample	es: 2617269001		,	·								
METHOD BLANK: 11	9015		Ν	Matrix: Wa	ter							
Associated Lab Sample	s: 2617269001											
			Blank	K R	eporting							
Paramete	er	Units	Resu	lt	Limit	MDL		Analyzed	Qua	alifiers		
Chloride		mg/L		0.31	0.25	0	.024 04	/16/19 02:16	;			
Fluoride		mg/L		ND	0.30	0	.029 04	/16/19 02:16	;			
Sulfate		mg/L		ND	1.0	0	.017 04	/16/19 02:16	;			
LABORATORY CONTR	OL SAMPLE: 1	19016										
			Spike	LCS	6	LCS	% Re	С				
Paramete	er	Units	Conc.	Resu	ılt	% Rec	Limit	s Qu	alifiers			
Chloride		mg/L	10	)	10.1	101	9	0-110				
Fluoride		mg/L	10	)	9.3	93	9	0-110				
Sulfate		mg/L	10	)	10.7	107	9	0-110				
MATRIX SPIKE & MAT		CATE: 119017	7		119018							
			MS	MSD								
		2617267001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	3.3	10	10	13.1	13.0	98	97	90-110	1	15	
Fluoride	mg/L	0.061J	10	10	9.2	9.1	91	91	90-110	1	15	
Sulfate	mg/L	83.6	10	10	81.4	81.5	-21	-21	90-110	0	15	M1
MATRIX SPIKE SAMPL	.E: 1 <sup>,</sup>	19019										
			261726	67002	Spike	MS	ľ	ИS	% Rec			
Paramete	er	Units	Res	ult	Conc.	Result	%	Rec	Limits		Qualit	iers
Chloride		mg/L		1.9	10	11	.5	96	90-	110		
Fluoride		mg/L		0.067J	10	ç	9.1	90	90-	110		
Sulfate		mg/L		21.4	10	29	9.9	85	90-	110 M	1	

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

### **REPORT OF LABORATORY ANALYSIS**

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



### QUALIFIERS

Project: Plant Hammond Pace Project No.: 2617269

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

- B Analyte was detected in the associated method blank.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond Pace Project No.: 2617269

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617269001	EB-02	EPA 3005A	26237	EPA 6020B	26241
2617269001	EB-02	EPA 7470A	26291	EPA 7470A	26328
2617269001	EB-02	SM 2540C	26275		
2617269001	EB-02	EPA 300.0	26352		

Pace Analytical

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

	and a second		GA		Chlorine (Y/V)	taubiđe Rebidual						2617269			8 10 do		(Livi) 2 subjes (Lipot Coojet Coojet (Livi) Coojet Coojet (Livi) Lewb tu C Lewb tu C Lewb tu C
Company Name: Address:	Pace Quote:	Pace Project Manager. betsy.modaniel@pacelabs.com	Pace Profile #: 327 (AP) cr 328 (Huff)	Preservatives	ытынеес егчеd рр. III, Арр. IV, D&O DP. III, & D&O) DP. III,	Настрания           Каділш           Мега (М           Мега (М           Мега (М           Мега (М           Мега (М           Мала (М           <									1/101/10	A CALLER AND	Noera Musius Noera Musius Nouria rajanjung Date signed: 419
Corry 14. Lauren Feny, Geosyntec	Purchase Order #: SCS10348606	Project Name: Plant Hammond	rrojed #:	N COLLECTED COLLECTED	보 2 등 2 유 2 유 2 등 2 등 2 등 2 등 2 등 2 등 2 등	AATRA SAMPL DATE TIME DATE TIME DATE TIME	M C 4/14/4 1250 4/4/14 12 20 20				A A A			Novic martine with			SAMPLER NAME AND SIGNATI PRINT Namo of SAMPLER: SIGNATURE of SAMPLER:
lama, GA 30339	nail: jabraham@southernco.com	one: (404)506-7239 Fac		MATTRIX	<b>SAMPLE ID</b> Sample ID Sevent Protect		107 CD										Page 13 of 1
	larta. CA 3039 Contraction Company name: Company name: Contraction Company name: Contraction Contracti	anta. G. 3.0339	arta. G. 30339	arta. GA 30339 vali: jabraham@sourter.co.com Purchase Order #: SCS 10348606 Pace Quote: Address ove: (300/505-7239 Fac: Project Marmade Pace Quote: Project Marmager: betsy modariel@pacelabs.com, E. 700 Sec. Sec. Sec. Sec. Sec. Sec. Sec. Sec.	arta. G. 3039 arti. jabraham@southernco.com Puertase Order #. SCS 10348606 Project #. Project #.	Mile     Chilorine (YNI)     Mile     Mile       Mile     Mile     Mile     Mile     Mile       Mile     Mile     Mile<	Mathematical Control     Mathematical Control     Mathematical Control       11     International Control     100,000,000,000,000,000,000,000,000,000	Image: constraint of the state of the st	III     III     III     IIII     IIII     IIIII       IIII     IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Половина         Половина         Половина         Половина         Половина         Половина           1 <td>П. С. 17030         П. С. 170300         П. С. 1703000         П. С. 17030000         П. С.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	П. С. 17030         П. С. 170300         П. С. 1703000         П. С. 17030000         П. С.						

-----

ì

San	nple Condition Upon Receipt	
Face Analytical Client Name:	GA Power	Project #
Courier: Fed Ex UPS USPS Clien	t Commercial Pace Other	W0#:2617269
Custody Seal on Cooler/Box Present:	no Seals intact:	PM: BM Due Date: 04/17/19
Packing Material: Bubble Wrap Bubble		CLIENT: GRPower-CCR
Thermometer Used	Type of Ice: Wet Blue None	Samples on ice, cooling process has begun
Cooler Temperature 2.3 Temp should be above freezing to 6°C	Biological Tissue is Frozen: Yes No Comments:	Date and initials of person examining contents: 4710/19 MK
Chain of Custody Present:		
Chain of Custody Filled Out:		
Chain of Custody Relinguished:	ETTES DNO DN/A 3.	
Sampler Name & Signature on COC:	EYes INO IN/A 4.	
Samples Arrived within Hold Time:		
Short Hold Time Analysis (<72hr):		
Rush Turn Around Time Requested:		
Sufficient Volume:		
Correct Containers Used:		
-Pace Containers Used:		
Containers Intact:		
Filtered volume received for Dissolved tests	□Yes □No □N/A 11.	
Sample Labels match COC:		
-Includes date/time/ID/Analysis Matrix:	$\omega$	
All containers needing preservation have been checked.	ETY 3 DNo DN/A 13.	
All containers needing preservation are found to be in compliance with EPA recommendation.		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	Dres DNo completed	Lot # of added
Samples checked for dechlorination:		
Headspace in VOA Vials ( >6mm)		
Trip Blank Present:		
Trip Blank Custody Seals Present		
Pace Trip Blank Lot # (if purchased):		
Client Notification/ Resolution:		
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

June 20, 2019

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

RE: Project: Plant Hammond Pace Project No.: 2619807

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Batery Mr Damil

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

Enclosures







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

### CERTIFICATIONS

Project: Plant Hammond Pace Project No.: 2619807

### **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



2619807001

EB-01

### SAMPLE SUMMARY

06/17/19 09:54

06/18/19 12:00

Water

Lab ID	Sample ID	Matrix	Date Collected	Date Received
Pace Project No.:	2619807			
Project:	Plant Hammond			

REPORT O	F LABORATORY	ANALYSIS
----------	--------------	----------



# SAMPLE ANALYTE COUNT

Project: Plant Hammond Pace Project No.: 2619807

Lab ID	Sample ID	Method Analysts R	nalytes eported
2619807001	EB-01	EPA 6020B CSW	3
		SM 2540C M1O	1
		EPA 300.0 MWB	3



### ANALYTICAL RESULTS

Pace Project No.: 2619807

Sample: EB-01	Lab ID:	Collecte	d: 06/17/19	9 09:54	Received: 06/	atrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Prep	aration Met	hod: El	PA 3005A			
Barium	ND	mg/L	0.010	0.00049	1	06/18/19 16:30	06/19/19 16:47	7440-39-3	
Boron	ND	mg/L	0.040	0.0049	1	06/18/19 16:30	06/19/19 16:47	7440-42-8	
Calcium	ND	mg/L	0.10	0.011	1	06/18/19 16:30	06/19/19 16:47	7440-70-2	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	14.0	mg/L	10.0	10.0	1		06/19/19 17:31		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	0.93	mg/L	0.25	0.024	1		06/20/19 06:47	16887-00-6	
Fluoride	0.33	mg/L	0.30	0.029	1		06/20/19 06:47	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		06/20/19 06:47	14808-79-8	



QC Batch: 30489		Analysis I	Method:	EPA 6020B			
QC Batch Method: EPA 3005A		Analysis [	Description:	6020B MET			
Associated Lab Samples: 2619	807001						
METHOD BLANK: 137204		Mat	rix: Water				
Associated Lab Samples: 2619	807001						
Parameter	Unite	Blank	Reporting	g MDI	۸n	alvzod	Qualifiers
							Quannere
Barium	mg/L	N	ID 0.	010 0.0	0049 06/19/ 0049 06/19/	19 15:18	
Calcium	mg/L	N	ID (	).10 (	).011 06/19/	19 15:18	
LABORATORY CONTROL SAMP	LE: 137205						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc	Result	% Rec	Limits	Quali	fiers
Barium	mg/L	0.1	0.095	95	80-12	20	
Boron	mg/L	1	0.96	96	80-12	20	
Coloium	mg/L	1	0.91	91	80-12	20	

Parameter	Units	2619806001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.052	0.1	0.1	0.15	0.15	100	100	75-125	0	20	
Boron	mg/L	1.1	1	1	2.1	2.1	97	100	75-125	1	20	
Calcium	mg/L	164	1	1	168	176	381	1150	75-125	4	20	M6

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



Project:	Plant Hammond							
Pace Project No.:	2619807							
QC Batch:	30523		Analysis I	Method:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis [	Description:	2540C Total D	issolved Solids		
Associated Lab Sar	mples: 26198070	01						
LABORATORY CO	NTROL SAMPLE:	137322						
			Spike	LCS	LCS	% Rec		
Para	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Sol	ids	mg/L	400	414	104	84-108		
SAMPLE DUPLICA	TE: 137323							
			2619806002	2 Dup		Max		
Para	neter	Units	Result	Result	RPD	RPD	Qualifiers	_
Total Dissolved Sol	ids	mg/L	7	51 7	/83	4	10	-
SAMPLE DUPLICA	TE: 137664							
			2619850002	2 Dup		Max		
Para	neter	Units	Result	Result	RPD	RPD	Qualifiers	_
Total Dissolved Sol	ids	mg/L	23	33 2	256	9	10	

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



Project:	Plant Ham	mond											
Pace Project No.:	2619807												
QC Batch:	30603			Anal	ysis Metho	d: I	EPA 300.0						
QC Batch Method:	EPA 300.	0		Anal	ysis Descri	ption:	300.0 IC Ar	nions					
Associated Lab Sa	mples: 26	1980700 <sup>2</sup>	1										
METHOD BLANK:	137790				Matrix: W	ater							
Associated Lab Sa	mples: 26	1980700	1										
				Bla	nk	Reporting							
Para	meter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Chloride			mg/L		ND	0.2	5	0.024	06/20/19 03	46			
Fluoride			mg/L		ND	0.3	0	0.029	06/20/19 03	46			
Sulfate			mg/L		ND	1.	0	0.017	06/20/19 03	46			
LABORATORY CO	NTROL SAM	IPLE: 1	137791										
				Spike	LC	S	LCS	%	Rec				
Para	meter		Units	Conc.	Res	sult	% Rec	L	imits	Qualifiers			
Chloride			mg/L		10	9.9	g	9	90-110		_		
Fluoride			mg/L		10	9.7	g	7	90-110				
Sulfate			mg/L	,	10	9.7	g	17	90-110				
MATRIX SPIKE & I	MATRIX SPI	KE DUPL	ICATE: 1377	92		137793							
	-	-		MS	MSD								
			2619806001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Red	c % Rec	Limits	RPD	RPD	Qual
Chloride		mg/L	3.0	10	10	12.2	12.3		91 93	90-110	1	15	
Fluoride		mg/L	1.2	10	10	10.2	10.3		90 91	90-110	1	15	
Sulfate		mg/L	243	10	10	202	202	-4	08 -409	90-110	0	15	E,M1
Sulfate		mg/L	243	10	10	202	202	-4	08 -409	90-110	0	15	E,M1
MATRIX SPIKE SA	MPLE:	1	137794										
				2619	806002	Spike	MS		MS	% Rec	;		
Para	meter		Units	Re	esult	Conc.	Result	:	% Rec	Limits		Qual	ifiers
Chloride			mg/L		32.9	10		39.1	62	90	-110 M	1	
Fluoride			mg/L		0.97	10		10.3	93	90	-110		
Sulfate			mg/L		219	10		184	-348	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**

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



### QUALIFIERS

Project: Plant Hammond Pace Project No.: 2619807

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond Pace Project No.: 2619807

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2619807001	EB-01	EPA 3005A	30489	EPA 6020B	30498
2619807001	EB-01	SM 2540C	30523		
2619807001	EB-01	EPA 300.0	30603		

Pace Analytical

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

Section	LA de CHande Informations	Section B Particul Brote	and Info	-moleum				01 2	iectio:	0	- often														.			-	Г
Compar	W. Georria Power - Crat Combristion Besiduals	Report To: 10	nin Ahr	reham 1 au	nen Petty	2			ttentic			ninee6	4	- Como	Į						_		a B	::	-		5	-	
Address	24RD Manar Road	Copy To:	- Unsue	tec.				Ī	acmo	NV Nan	9																		
	Atlanta, GA 30339								ddnes											Ţ	1000	日本語の日本	1000	1000	100000	<b>Manual</b> Second			
Email:	jabraham@southernco.com	Purchase Order	14 14 15	SCS1038	2775				ace Q	uote:							1					Conception of				in the second se			8
Phone:	(404)506-7239 Fax	Project Name:	Pla	ant Hammo	ind Resam	ste			ace P	roject I	Manag	L.	betsy	modar	tiel@p	acelat	80.8			Ι							100000	16-20-02-02	Č,
Reques	ted Due Date: & Standard TAL	Project #:	3	250				٩	ace P	rofile #	м т.	27 (AP	or 32	8 (Huff		CONSIGNATION OF THE PARTY OF TH				$\Box$					ą			20,000	101
			( (1				Γ		$\vdash$																				Si 10
	MATRIX	a 44 8	COWP S to le		COLLE	CTED		N			Pres	ervati	ves		١Ø	+	+		╀	L		_						17 AU 17 AU	
		2 년 2 년 2 년 2 년 2 월 7 년 2 년 2 년 2 월 1 년 1 년 1 년 1 년 1 년 1 년 1 년 1 년 1 년 1	(G=GHVB C==	STA	RT .	ENI		T COLLECTIO							1991								┠────	(N/A) 6					
#WƏLI	One Character per box. Woo (A-Z, 0-9 /, -) A Sample tids must be unique Tasue	2 2 2 5 2003 XIRTAM	SAMPLE TYPE	DATE	TIME	DATE	TIME	AMPLE TEMP		H2SO4	HCI EONH	HOPN	N <sup>8</sup> 28203	Other	eee/leuv 🦉	muins8	Calcium	Chloride	eteinunge	SOL	<u> </u>			nitold) IsubiseR					
	EB-01	19	9	CND	9:53(	117	<u> 9</u> :34	\$			-			-		Ŕ	X	反	İŞ	$\mathbf{X}$	╀		╂─	Z					<b>-</b>
2																		<b> </b>					┼			ĺ			
																		-								$ \rangle$	N		-
														<u> </u>	1						┢		+	Ţ	Y				-
9						-		_		-								┝		$\Box$	╀								
9											H				\	$\vdash$	ЦТ.	┢─		$\dagger$			┢			1			<u> </u>
					<b></b>						It	<u>P /</u>	4	A-		<u> </u>							-						-
8							ž		$\rho/$	1	h			[		-		$\vdash$	F	$\Box$	+-	上	┝		1				
6						+	$\sum$								L			9	#		0	1	8	6				J	
10			$\neg$	T	\																				_			I	_
Ţ			<b>—</b>								<u> </u>		<u> </u>		<u> </u>	-				_								·	
12	L.												-				- N	619	807									_	
	ALL ALL COMPANY COMPANY			Allen Britik	NOTION I		DOTE		nn.				80	neb én		OW:				E.						53	SND		
		Dalk	<u>م</u>	And	S. Con	X S S S	e/17	μ L	S	Q	5	370	47	Neu	phere	، (و	1103	(j	9	E	3	8		-			—		-
		Neul	3	cm/W	hen (c	Je C	91	5	8	R	-3	J	$\Im$	÷.	ž	Ś			61	18	0	ê		┢─			+		
		-		-				-		-	-4	4	<u> </u>	Ľ	2	ß	な		6/1	8/1	9	2	0	-					
F								-			-								_	-			Ó	77	8-	$\square$			•
age 1					PRINT	NAME AN Name of	ID'SIGN SAMPLI		<b>.</b>	-			۶ <b>ト</b>										) (			<u> </u>		ľ	
1 of 1					SIGNA	TURE of	SAMPLI		70	10		19	7			SIS .	ng sign	ÿ		2	110		ui dMB.		(N/) 9	paled ustody	sejdwe (N/)	)) (N/)	
2				-					Į		i	ł			1			1	ず	₹	]			4	0	es S	S U	mi V	

ł

. | |

.....

Face Analytical Client Name	: GAI	ower	Project #
Courier: 🔲 Fed Ex 🛄 UPS 🗍 USPS 🗍 Clie	ent Commercial	Pace Other	WO#:2619807
Tracking #: Custody Seal on Cooler/Box Present:yes Packing Material: Bubble Wrap Bubble	no Seals	intact: ves	PM: BM Due Date: 06/20/ CLIENT: GAPower-CCR
Thermometer Used		Blue Noce	
Cooler Temperature 0.7 Temp should be above freezing to 6°C	Biological Tissue	is Frozen: Yes No Comments:	Date and Initials of person examining contents: 6/18/19 M2
Chain of Custody Present:		1.	
Chain of Custody Filled Out:		2.	
Chain of Custody Relinquished:		3.	
Sampler Name & Signature on COC:		4.	
Samples Arrived within Hold Time:		5.	
Short Hold Time Analysis (<72hr):		6.	
Rush Turn Around Time Requested:		7.	
Sufficient Volume:		8.	
Correct Containers Used:	Pres INO IN/A	9.	
-Pace Containers Used:			
Containers Intact:	Pres DNo DN/A	10.	
Filtered volume received for Dissolved tests	□Yes □No ₽NA	11.	
Sample Labels match COC:		12.	
-Includes date/time/ID/Analysis Matrix:	$\underline{\omega}$		
All containers needing preservation have been checked.	Dres DNO DN/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes □NO	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:		14.	
Headspace in VOA Vials ( >6mm):		15	·
Trip Blank Present:	□Yes □No ₽N/A	16.	
Trip Blank Custody Seals Present	□Yes □No 🔎 🕅 A		
Pace Trip Blank Lot # (if purchased):			
Client Notification/ Resolution:			Field Data Required? Y / N
Person Contacted:	Date/	Time:	
Comments/ Resolution:			
······································		· · · · · · · · · · · · · · · · · · ·	

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

June 20, 2019

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

RE: Project: Plant Hammond Huffaker Pace Project No.: 2619847

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 19, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Batery Mr Damil

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

Enclosures

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





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

### CERTIFICATIONS

Project: Plant Hammond Huffaker Pace Project No.: 2619847

### **Atlanta Certification IDs**

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



### SAMPLE SUMMARY

Project:Plant Hammond HuffakerPace Project No.:2619847

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2619847001	GWC-20	Water	06/18/19 14:05	06/19/19 09:50



# SAMPLE ANALYTE COUNT

Project: Plant Hammond Huffaker Pace Project No.: 2619847

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2619847001	GWC-20	EPA 300.0	MWB	1



## ANALYTICAL RESULTS

Project: Plant Hammond Huffaker

Pace Project No.: 2619847

Sample: GWC-20	Lab ID:	2619847001	Collected	d: 06/18/19	9 14:05	Received: 06/	/19/19 09:50 N	Aatrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Sulfate	38.7	mg/L	5.0	0.085	5		06/20/19 11:19	9 14808-79-8	



Project:	Plant Hammond Hu	uffaker										
Pace Project No .:	2619847											
QC Batch:	30603		Anal	ysis Method	d: I	EPA 300.0						
QC Batch Method:	EPA 300.0		Anal	ysis Descrij	ption:	300.0 IC An	ions					
Associated Lab Sam	ples: 261984700	)1										
METHOD BLANK:	137790			Matrix: W	ater							
Associated Lab Sam	ples: 261984700	)1										
			Bla	nk l	Reporting							
Param	eter	Units	Res	ult	Limit	MDI		Analyzed	Qı	alifiers		
Sulfate		mg/L		ND	1.	0	0.017 06	6/20/19 03:4	46			
LABORATORY CON	ITROL SAMPLE:	137791										
_			Spike	LC	S	LCS	% R	ec				
Param	leter	Units	Conc.	Res	sult	% Rec	Limi	ts C	Qualifiers	_		
Sulfate		mg/L		10	9.7	97	7 9	90-110				
MATRIX SPIKE & M	ATRIX SPIKE DUP	LICATE: 1377	92		137793							
			MS	MSD								
_		2619806001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Sulfate	mg/L	243	10	10	202	202	-408	-409	90-110	0	15	E,M1
Sulfate	mg/L	243	10	10	202	202	-408	-409	90-110	0	15	E,M1
MATRIX SPIKE SAM	IPLE:	137794										
_			2619	806002	Spike	MS		MS	% Rec			
Param	eter	Units	Re	esult	Conc.	Result	%	Rec	Limits		Quali	fiers
Sulfate		mg/L		219	10		184	-348	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.



### QUALIFIERS

### Project: Plant Hammond Huffaker

Pace Project No.: 2619847

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

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

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



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Pace Project No.:	Plant Hammond Huffaker 2619847				
Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2619847001		EPA 300.0	30603		

Pace Analytical

í

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

2							1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1											ļ				_					earrow +  ear	- S6	Sampli Sampli Sampli
5	5		N. C. C.			手に対応する																				ķ	N	- <sub>A</sub>	Custod Cooler (V/V)
0					Contion	A States																4	O FINA			k	$\overline{\lambda}$	-uo pa	Receiv Ice (YN)
						O SANGAR			(N\Y) eri	Residual Chlor	2									=							9	24	TEMP
	- -					<b>新国际党团</b> 员		-				$\left\{ + \right\}$	_			-	-	- (	ò						~		3		
1	3					The second						7						=	ງ					2	Sal		20		a
						6-3-mere			·			$\neg$		_				-	Ö					5	चे	╧	Š		
	Γ		Π					$\prod$		SOL			$\Box$				_		N				D I I	016	510	-	61	ŝ	12
						11-11-11-1 11-1-11-1		+		ebitouli) Auffate		·	$\mathcal{H}$						Ħ			84 1		_	-	-	R		S
						1999 - 1999 -		_1		ebitoid9			_\						9			619	-	툇					
					bs.con			-		Boron Celcium				$\mathcal{H}$	_	_		- '					5	ŝ			4		ATES
					pacela	1996-1998				mune8				凵										2			AL.	4	ξŢ
	mos o				aniel@	Ę	) I	823	1691	teritO								1						2010	d		M		Į Į
	themo				sy.mod	528 (H	ł			lonsriteM					7									Ż	ĿŊ	4	24		7 N
	s@sou				bet	P) or		atives		N <sup>g</sup> OSO3				ľ				_	_				ġ.	3	IA		Ś		H
į	un:				ager:	327 (J		eservi		HCI					رمین حت	7							I.	20	$\mathbf{h}$	(	20		
	SCS.	Vame:		ë	ct Man	4 4		٩		EONH #OSZH					~	<u>ا/ و</u>			_		_				_ /	-	/		ā J
tion C	ntion:	npany	ress:	e Quot	e Proje	e Profi	L			Unpreserved	T				-	$\Box$							1 ME	0	3:3			ł	1
ŝ.	Atte	Ş	Add	Pac	Pac	Pac			SS COLLECTIO		16					7	<u>}_</u>							2	8	_		nure R:	ä
							ŀ		01031001	unara ionna	50					E	$\mathbf{Y}$							R	<u>19</u>			QUAN AMPLE	AMPLE
									END	⊒	5							$\left  \right $						160				E(AND to of SJ	EofS
					뤔			CTED		DATE	10110						タ	1						S	4100	•		NAM T Nam	<b>ATUR</b>
	Petty	442		22	Resarr			COLLE	L	lime	£							N					) UVN2	an C	5			and and a	SIG
	ine -			03827	puouu	5			STAR		13			-				${f L}$	$\downarrow$					মূ	- Jahr			10	
:			2	SCS1	ant Han	2				LAD LAD	10							L		<u> </u>				Å	Whe	-			
	act Inf		1	#	đ	1	┢	(fib) of a (9MOC	(G*GEKAB Cade	MATRIX CODE ( SAMPLE TYPE	0		-					_		+				٤	.9				
م	Dd Proj			a Ord	Name:			W															2	A	Ja Ja	د			
Section	Tanut T			uchai	roject	Project		3	동 같은 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	94 F 0 15											$\setminus$			F	2				
•	Ē	T	Ť			Ē		RUX	ter Water			1																	
		Signera				Н		AN AN	633288	3 ₹ 8 8 ₽	Q											$\setminus$							
	Ċ	91 UC0				Ħ					2												() ()						
					ă		$\neg$		۵	sox. unique	نا												UNCONTRACT						
				E		9			Ē	er per l 9 / , ·) ust be	3	,											NAL CC						
	iiii	Jane 1	Ner Koc	- unit	2239	μ			MP	haract A.Z. 0- Ids m	Ń																		
	amojul	eouona a			141505	)ate:			SA	One C { Sample			1	ł															_
	Client		7 7	and and a		1 Due C																							
ction A	quired		aress:	iail' io		questec	ŀ			ILEW #					6					Q		12							) of 10
Š	26	313	21	۱Ľ	ilő	12					6				JI Carl	1220	1	E		122		ا						Jayes	0110

San	ple Condition	Upon Receipt	
Face Analytical Client Name	61.A	Powere	Project #
Courier:  Fed Ex UPS USPS Clier Tracking #:	t Commercial	Pace Other _	WO#: 2619847 PM: BM Due Date: 06/21/19
Custody Seal on Cooler/Box Present: 🕂 yes		intact: yes L	CLIENT: CHICLES
Packing Material: Dubble Wrap Dubble	Bags None [	Other	
Thermometer Used83	Type of Ice: Wet	Blue None L	Date and Initials of person examining
Cooler Temperature 2.0	Biological Tissue	is Frozen: Yes No Comments:	contents: 6/19/19 11
Chain of Custody Present:		1.	
Chain of Custody Filled Out:		2	
Chain of Custody Relinquished:	TYes No N/A	3	
Sampler Name & Signature on COC:		4	
Samples Arrived within Hold Time:		5.	
Short Hold Time Analysis (<72hr):	TYes CNo DN/A	6.	That
Rush Turn Around Time Requested:	Pres No N/A	7. 48 hr.	1A].
Sufficient Volume:		8	
Correct Containers Used:	Pres INO IN/A	9.	
-Pace Containers Used:	ETes ONO ONIA		
Containers Intact:		10	
Filtered volume received for Dissolved tests		11.	
Sample Labels match COC:	-TYes INO INA	12.	
-Includes date/time/ID/Analysis Matrix:	<u> </u>		
All containers needing preservation have been checked.	Prés ONO ON/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	•EYes DNo DN/A		Last of addad
executions: VOA, coliform TOC O&G WI-DBO (water)		Initial when completed	preservative
Exceptions, von, company, roo, out, more (many)		14.	
		A 15.	
Trip Black Present:		4 16.	
Trip Blank Present		á	
Pace Trip Blank Lot # (if purchased):			
Client Notification/ Pesolution:			Field Data Required? Y / N
Person Contacted:	Date	e/Time:	
Comments/ Resolution:			
	<u></u>		
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

June 21, 2019

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

RE: Project: Plant Hammond Huffaker Pace Project No.: 2619851

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 19, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Batery Mr Damil

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

Enclosures

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




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

#### CERTIFICATIONS

Project: Plant Hammond Huffaker Pace Project No.: 2619851

#### **Atlanta Certification IDs**

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



## SAMPLE SUMMARY

Project: Plant Hammond Huffaker

Pace Project No.: 2619851

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2619851001	GWC-8	Water	06/18/19 13:46	06/19/19 09:50



# SAMPLE ANALYTE COUNT

Project:Plant Hammond HuffakerPace Project No.:2619851

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2619851001	GWC-8	EPA 6020B	CSW	2



#### ANALYTICAL RESULTS

Project: Plant Hammond Huffaker

Pace Project No.: 2619851

Sample: GWC-8	Lab ID:	2619851001	Collecte	d: 06/18/19	13:46	Received: 06/	19/19 09:50 Ma	trix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytica	I Method: EPA 6	020B Prep	aration Met	hod: EP	A 3005A			
Barium Calcium	0.17 83.7	mg/L mg/L	0.010 5.0	0.00049 0.55	1 50	06/19/19 16:00 06/19/19 16:00	06/20/19 17:33 06/20/19 17:39	7440-39-3 7440-70-2	



#### **QUALITY CONTROL DATA**

Project:	Plant Hammond H	uffaker										
Pace Project No .:	2619851											
QC Batch:	30563		Anal	ysis Metho	od: E	PA 6020B						
QC Batch Method:	EPA 3005A		Anal	ysis Descr	iption: 6	020B MET						
Associated Lab Sa	mples: 261985100	)1										
METHOD BLANK:	137554			Matrix: V	Vater							
Associated Lab Sa	mples: 261985100	01										
			Bla	nk	Reporting							
Para	neter	Units	Res	sult	Limit	MD	L	Analyzed	d Qi	ualifiers		
Barium		mg/L		ND	0.010	0.	00049	06/20/19 15	:52			
Calcium		mg/L		ND	0.10	)	0.011	06/20/19 15	:52			
LABORATORY CO	NTROL SAMPLE:	137555										
			Spike	L	CS	LCS	%	6 Rec				
Para	neter	Units	Conc.	Re	sult	% Rec	L	imits	Qualifiers			
Barium		mg/L	0	.1	0.10	10	0	80-120		_		
Calcium		mg/L		1	0.97	9	7	80-120				
MATRIX SPIKE & M	ATRIX SPIKE DUP	LICATE: 1375	56		137557							
			MS	MSD								
		2619848002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r Units	Result	Conc.	Conc.	Result	Result	% Red	c % Rec	Limits	RPD	RPD	Qual
Barium	mg/L	0.051	0.1	0.1	0.15	0.15	1	01 103	3 75-125	1	20	
Calcium	mg/L	76.5	1	1	78.8	76.5	2	35 2	2 75-125	3	20	M6

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



#### QUALIFIERS

#### Project: Plant Hammond Huffaker

Pace Project No.: 2619851

#### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

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



#### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Pace Project No.: 2619851	Project:	Plant Hammond Huffaker
	Pace Project No.:	2619851

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2619851001	GWC-8	EPA 3005A	30563	EPA 6020B	30597

Pace Analytical

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

Section A		Section B							Sect	S no	1														;		2	0	_
Required	Client Information:	Required Pr	ojact	Informat	ion: Bo	4			Atten	tion:			A B B B	a the	8						Г								]
Company.	Georgia Power - Coal Combustion Residuals	Report to:		ADranam	, Lauren F	An															T								
Address:	2480 Maner Road		5005	synec					Add	386																1.1.1			
	Allanta, GA 3U339	Purchase Or	der #	SCS	10382775				Pace	1 b n o	 			1															
	abraham@soumernco.com	Project Name		Plant Ha	mmond Re-	sample			Pace	Poje	d Man	ager.	<sup>8</sup>	tsy mc	danie	(@bao	elabs.c	Ę			83		抑却		16.11	<b>Triation</b>		17220	
Ramester Ramester	404/200-1233 1 m	Project #:	3	1859					Pace	Profil	<b>#</b>	321	AP) or	328 (	<b>F</b>						Η				Ĭ	Ă			1
																										¥			
			(Us) oj	(4%0	3	LECTED		h			Ę	Serv	ative	Ś		NIX		╉	_										
		16 200 16 200 10 0 10	sepoo pijek ees	C=C 8480=0)	START		END	T COLLECTION	St							1991									(N\Y) eni				
# Məti	One Charactor per box. With (A-2, 0-9 / , -) Cher Au Cher Sample (ds must be unique Tasue	24 A 40	) BOOD XIRTAM	SAMPLE TYPE	LTE TIM	E DATE	TIME	AMPLE TEMPA	# OF CONTAINE	POSCH	EONH	нсі	EUCSZEN HOEN	IonartteM	JertiO	eesvisnA Berium	Boron	Celcium	ebitoul 7	Sulfate	SOT				Intro IsubiseA				
	GWC-8		5	<del>ر</del> 8	18 13:1	SIMO II	, 13:4	5 19	-		-		$\vdash$			×		×						-	2				
																						-1	T	H					
													⊢					-1	+	<b>1</b>	5								
0							ļ				$\vdash$			<u> </u>	$\Box$	4	$\setminus$												
•			Ţ				181	<u>p</u>			$\left  + \right $	$\Box$	h	-		l													
P C						ð	<u>}  </u>	$\left +\right $	Ţ			<u> </u>		<u> </u>		I													
0				P	$\frac{1}{k}$	$\mathbb{A}$		<b> </b>	İ		<b> </b>													-					
			$\Box$	$\mathbb{H}$							$\left  - \right $								-Ċ	- 1	- <b>Ç</b>	-ù	- C - i	-0	- <b>-</b> - L				Ţ
G		$\left  \right $																3	5	£	N	D	ת 	Ő					
U.																									=				
Ľ																	-+	20 70							E				
<u>c</u> r													-	_		—		-	_		-	_			1	10 (10 (10 (10 (10 (10 (10 (10 (10 (10 (	100 C	and a strate	/ stretti
	ADDITION ADDITION		NAL 2	国語の	Br. Arru	· NoL								E.			VIII					e		يني 100 م	Ĩ			7	
		ere Gree	-+2	May 1	0/6	<u>annos</u>	3	Š.	3	N	7	A	ğ	2	Į.	3	đ.	Ľ	g.	ą			5					+	
		đ	A	<del>ل</del> ر لا	No les	Son (5	1000	3	5	ğ	뇟	al l	ie.	4	1	(ac)	Ś	6034	길	ĝ	1131	5-	5	0				+	
		2/2	ન્ડ્ર	V	Juntary	Geosyak	<u>)</u> 6/1	9/19	8	R		₩	nt	4	长	J		•		j.	्र मुन्स्	0	ž			•	ľ	╶┼╴	5
F		1					_				1	Ś	A	4	1	2	Ż	ム		19	19/	9	60	3	<u>S</u>	커	1		$\overline{\mathcal{A}}$
age								8	5																21	-иор	/	` S	
9 of						PHON I NOT			၂	Ę.	لر اير	Ś	님	ŀ		┢		C Clan	ŧ		ľ	,		T	게 역M:	eviso: (N)	(bote bele	ајаше (N/)	(N/) 801
10						SIGNALU	RE OI SAM	Ľ.	4	, ,	ž	3	ŝ,	W.	1	_	5	- 70 11	С	13	1/2	5		┥	31	) 9이 9년	0S 10	א גע	int V)

Sa	mple Con	dition	Upon Receipt	
Face Analytical Client Name	e: <u> </u>	<u>`</u> A	Powerc	Project #
Courier:  Fed Ex UPS USPS Clic Tracking #:	ent 🗌 Comr	nercial	Pace Other _	WO#:2619851
Custody Seal on Cooler/Box Present: Just	no 🗌 no	Seals	intact: 🚽 yes [	- PM: BM - Due Date: 06/21/13 - Clitent. Copense-CCP
Packing Material: Bubble Wrap Bubbl	e Bags 🔎	None	Other	VLIENT. BAFOWEI-OOK
Thermometer Used	Type of Ice	e: Wet	Blue None	<ul> <li>Samples on ice, cooling process has begun</li> </ul>
Cooler Temperature 2.0	Biological	Tissue	is Frozen: Yes No Comments:	Date and Initials of person examining contents: 6/19/19
Chain of Custody Present:			1.	
Chain of Custody Filled Out:		o ⊡n/A	2.	-
Chain of Custody Relinquished:		o ⊡n/A	3.	
Sampler Name & Signature on COC:			4.	
Samples Arrived within Hold Time:			5.	
Short Hold Time Analysis (<72hr):			6.	
Rush Turn Around Time Requested:			7. 48 hr.	TAT.
Sufficient Volume:			8.	
Correct Containers Used:			9.	
-Pace Containers Used:	Bres DN			
Containers Intact:		o □n/A	10.	
Filtered volume received for Dissolved tests	□Yes □N		11.	
Sample Labels match COC:		ς □n/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u> </u>	/		
All containers needing preservation have been checked.	Lettes ON	o □n/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	-ETYes DN	₀ □n/a		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)		0	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	□Yes □N	0 - DN/A	14.	
Headspace in VOA Vials ( >6mm):		0 🗖 N/A	15.	
Trio Blank Present:		0 - EIN/A	16.	
Trip Blank Custody Seals Present				
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

June 24, 2019

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

RE: Project: Plant Hammond Huffaker Pace Project No.: 2619925

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 20, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Batery Mr Damil

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

Enclosures

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





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

#### CERTIFICATIONS

Project: Plant Hammond Huffaker Pace Project No.: 2619925

#### **Atlanta Certification IDs**

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



# SAMPLE SUMMARY

Project:Plant Hammond HuffakerPace Project No.:2619925

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2619925001	GWC-6	Water	06/19/19 10:32	06/20/19 09:13



# SAMPLE ANALYTE COUNT

Project: Plant Hammond Huffaker Pace Project No.: 2619925

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2619925001	GWC-6	EPA 300.0	RLC	1



# ANALYTICAL RESULTS

Project: Plant Hammond Huffaker

Pace Project No.: 2619925

Sample: GWC-6	Lab ID:	2619925001	Collected	d: 06/19/19	9 10:32	Received: 06	5/20/19 09:13 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Sulfate	108	mg/L	10.0	0.17	10		06/24/19 13:19	14808-79-8	M1



#### **QUALITY CONTROL DATA**

Sulfate			mg/L		1290	20	1	240	-267	90-	-110 M	1	
Parar	neter		Units	26198 Re	839001 esult	Spike Conc.	MS Result		MS % Rec	% Rec Limits		Quali	fiers
MATRIX SPIKE SA	MPLE:	1	38083										
Sulfate		mg/L	108	10	10	108	108	-2	-2	90-110	0	15	E,M1
Paramete	r	Units		Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
			2610025001	MS Spiko	MSD Spiko	MS	MSD	MS	MSD	% Poc		Max	
MATRIX SPIKE & N	ATRIX SPIKE	E DUPLI	ICATE: 1380	81		138082							
Sulfate			mg/L	1	0	9.9	99	9	90-110				
Parar	neter		Units	Conc.	Res	ult	% Rec	Lim	nits (	Qualifiers	_		
LABORATORY CO	NTROL SAMP	'LE: 1	38080	Spike	LC	S	LCS	% F	Rec				
Sulfate			mg/L		ND	1.	0	0.017 0	6/21/19 20:	59			
Parar	neter		Units	Res	ult	Limit	MDI		Analyzed	Qu	alifiers		
Associated Lab Sar	npies: 2619	9925001		Blai	nk I	Reportina							
METHOD BLANK:	138079				Matrix: Wa	ater							
Associated Lab Sar	nples: 2619	9925001											
QC Batch Method:	EPA 300.0			Analy	ysis Descrip	otion:	300.0 IC Ani	ions					
QC Batch:	30672			Analy	ysis Methoo	l :c	EPA 300.0						
Pace Project No.:	2619925												
Project:	Plant Hamm	ond Huf	faker										

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



#### QUALIFIERS

#### Project: Plant Hammond Huffaker

Pace Project No.: 2619925

#### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

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

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



#### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Pace Project No.:	Plant Hammond Huffaker 2619925				
Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2619925001	GWC-6	EPA 300.0	30672		

Pace Analytica

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

ction A ction A ction A ction A ction A cution A cutients:	Ctlent Information: Georgia Power - Coal Combustion Residuals 2480 Maner Road Atlanta, CA 30339 Atlanta, CA 30339 Atraham@southernco.com (404)506-7239 Fax 10ue Date: Z- Q O Y TAT	Section B Required Project Information: Report To: Joju Abraham, Lauren Petty Copy To: Geosyntec Project Name: Plant Hammond Resample Project #: (-2\M(Q5\S))	Section C Involce Information: Attention: scstrvoices@southernco.com Company Name: Address: Pace Project Manager: betsy.modariet@pacetabs.com Pace Project Manager: betsy.modariet@pacetabs.com	Page: ] Of [
	MATRIX Damalog W Weats W Wastaw Wastaw Mathematical ID Construction (A.Z, 0.9/,) Sample Ids must be unique Taue	표 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전	Celchum Boron Boron Celchum Barlum Methanol Methanol HICI ASSO3 HICI MaCH HICI Barlum HICI ASSO3 HICI Barlum HICI ASSO3 H	Chloride Chlorine (Y/N)
	(SWC-le	2010-10-10-10-10-10-10-10-10-10-10-10-10-		
				W0#:2619925
		Dates Anderson (Gaes)	GIZON VIS N. KAHMAN	6/20/19 08/5
			Malman -	6/20/19 091 2.0 7 4 4
L .		SIGNATURE SIGNATURE OF SIGNATURE SIGNATURE SIGNATURE SIGNATURE SIGNATURE SIGNATURE SIGNATURE SIGNATURE SIGNATURE SIGNATURE	ASAMPLER DALTON ANDERSON SAMPLER DALTON ANDERSON SAMPLER DALTON ANDESON	(K/N) IUIBE CONSIGNATION CO

Sar	nple Condition	Upon Receipt		
Face Analytical Client Name	: GA PI	were	Project #	
Courier: Fed Ex UPS USPS Clier	nt 🗌 Commercial ,	Pace Other	WO#:26199	25
Custody Seal on Cooler/Box Present: ves	no Seals	intact: yes	rn: Due L Ci TENT: Gapouer-CCR	
Packing Material:  Bubble Wrap Bubble		C Other		
Thermometer Used	Type of Ice: Wet	Blue None	Samples on ice, cooling proces	ss has begun
Cooler Temperature     2.0       Temp should be above freezing to 6°C	Biological Tissue	is Frozen: Yes No Comments:	Date and Initials of perso contents: 6/20/10	n examining
Chain of Custody Present:		1.		
Chain of Custody Filled Out:		2.		
Chain of Custody Relinquished:		3.		
Sampler Name & Signature on COC:		4.		
Samples Arrived within Hold Time:		5.		
Short Hold Time Analysis (<72hr):		6.	·	
Rush Turn Around Time Requested:		7. 48hr.	TAT.	
Sufficient Volume:		8.		
Correct Containers Used:	Zer Ses ⊡No □N/A	9.		
-Pace Containers Used:				
Containers Intact:		10.		
Filtered volume received for Dissolved tests		11		
Sample Labels match COC:	-ElYes DNg DN/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u> </u>			
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		h	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	Yes -	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:		7 14.		
Headspace in VOA Vials ( >6mm):		15.		
Trip Blank Present:		16.		
Trip Blank Custody Seals Present				
Pace Trip Blank Lot # (if purchased):			· · · · · · · · · · · · · · · · · · ·	
Client Notification/ Resolution:			Field Data Required?	Y / N
Person Contacted:	Date	/Time:		
Comments/ Resolution:				
		<u> </u>		
				·····
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

July 02, 2019

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

RE: Project: Plant Hammond GW6581B Pace Project No.: 2620281

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 28, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Batery Mr Damil

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

Enclosures

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





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

#### CERTIFICATIONS

Project: Plant Hammond GW6581B Pace Project No.: 2620281

#### **Atlanta Certification IDs**

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



#### SAMPLE SUMMARY

Project: Plant Hammond GW6581B

Pace Project No.: 2620281

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2620281001	GWC-8	Water	06/27/19 14:11	06/28/19 12:20
2620281002	GWC-20	Water	06/27/19 12:56	06/28/19 12:20



# SAMPLE ANALYTE COUNT

Project:Plant Hammond GW6581BPace Project No.:2620281

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2620281001	GWC-8	EPA 6020B	CSW, KLH	2
2620281002	GWC-20	EPA 300.0	MWB	1



#### ANALYTICAL RESULTS

Project: Plant Hammond GW6581B

Pace Project No.: 2620281

Sample: GWC-8	Lab ID:	2620281001	Collecte	d: 06/27/19	9 14:11	Received: 06/	28/19 12:20 Ma	trix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	I Method: EPA 6	020B Prep	aration Met	hod: EP	A 3005A				
Barium Calcium	0.14 75.9	mg/L mg/L	0.010 1.0	0.00049 0.11	1 10	07/01/19 14:35 07/01/19 14:35	07/01/19 18:27 07/02/19 14:27	7440-39-3 7440-70-2	



## ANALYTICAL RESULTS

Project: Plant Hammond GW6581B

Pace Project No.: 2620281

Sample: GWC-20	Lab ID:	2620281002	Collected	d: 06/27/19	9 12:56	Received: 06	6/28/19 12:20 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Sulfate	46.0	mg/L	1.0	0.017	1		06/29/19 06:51	14808-79-8	



#### **QUALITY CONTROL DATA**

Project:	Plant Hammond G	W6581B										
Pace Project No.:	2620281											
QC Batch:	31193		Anal	ysis Meth	od: E	PA 6020B						
QC Batch Method:	EPA 3005A		Anal	ysis Desc	ription: 6	020B MET	-					
Associated Lab Sar	mples: 262028100	01										
METHOD BLANK:	140431			Matrix: N	Water							
Associated Lab Sar	mples: 262028100	01										
			Bla	nk	Reporting							
Para	meter	Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Barium		mg/L		ND	0.010	0.	00049	07/01/19 18	:10			
Calcium		mg/L		ND	0.10	)	0.011	07/01/19 18	:10			
LABORATORY CO	NTROL SAMPLE:	140432										
			Spike	L	CS	LCS	%	6 Rec				
Para	meter	Units	Conc.	Re	esult	% Rec	L	imits	Qualifiers			
Barium		mg/L	0	.1	0.098	9	8	80-120				
Calcium		mg/L		1	0.96	9	6	80-120				
MATRIX SPIKE & M	MATRIX SPIKE DUP	LICATE: 1404	33		140434							
			MS	MSD								
		2620281001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r Units	Result	Conc.	Conc.	Result	Result	% Re	c % Rec	Limits	RPD	RPD	Qual
Barium	mg/L	0.14	0.1	0.1	0.25	0.26	1	14 120	75-125	2	20	
Calcium	mg/L	75.9	1	1	77.2	78.0	1	29 214	75-125	1	20	

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



#### **QUALITY CONTROL DATA**

Project:	Plant Hammond G	W6581B										
Pace Project No.:	2620281											
QC Batch:	31128		Anal	ysis Metho	d:	EPA 300.0						
QC Batch Method:	EPA 300.0		Anal	ysis Descri	ption:	300.0 IC Ani	ions					
Associated Lab Sar	mples: 26202810	02										
METHOD BLANK:	140175			Matrix: W	ater							
Associated Lab Sar	mples: 26202810	02										
			Bla	nk	Reporting							
Parar	neter	Units	Res	ult	Limit	MDI		Analyzed	Qu	alifiers		
Sulfate		mg/L		0.023J	1.	0	0.017 06	6/28/19 23::	35			
LABORATORY CO	NTROL SAMPLE:	140176										
Parar	neter	Units	Spike Conc.	LC Res	:S sult	LCS % Rec	% R Limi	ec ts C	Qualifiers			
Sulfate		mg/L		10	10.1	101	1 9	90-110		_		
MATRIX SPIKE & N	ATRIX SPIKE DUP	LICATE: 1401	77		140178							
			MS	MSD								
Paramete	r Units	2620136001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	17.6	10	10	28.3	27.9	107	103	90-110	1	15	
MATRIX SPIKE SA	MPLE:	140179										
			2620	136002	Spike	MS		MS	% Rec			
Parar	neter	Units	Re	esult	Conc.	Result	%	Rec	Limits		Qualif	iers
Sulfate		mg/L		17.5	10	2	27.4	99	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.



#### QUALIFIERS

#### Project: Plant Hammond GW6581B

Pace Project No.: 2620281

#### 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.



#### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:Plant Hammond GW6581BPace Project No.:2620281

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2620281001	GWC-8	EPA 3005A	31193	EPA 6020B	31202
2620281002	GWC-20	EPA 300.0	31128		

Pace Analytical

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

-			のないの方で		AND THE REAL PROPERTY OF					,	く											loNs		×	$ \downarrow$		58(C	(X/N) Samt Samt
ŏ			ancyl		UO																	LigNop)a		거	·	_	р Арс	(N/A)
-			iton/Ag		GA							$\int$										BANN		<u>&gt;</u>	-		no bevi	Recei
age :			a Reguli		222		<u>195 (3)</u>	(N/Y) en	Residual Chlori	<	2																О щ d	TEMF
			A Sold Street in			Example							$\downarrow$			_					_	ME C	ŋ	2			a este a	$\square$
			明國語			<b>WAR</b>							$\uparrow$					_					5	ব্	-			61
	Γ					ia Fita						_										DATE	28.1	281	>			21
						d Analys					-												ġ.	Q	<u>}</u>			8
					Ĕ	questor	F	e)te	840 300.0 Suff		X			+														Signed
					elabs.co	ंाहे	+	uioleO bris mu	EPA 6020 Bariu	X				7								ATION	2	3			C	DATE
					iel@pac		N/A		SOBYIGNA MOM 0503 A93					$\square$							_	(1) ATTEN	2	Lew			Š	
					A /H, fb				Other											_		RTED BY	F	4	3		١Ę	Š
					betsy		tives		N <sup>8</sup> 58503					0	1							AGGE	d	le l			4	
Ë					ger: 227 (AF		serva								H								${\checkmark}$	S.			- -	<i>K</i>
rmatio		ame:			t Mana		Pre		EONH	1				7	$\Box$									? ?			Ð	1
on C ce Info	tion:	any N	SS:	Quote	Projec				H5SO4 Unpreserved					1	11	$\left  \right $						NE .	10				R	N L
Secti	Atten	Com	Addre	Pace	Pace			SE	# OF CONTAINEP	-	_				10	T							:11			Little .	r	No.
							1	T COLLECTION	A 9M9T 3J9MA2	119	0					-+				_		Г.	UAZ			GNAT	IPLER	<b>D</b> ER
								g			ذ:											jų.	50			ANDIS	of SAN	of SAN
							CTED	u u	DATE	17	111					X	A						(J.			WAWE	r Name	ATURE
							COLLE(		E N	00:	3.					$\Box$	X					LATION	Sol Sol			<b>KIPLER</b>	PRIN	SIGN
ï					- Dumund	5	-	START	⊢ ———	1 V L 4	14					1	$\dashv$					NI QUE	Jer Jer	2		A.		
ormatic	raham				ant Har	2			DAT	Ľ Ľ	(e/2											SHED B	Ð					
iect Inf	Joiu Ab			# 19			(neit) (9MO)	See valid codes	) BODD XIATAM SAMPLE TYPE	2	5							$\mathbb{H}$				IUNOU	þ			I		
n B red Pro	ë	ĕ		Ise Ord	Name		au Vi															B)	) al					
Sectio Repui	Report	Copy		Purch	Project			5 تە ⊾يخ ق م يې چې تې	1240F										$\setminus$					•				
	sie sie							Xrinking W Vater Vaste Wat Product SoutSolid Xi	Vipe Vipe Tissue										$\setminus$								l	
	Residu				+				/320-													1				8		
	n istion				Ê				en	7	2	ł								$\setminus$		NT8)				0		
				F	Ľ	┢		Q	er box. -) De uniq	Ĩ.										$\setminus$		COMME				20		
È				nco.cor		d		PLE	acter pi 0-9 / , must t		2											NONAL				2		
matio	and air	Maner		souther	06-72	1		AM	e Chara (A-Z, ple lds	1	1										$\setminus$	(ada)						
ant Info	e c	2480	1339	ham@	(404)			S	Sam	$\left \right ^{-}$	1															Ö		202
n A ed Clie	2		GA 3(	Jabra		sied DI	<u> </u>			p-9-				1000	 		P 1	Ŧ Ţ		·						M		36
Sectio	Como	Addres	Atlanta	Email:	Phone	Reque			# WELL			Ô	<b>.</b>	Û	ø	2	<b>.</b>	6	9	5	12					Page	11 of	12

			<b>LIO#:26</b> 2	20281
Sa Sa	mple Condition L	Jpon Receipt		Due Date: 07/02/19
Face Analytical Client Name	e: CAV		CLIENT: GRPowe	r-CCR
	- only	/		
Courier:  Fed Ex UPS USPS Clie Tracking #:	ent Commercial	Pace Other	Optional Proj. Due Da	ite:
Custody Seal on Cooler/Box Present:  ves	no Seals in	itact: 🔄 yes 📋	no	북 (화학물왕) 분야 (김 사상) : 한 - 이 - 아이지 아이지
Packing Material: Bubble Wrap Bubbl	e Baos R None	Other		
Thermometer Used	Type of Ice: Wet	Blue None	Samples on ice, cooling	process has begun
Cooler Temperature	Biological Tissue is	Frozen: Yes No	Date and Initials of contents	person examining
Chain of Custody Present:	Yes DNo DN/A 1	•		
Chain of Custody Filled Out:	Pres DNO DN/A 2	-	· · · · · · · · · · · · · · · · · · ·	
Chain of Custody Relinquished:				
Sampler Name & Signature on COC:				
Samples Arrived within Hold Time:				
Short Hold Time Analysis (<72hr):				
Rush Turn Around Time Requested:	TTES DNO DN/A 7	4-Shr	TAT	
Sufficient Volume:		)	· ·	
Correct Containers Used:	Tres DNO DN/A 9	).		
-Pace Containers Used:		· · · · · · · · · · · · · · · · · · ·		
Containers Intact:		0.		
Filtered volume received for Dissolved tests	Yes DNo ZN/A 1	1		
Sample Labels match COC:	Pres INO IN/A 1	2.		
-Includes date/time/ID/Analysis Matrix:	<u> </u>	. <u>.</u>		
All containers needing preservation have been checked.		3.		
All containers needing preservation are found to be in compliance with EPA recommendation.				
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)		ompleted	preservative	
Samples checked for dechlorination:		4.		
Headspace in VOA Vials ( >6mm):	□Yes □No □NA 1	5.		
Trip Blank Present:	□Yes □No DAVA 1	6.		
Trip Blank Custody Seals Present	□Yes □No ØN/A			
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution			Field Data Required?	Y / N
Person Contacted:	Date/Ti	me:		
Comments/ Resolution:				
Project Manager Review:			Date:	
			When each to the North C	arolina DEHNR

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



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

December 17, 2019

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

RE: Project: Plant Hammond GW6581 Pace Project No.: 2623793

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 01, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Kein Hung

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

Enclosures

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





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

#### CERTIFICATIONS

Project: Plant Hammond GW6581 Pace Project No.: 2623793

#### Pace Analytical Services Atlanta

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



#### SAMPLE SUMMARY

Project: Plant Hammond GW6581 Pace Project No.: 2623793

Lab ID Sample ID Matrix **Date Collected Date Received** 2623793001 GWA-2 09/30/19 14:40 10/01/19 12:05 Water 2623793002 GWA-1 Water 09/30/19 11:40 10/01/19 12:05 2623793003 GWA-3 Water 10/01/19 12:05 09/30/19 14:59 2623793004 GWA-4 Water 09/30/19 16:08 10/01/19 12:05 2623793005 **GWA-11** Water 09/30/19 16:45 10/01/19 12:05



# SAMPLE ANALYTE COUNT

Project:Plant HammondGW6581Pace Project No.:2623793

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2623793001	GWA-2	EPA 6020B	CSW	17
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623793002	GWA-1	EPA 6020B	CSW	17
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623793003	GWA-3	EPA 6020B	CSW	17
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623793004	GWA-4	EPA 6020B	CSW	17
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2623793005	GWA-11	EPA 6020B	CSW	17
		SM 2540C	ALW	1
		EPA 300.0	MWB	3



#### ANALYTICAL RESULTS

#### Project: Plant Hammond GW6581

Pace Project No.: 2623793

Sample: GWA-2	Lab ID:	2623793001	Collecte	ed: 09/30/19	9 14:40	Received: 10/	01/19 12:05 Ma	atrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual		
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	thod: El	 PA 3005A					
Antimony	ND	mg/L	0.0030	0.00027	1	10/03/19 17:28	10/05/19 17:08	7440-36-0			
Arsenic	ND	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 17:08	7440-38-2			
Barium	0.17	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 17:08	7440-39-3			
Beryllium	ND	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 17:08	7440-41-7			
Boron	0.084	mg/L	0.040	0.0049	1	10/03/19 17:28	10/07/19 14:59	7440-42-8			
Cadmium	ND	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 17:08	7440-43-9			
Calcium	44.6	mg/L	5.0	0.55	50	10/03/19 17:28	10/05/19 17:14	7440-70-2			
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 17:08	7440-47-3			
Cobalt	ND	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 17:08	7440-48-4			
Copper	ND	mg/L	0.025	0.00019	1	10/03/19 17:28	10/05/19 17:08	7440-50-8			
Lead	ND	mg/L	0.0050	0.000046	1	10/03/19 17:28	10/05/19 17:08	7439-92-1			
Nickel	ND	mg/L	0.010	0.00031	1	10/03/19 17:28	10/05/19 17:08	7440-02-0			
Selenium	ND	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 17:08	7782-49-2			
Silver	ND	mg/L	0.010	0.00028	1	10/03/19 17:28	10/05/19 17:08	7440-22-4			
Thallium	ND	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 17:08	7440-28-0			
Vanadium	ND	mg/L	0.010	0.00071	1	10/03/19 17:28	10/05/19 17:08	7440-62-2			
Zinc	0.0043J	mg/L	0.010	0.0015	1	10/03/19 17:28	10/05/19 17:08	7440-66-6	В		
2540C Total Dissolved Solids	Analytical Method: SM 2540C										
Total Dissolved Solids	242	mg/L	10.0	10.0	1		10/04/19 20:01				
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0								
Chloride	3.0	mg/L	1.0	0.024	1		10/09/19 01:48	16887-00-6			
Fluoride	0.14J	mg/L	0.30	0.029	1		10/09/19 01:48	16984-48-8			
Sulfate	17.5	ma/L	1.0	0.017	1		10/09/19 01:48	14808-79-8	M1		


### Project: Plant Hammond GW6581

Pace Project No.: 2623793

Sample: GWA-1	Lab ID:	2623793002	Collecte	ed: 09/30/1	9 11:40	Received: 10/	01/19 12:05 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Me	thod: El	PA 3005A			-
Antimony	ND	mg/L	0.0030	0.00027	1	10/03/19 17:28	10/05/19 17:20	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 17:20	7440-38-2	
Barium	0.042	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 17:20	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 17:20	7440-41-7	
Boron	0.025J	mg/L	0.040	0.0049	1	10/03/19 17:28	10/05/19 17:20	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 17:20	7440-43-9	
Calcium	17.6	mg/L	5.0	0.55	50	10/03/19 17:28	10/05/19 17:25	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 17:20	7440-47-3	
Cobalt	0.00042J	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 17:20	7440-48-4	
Copper	ND	mg/L	0.025	0.00019	1	10/03/19 17:28	10/05/19 17:20	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/03/19 17:28	10/05/19 17:20	7439-92-1	
Nickel	0.00037J	mg/L	0.010	0.00031	1	10/03/19 17:28	10/05/19 17:20	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 17:20	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/03/19 17:28	10/05/19 17:20	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 17:20	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/03/19 17:28	10/05/19 17:20	7440-62-2	
Zinc	0.0032J	mg/L	0.010	0.0015	1	10/03/19 17:28	10/05/19 17:20	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	126	mg/L	10.0	10.0	1		10/04/19 20:01		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.4	mg/L	1.0	0.024	1		10/09/19 02:09	16887-00-6	
Fluoride	0.11J	mg/L	0.30	0.029	1		10/09/19 02:09	16984-48-8	
Sulfate	4.9	ma/L	1.0	0.017	1		10/09/19 02:09	14808-79-8	



### Project: Plant Hammond GW6581

Pace Project No.: 2623793

Sample: GWA-3	Lab ID:	2623793003	Collected: 09/30/19 14:59			9 Received: 10/01/19 12:05 Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
		Mathad: EDA							
6020B MET ICPMS	Analytical	Method: EPA	OUZUB Pie	paration me	Inou: EI	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/03/19 17:28	10/05/19 18:11	7440-36-0	
Arsenic	0.00058J	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 18:11	7440-38-2	
Barium	0.14	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 18:11	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 18:11	7440-41-7	
Boron	0.17	mg/L	0.040	0.0049	1	10/03/19 17:28	10/07/19 15:05	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 18:11	7440-43-9	
Calcium	74.7	mg/L	5.0	0.55	50	10/03/19 17:28	10/05/19 18:17	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 18:11	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 18:11	7440-48-4	
Copper	ND	mg/L	0.025	0.00019	1	10/03/19 17:28	10/05/19 18:11	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/03/19 17:28	10/05/19 18:11	7439-92-1	
Nickel	ND	mg/L	0.010	0.00031	1	10/03/19 17:28	10/05/19 18:11	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 18:11	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/03/19 17:28	10/05/19 18:11	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 18:11	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/03/19 17:28	10/05/19 18:11	7440-62-2	
Zinc	0.0045J	mg/L	0.010	0.0015	1	10/03/19 17:28	10/05/19 18:11	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	475	mg/L	10.0	10.0	1		10/04/19 20:01		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	4.1	mg/L	1.0	0.024	1		10/09/19 02:29	16887-00-6	
Fluoride	0.15J	mg/L	0.30	0.029	1		10/09/19 02:29	16984-48-8	
Sulfate	118	ma/L	10.0	0.17	10		10/08/19 15:33	14808-79-8	



### Project: Plant Hammond GW6581

Pace Project No.: 2623793

Sample: GWA-4	Lab ID:	2623793004	Collected: 09/30/19 16:08			8 Received: 10/01/19 12:05 Matrix: Water			
Parameters	Results	Linits	Report	MDI	DF	Prenared	Analyzed	CAS No	Qual
		01110							
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/03/19 17:28	10/05/19 18:23	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 18:23	7440-38-2	
Barium	0.051	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 18:23	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 18:23	7440-41-7	
Boron	0.11	mg/L	0.040	0.0049	1	10/03/19 17:28	10/07/19 15:10	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 18:23	7440-43-9	
Calcium	78.3	mg/L	5.0	0.55	50	10/03/19 17:28	10/05/19 18:28	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 18:23	7440-47-3	
Cobalt	0.00079J	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 18:23	7440-48-4	
Copper	ND	mg/L	0.025	0.00019	1	10/03/19 17:28	10/05/19 18:23	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/03/19 17:28	10/05/19 18:23	7439-92-1	
Nickel	0.0013J	mg/L	0.010	0.00031	1	10/03/19 17:28	10/05/19 18:23	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 18:23	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/03/19 17:28	10/05/19 18:23	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 18:23	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/03/19 17:28	10/05/19 18:23	7440-62-2	
Zinc	0.0059J	mg/L	0.010	0.0015	1	10/03/19 17:28	10/05/19 18:23	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	455	mg/L	10.0	10.0	1		10/04/19 20:02		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	7.5	mg/L	1.0	0.024	1		10/09/19 02:50	16887-00-6	
Fluoride	0.17J	mg/L	0.30	0.029	1		10/09/19 02:50	16984-48-8	
Sulfate	117	ma/L	10.0	0.17	10		10/08/19 15:55	14808-79-8	



### Project: Plant Hammond GW6581

Pace Project No.: 2623793

Sample: GWA-11	Lab ID:	2623793005	Collected: 09/30/19 16:45			5 Received: 10/01/19 12:05 Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	thod: Ef	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/03/19 17:28	10/05/19 18:34	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/03/19 17:28	10/05/19 18:34	7440-38-2	
Barium	0.030	mg/L	0.010	0.00049	1	10/03/19 17:28	10/05/19 18:34	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/03/19 17:28	10/05/19 18:34	7440-41-7	
Boron	0.039J	mg/L	0.040	0.0049	1	10/03/19 17:28	10/05/19 18:34	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/03/19 17:28	10/05/19 18:34	7440-43-9	
Calcium	19.6	mg/L	5.0	0.55	50	10/03/19 17:28	10/05/19 18:40	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/03/19 17:28	10/05/19 18:34	7440-47-3	
Cobalt	0.00054J	mg/L	0.0050	0.00030	1	10/03/19 17:28	10/05/19 18:34	7440-48-4	
Copper	ND	mg/L	0.025	0.00019	1	10/03/19 17:28	10/05/19 18:34	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/03/19 17:28	10/05/19 18:34	7439-92-1	
Nickel	0.0017J	mg/L	0.010	0.00031	1	10/03/19 17:28	10/05/19 18:34	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/03/19 17:28	10/05/19 18:34	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/03/19 17:28	10/05/19 18:34	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/03/19 17:28	10/05/19 18:34	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/03/19 17:28	10/05/19 18:34	7440-62-2	
Zinc	0.0040J	mg/L	0.010	0.0015	1	10/03/19 17:28	10/05/19 18:34	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	134	mg/L	10.0	10.0	1		10/04/19 20:02		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.5	mg/L	1.0	0.024	1		10/09/19 03:11	16887-00-6	
Fluoride	0.099J	mg/L	0.30	0.029	1		10/09/19 03:11	16984-48-8	
Sulfate	11.5	ma/L	1.0	0.017	1		10/09/19 03:11	14808-79-8	



Project: Plant Hammond GW6581

Pace Project No.: 2623793

QC Batch:	36434	4	Analysis Method:		EPA 6020B
QC Batch Method:	EPA 3	3005A	Analysis Description	n:	6020B MET
Associated Lab Samp	oles:	2623793001, 2623793	002, 2623793003, 262379300	94, 2623	3793005

### METHOD BLANK: 164547

Matrix: Water

		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/05/19 14:53	
Arsenic	mg/L	ND	0.0050	0.00035	10/05/19 14:53	
Barium	mg/L	ND	0.010	0.00049	10/05/19 14:53	
Beryllium	mg/L	ND	0.0030	0.000074	10/05/19 14:53	
Boron	mg/L	ND	0.040	0.0049	10/05/19 14:53	
Cadmium	mg/L	ND	0.0025	0.00011	10/05/19 14:53	
Calcium	mg/L	ND	0.10	0.011	10/05/19 14:53	
Chromium	mg/L	ND	0.010	0.00039	10/05/19 14:53	
Cobalt	mg/L	ND	0.0050	0.00030	10/05/19 14:53	
Copper	mg/L	ND	0.025	0.00019	10/05/19 14:53	
Lead	mg/L	ND	0.0050	0.000046	10/05/19 14:53	
Nickel	mg/L	ND	0.010	0.00031	10/05/19 14:53	
Selenium	mg/L	ND	0.010	0.0013	10/05/19 14:53	
Silver	mg/L	ND	0.010	0.00028	10/05/19 14:53	
Thallium	mg/L	ND	0.0010	0.000052	10/05/19 14:53	
Vanadium	mg/L	ND	0.010	0.00071	10/05/19 14:53	
Zinc	mg/L	0.013	0.010	0.0015	10/05/19 14:53	

### LABORATORY CONTROL SAMPLE: 164548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ma/L	0.1	0.10	101	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Calcium	mg/L	1	0.99	99	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Copper	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Nickel	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.099	99	80-120	
Silver	mg/L	0.1	0.10	103	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	
Vanadium	mg/L	0.1	0.099	99	80-120	
Zinc	mg/L	0.1	0.11	109	80-120	

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



Project: Plant Hammond GW6581

Pace Project No.: 2623793

MATRIX SPIKE & MATRIX SPI	KE DUPL	ICATE: 1645	49		164550							
			MS	MSD								
		2623793002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L	 ND	0.1	0.1	0.10	0.098	102	98	75-125	4	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.098	102	98	75-125	4	20	
Barium	mg/L	0.042	0.1	0.1	0.14	0.14	103	99	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.10	0.099	103	99	75-125	4	20	
Boron	mg/L	0.025J	1	1	1.1	1.0	103	100	75-125	4	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20	
Calcium	mg/L	17.6	1	1	19.5	20.2	188	260	75-125	4	20	M6
Chromium	mg/L	ND	0.1	0.1	0.11	0.10	106	101	75-125	5	20	
Cobalt	mg/L	0.00042J	0.1	0.1	0.10	0.097	102	96	75-125	6	20	
Copper	mg/L	ND	0.1	0.1	0.10	0.099	104	99	75-125	5	20	
Lead	mg/L	ND	0.1	0.1	0.10	0.10	104	100	75-125	4	20	
Nickel	mg/L	0.00037J	0.1	0.1	0.11	0.098	105	98	75-125	7	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.098	101	98	75-125	4	20	
Silver	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	104	100	75-125	4	20	
Vanadium	mg/L	ND	0.1	0.1	0.11	0.10	106	100	75-125	5	20	
Zinc	mg/L	0.0032J	0.1	0.1	0.11	0.10	103	98	75-125	5	20	

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



Project: Pace Project No :	Plant Hammond 2623793	GW6581								
QC Batch:	36519		Analysis M	Aethod:	SM 2540C					
QC Batch Method:	SM 2540C		Analysis [	Description:	2540C Total I	Dissolve	ed Solids			
Associated Lab Sar	mples: 26237930	001, 2623793002,	2623793003, 26	623793004, 262	23793005					
LABORATORY CO	NTROL SAMPLE:	165036								
			Spike	LCS	LCS	%	Rec			
Para	neter	Units	Conc.	Result	% Rec	Lir	nits	Qu	alifiers	
Total Dissolved Sol	ds	mg/L	400	409	102		84-108			
SAMPLE DUPLICA	TE: 165037									
			2623748003	B Dup			Max			
Parar	neter	Units	Result	Result	RPD		RPD		Qualifiers	
Total Dissolved Sol	ids	mg/L	44	12 2	158	4		10		
SAMPLE DUPLICA	TE: 165038									
			2623793003	B Dup			Max			
Para	neter	Units	Result	Result	RPD		RPD		Qualifiers	
Total Dissolved Sol	ids	mg/L	47	75 4	197	5		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.



Qualifiers

Qual

### **QUALITY CONTROL DATA**

Project: Pace Project No.:	Plant Hammon 2623793	d GW6581									
QC Batch:	36584		Analy	ysis Metho	d:	EPA 300.0					
QC Batch Method:	EPA 300.0		Anal	ysis Descri	ption:	300.0 IC An	ions				
Associated Lab Sar	nples: 26237	93001, 2623793002,	262379300	03, 262379	3004, 2623	3793005					
METHOD BLANK:	165271			Matrix: W	ater						
Associated Lab Sar	nples: 262379	93001, 2623793002,	262379300	03, 262379	3004, 2623	3793005					
			Blai	nk	Reporting						
Parar	neter	Units	Res	ult	Limit	MD	L	Analyze	d Qu	Jalifiers	;
Chloride		mg/L		0.030J	1.	.0	0.024	10/09/19 0	0:04		
Fluoride		mg/L		ND	0.3	80	0.029	10/09/19 0	0:04		
Sulfate		mg/L		ND	1.	.0	0.017	10/09/19 0	0:04		
		- 165272									
			Spike	LC	s	LCS	%	Rec			
Parar	neter	Units	Conc.	Res	sult	% Rec	L	imits	Qualifiers		
Chloride		mg/L	1	10	10.4	10	4	90-110		-	
Fluoride		mg/L	1	10	10.7	10	7	90-110			
Sulfate		mg/L	1	10	10.4	10	4	90-110			
MATRIX SPIKE & M	ATRIX SPIKE	UPLICATE: 1652	273		165274						
			MS	MSD							
		2623792001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max
Paramete	r U	nits Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD
Chloride	m	g/L 45.9J	1000	1000	1090	1100	1(	05 10	90-110	1	15
Fluoride	m	g/L 3.2J	1000	1000	1090	1100	10	09 10	90-110	1	15
Sulfate	m	g/L 880	1000	1000	1860	1860	ę	98 9	90-110	0	15
MATRIX SPIKE SA	MPLE:	165275									
			2623	793001	Spike	MS		MS	% Rec	;	
Parar	neter	Units	Re	esult	Conc.	Result		% Rec	Limits		Quali
Chloride		mg/L		3.0	10		13.4	103	3 90	-110	
Fluoride		mg/L		0.14J	10		10.9	108	3 90	-110	
Sulfate		mg/L		17.5	10	:	26.4	89	9 90	-110 N	11

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

### **REPORT OF LABORATORY ANALYSIS**

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



### QUALIFIERS

### Project: Plant Hammond GW6581

Pace Project No.: 2623793

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

- B Analyte was detected in the associated method blank.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond GW6581

Pace Project No.: 2623793

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623793001	GWA-2	EPA 3005A	36434	EPA 6020B	36455
2623793002	GWA-1	EPA 3005A	36434	EPA 6020B	36455
2623793003	GWA-3	EPA 3005A	36434	EPA 6020B	36455
2623793004	GWA-4	EPA 3005A	36434	EPA 6020B	36455
2623793005	GWA-11	EPA 3005A	36434	EPA 6020B	36455
2623793001	GWA-2	SM 2540C	36519		
2623793002	GWA-1	SM 2540C	36519		
2623793003	GWA-3	SM 2540C	36519		
2623793004	GWA-4	SM 2540C	36519		
2623793005	GWA-11	SM 2540C	36519		
2623793001	GWA-2	EPA 300.0	36584		
2623793002	GWA-1	EPA 300.0	36584		
2623793003	GWA-3	EPA 300.0	36584		
2623793004	GWA-4	EPA 300.0	36584		
2623793005	GWA-11	EPA 300.0	36584		

Page Aralytical

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

Image: Contraction of the contract of	Section A		Section B	Section C	
	Required C	ilient Information:	Required Project Information:	Invoice Information:	Page: 1 Of 5
	Company:	Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham	Attention: scsinvoices@southernco.com	
	Address:	2480 Maner Road	Copy To: Lauren Petty, Geosyntec	Company Name:	
	Atlanta, GA	30339		Address:	Regulation//Agency
	Email: jat	oraham@southernco.com	Purchase Order #: SCS10382775	Pace Quote:	
Incrementation R. A. Accord         Incrementation R. A. Accord         Incrementation R. A. Accord         Incrementation R. A. Accord         Incrementation R. A. Accord         Incrementation R. Accord	hone:	(404)506-7239 Fax:	Project Name: Plant Hammond	Pace Project Manager: betsy.mcdaniel@pacelabs.com,	Sizie/(Lobelton
	Requested (	Due Date: 51a notazi TAI	Project #: Cっしんじまい	Pace Profile #: 328 (Huft)	GA
Image: Solution of the solution of the	ŀ			Requested Attributes	(hered (r(n))
Construction         Construction		матнх	COMP) COMP) COLLECTED	Preservatives	
Основните или составляетие		SAMPLE ID Southorn With Wate Wate Wate Wate Wate Wate Wate Wate	د الله الله الله الله الله الله الله الل	T COLLECTIOI 15 15 16 16 16 16 16 16 10 10 10 10 10 10 10 10 10 10 10 10 10	(N/A) 0
6 (MA - 2       k <sup>3</sup> /6 (3/3) (1/3) (3/3) (1/3) (3/3) (1/1) (1/	# MƏTI	One Character per box. Woo (A-Z, 0-9 /, -) Air Semple Ids must be unique Trsue	A C A A A A A A A A A A A A A A A A A A	A SamPLE TEMP A somPLE TEMP A b OF CONTAINEE H2SO4 H2SO4 H0O3 H4CI MaDhanol Mathanol	ninolrtO IsubiseR
2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         2 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         3 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         3 GUA-1       2 GUA-1       2 GUA-1       2 GUA-1         3 GUA-1		3WA-2	6-21 6 9/30 1430 9/30 1	440 k3 Z k k k k k k k k k k k k k k k k k	~
	2 (	1-VM5	4-1 6 9/30 11 26 9/30 11	(40 20 21 1 1 1 7 7 9 7 9 9	
	9				
Bit International Internatione Internatione International International Internation	4,				
1     1 <th>6</th> <td></td> <td></td> <td></td> <td></td>	6				
Bit         Description         Descripro <thdescription< th=""> <thdescr< td=""><th>2</th><td></td><td>(a) a/30</td><td></td><td></td></thdescr<></thdescription<>	2		(a) a/30		
Bit         Bit <th>(8)</th> <td></td> <td></td> <td></td> <td></td>	(8)				
Total         Total <th< td=""><th>9</th><td></td><td></td><td></td><td></td></th<>	9				
Mile         Main Propriet         Main Propriet <th>10</th> <td></td> <td></td> <td></td> <td></td>	10				
Table         Table <th< td=""><th>μ</th><td></td><td></td><td></td><td></td></th<>	μ				
ADDITIONALIZED         INTEL         ADDITIONALIZED         INTEL         ADDITIONALIZED         INTEL         ADDITIONALIZED         AD	12				
Gentletous       Geotletous       Geotletous <th></th> <td>ADDITIONAL COMMENTS</td> <td>RELINQUISHED BY/AFFILIATON</td> <td>DATE THE ACCENTED BY// AFFLATION DATE</td> <td>E TIRE SAMPLE CHIDMONS</td>		ADDITIONAL COMMENTS	RELINQUISHED BY/AFFILIATON	DATE THE ACCENTED BY// AFFLATION DATE	E TIRE SAMPLE CHIDMONS
Molth     2623793     Multh     27551     Y     Y       Molth     2623793     8484464     6     7     7     7       Molth     12623793     848466     6     6     7     7     7       Signation     10,010     10,010     10,010     10,010     10,010     10,010       Signature     61,00     0,010     0,010     0,010     0,010     10,010			det auso geo 3	1/30 1900 Jasian Warnen Arco 10/1	(Z; 0/ b)
MO#:2623793         раниналийн кар сради с с с с с с с с с с с с с с с с с с с				Colande Hand - 10/1	120561Y Y Y
MUTH · LOLOJ 200     Statutes (Mitter Andrease An	Page	04.050202			
6 10 10 10 10 10 10 10 10 10 10 10 10 10	- 16 c	CC/C707 · #0	SAUDUERINAGEAN	psimilar and the second second second second second second second second second second second second second sec	
	of 19		PRINT Name of S	SAMPLER: CKad RUJJO	۱۹۶۶ ۱۹ ۱۹ ۱۹ ۱۹ ۱۹ ۱۹ ۱۹ ۱۹ ۱۹
	<b></b>		SIGNATURE of S	SAMPLER: Da / RULORD DATE Signed: 7/21	Entry     Entry  Entry     En

Pace Analytical

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

ain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.	Section C
The Chain-	tion B

Section A		Section B					Section C									L				
Required C	lient Information:	Required P	roject Information				Invoice Inf	ormation:								ď	: ege	て	ō	2
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham			1	Attention:	scsinvo	ices @ sout	hernco.co	ε									
Address:	2480 Maner Road	Copy To:	Lauren Petty, Ge	osyntec			Company P	lame:												
Atlanta, GA	30339						Address:										Regulat	orv Apen	1. S.	
Email: jab	braham@southernco.com	Purchase O	rder #: SCS10:	382775			Pace Quot													
Phone:	(404)506-7239 Fax:	Project Nam	e: Plant Hamn	puot			Pace Proje	ct Manage	r: bets	y.mcdanie	d@pacet	abs.com,					Stata/	Location		
Requested L	Due Date: Spurdonal - TAT	Project #:	GW65BI				Pace Profil	e#: 32	8 (Huff)									GA		
							-					Hadu	ated Ar		W/N peus	() ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( (				
	LATEN VIEW	CODE	(191 0) (191 0)	COLLE	CTED			Prese	irvatives		Z N/k	NN	NN	N _N						
	SAMPLE ID Sussed	Valer DW Iter WW SP WW	See valid codes	LART	END		S				<b>1091</b> c, Barium	Calcium fladoD ,muir	ckel Thailium				(N/A) ə			
# MƏTI	One Character per box. Whe (A-Z, 0-9 /, .) Ar Semple Ids must be unique Insue	AR AG	MATRIX CODE (( SAMPLE TYPE ( DA	TIME	DATE	TM A MARLE TEMP A SAMPLE TEMP A	# OF CONTRINER Unpreserved		NªSS2O3 NªOH	Methanol Other	<b>SOBYIERA</b>	Beryllium, Boron. Cadmium, Chron	Copper, Lead, Ni Selenium, Silver,	Vanadium, Zinc TDS, CI, F, SO4			Residual Chlorin			~
- <sup>1</sup>	GWA-3		× 6 9/20/2	1421	التعارد ال	1,55 24	12	1			١Y.	γγ	γγ	γY			2			r
2	GWA-4		4/2/1 9 5	15:59	1/20//	208 Å	21	1			>	7 7	77	77			2			17
8																		\		
4																				
Ū			` 										H	$\mathbb{H}$			·			
.9							(	, Coc	919	Ŧ							 			
μ.						Ø											! 			
8				Z	N								<b> </b>				 			
6																	1			
10																	 			
UI.																				
12																				
	ADDITIONAU OOMAEKTB		REUNAUISHEP/BY	//AFFILIATIO		DATE	TIME		AGO!	EPTED 84/	AFFILIA	NO		DATE	ш Ш	ME		OBINN	SNOTTONS	
		Per	n cen ns /c	ies y ut	9	20/19	5251	<i>B</i>	ed Ru	9	960			1/3 1/3	17:	22				
		Å	rd burg	2 2	0	180	60	0	XAL	ller	SWE	السلا	90 B	1/19	9 6	ÿ				
Pi								Ì	arl	L.	E E	Ż		1	7/3	2	1	X	7	×
age	0#:2623702	-																		
17 0			Ĩ		I tetere at	D'SIGRATI	HE			4								uq		
f 19	TENT CAL Due Date: 10/4	-91/90		PRIN	I Name of	SAMPLEH	Daie (	ARR.	6								) ui 9	D9vii	JB JB	səid
]	LINI: UHROUGE-CCR		_	SIG	ATURE of	SAMPLER						ATE Sign	ς cĝ	6/1			<u>тем</u>	Hece	1000) 1000) 1000)	Sami Intact (V/V)
			_														ļ	İ		ľ

Pare Anabolical

## **CHAIN-OF-CUSTODY / Analytical Request Document**

	ALL THE ALL ALL ALL ALL ALL ALL ALL ALL ALL AL	The Chain-of-Cust	ody is a LEGAL DOCUMENT. All relevant fields must be completed	accurately.
Section	Sec	tion B	Section C	
Require	d Client Information:	uired Project Information:	Invoice Information:	Page: 3 of 3
Compan	V: Georgia Power - Coal Combustion Residuals Rep	ort To: Joju Abraham	Attention: scsinvoices @ southernco.com	
Address.	2480 Maner Road Cop	y To: Lauren Petty. Geosyntec	Company Name:	
Atlanta.	GA 30339		Address:	Hegulatory/Agency
Email:	jabraham@southernco.com	shase Order #: SCS10382775	Pace Quote:	
Phone:	(404)506-7239 Fax:	ect Name: Plant Hammond	Pace Project Manager: betsy.mcdaniel@pacelabs.com,	(State//Lideation)
Request	ed Due Date: Standord TRI Pro	ect #: GW 65 B1	Pace Profile #: 328 (Huft)	GA
			Requested Analyzis Theme	11(VN)
		Done Collected	Preservatives	
	SAMPLE ID	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	IS Iteat Calcium Calcium Calcium Calcium Calcium Calcium Calcium	(N/A) 91
# MƏTI	One Character per box. We- (A-Z, 0-9.1, -) Oher Sample ids must be unique Tassue	ر کے کی کی کی کی کی کی کی کی کی کی کی کی کی	<ul> <li>A OF CONTRINEF</li> <li>Unpreserved</li> <li>H2SO4</li> <li>H2SO4</li> <li>H2SO4</li> <li>H2SO4</li> <li>Methanol</li> <li>Methanol</li> <li>Other</li> <li>Methanol</li> <li>Other</li> <li>Methanol</li> <li>Other</li> <li>Methanol</li> <li>Other</li> <li>Methanol</li> <li>Other</li> <li>Methanol</li> <li>Other</li> <li>Methanol</li> <li>Methanol</li> <li>Other</li> <li>Methanol</li> /ul>	ninolif) IsubisəR
Ļ	GWA-11	WT 6 9/24/5 16409 1/20/19 1645 19		5
6				
e				
9 <del>3</del>				
9				
9				
6				
8				
6				
(0)				
E.				
(12) (12)				
	урритонда: сомиенте		TIME ADDEPTED BY/ AFEILATION	SAMPLE CONDITIONS
		Nachia Munhur Cecombe 9/20/19	1725 Flered Reverse geo 9130	Sec. 1 Sec.
		Chul truster get 9/30	1900 WEUMI ROYMONIN ACC 10/1/19	05:01
Pa		,	Chades Hule 10/119	120251 V V X
age <del>1</del> 0	0# - 2623793	Hypeleador anternational and the second seco		
		PRINT Name of SAMPLER:	KIndle Marine	

Samples Intact (Y/V)

Custody Sealed Cooler (V/Y)

Received on Ice (Y/N)

С и чмэт

DATE Signed: 01 20 19

Marton

Nolla

PRINT Name of SAMPLER:

Due Date: 10/08/19

CLIENT: GRPower-CCR

PN: BN

SIGNATURE of SAMPLER Vallin af Judin

San	nple Condition	Upon Receipt	WO#:2623793	
Face Analytical	$( \land \land \land \land \land \land \land \land \land \land \land \land \land \land \land \land \land \land \land$	10.0	PM: BM Due Date: 1	0/09/10
Client Name	: GHTOW	er (CK	CLIENT: GAPower-CCR	0,00,13
			1	
Courier:		Pace Other	Proj Due Date:	
Custody Seal on Cooler/Box Present: Uyes	🗌 no Šejals i	ntact: 🖯 yes 🗌	no	
Packing Material: Provide Wrap TBubble	Bags 🗌 Nonyé _[	Other		
Thermometer Used $\sum /4$	Type of Ice: Wet	Blue None	Samples on ice, cooling process has begur	
Cooler Temperature	Biological Tissue i	s Frozen: Yes No	Date and Initials of person examining	
Temp should be above freezing to 6°C		Comments:		
Chain of Custody Present:		1		
Chain of Custody Filled Out:		2.		
Chain of Custody Relinquished:	Pres □No □N/A	3.	·	
Sampler Name & Signature on COC:		4		
Samples Arrived within Hold Time:		5		
Short Hold Time Analysis (<72hr):		6.		
Rush Turn Around Time Requested:		7.		
Sufficient Volume:		8.	ł.	
Correct Containers Used:	ØYes □No □N/A	9.		
-Pace Containers Used:				
Containers Intact:		10.		
Filtered volume received for Dissolved tests		11		
Sample Labels match COC:		12.		
-Includes date/time/ID/Analysis Matrix:	$N_{$			
All containers needing preservation have been checked.		13.		
All containers needing preservation are found to be in compliance with EPA recommendation.				
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes DNo	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:		14.		
Headspace in VOA Vials ( >6mm):		15.		
Trip Blank Present:		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:				
	<u> </u>			
		٠.	· · · · · · · · · · · · · · · · · · ·	
· · · · · · · · · · · · · · · · · · ·				+
				+
				<del></del>
Project Manager Review:	·		Date:	<b></b>
Note: Whenever there is a discrepancy affecting North	Carolina compliance sar	noles, a copy of this form w	vill be sent to the North Carolina DEHNR	

Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)



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

December 17, 2019

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

RE: Project: Plant Hammond -Huffaker GW6581 Pace Project No.: 2623872

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Kein Hung

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

Enclosures

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





### CERTIFICATIONS

Project: Plant Hammond -Huffaker GW6581

Pace Project No.: 2623872

### Pace Analytical Services Atlanta

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

### Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804 Florida/NELAP Certification #: E87648 Massachusetts Certification #: M-NC030 North Carolina Drinking Water Certification #: 37712 North Carolina Certification #: 381 South Carolina Certification #: 98011001 Virginia Certification #: 460204

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



### SAMPLE SUMMARY

Project: Plant Hammond -Huffaker GW6581

Pace Project No.: 2623872

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623872001	FB-03	Water	10/01/19 17:00	10/02/19 13:32
2623872002	EB-03	Water	10/01/19 17:08	10/02/19 13:32



### SAMPLE ANALYTE COUNT

Project:Plant Hammond -Huffaker GW6581Pace Project No.:2623872

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623872001	FB-03	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2623872002	EB-03	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A



### Project: Plant Hammond -Huffaker GW6581

Pace Project No.: 2623872

Sample: FB-03	Lab ID:	2623872001	Collecte	ed: 10/01/19	9 17:00	Received: 10/	02/19 13:32 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 19:21	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 19:21	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 19:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 19:21	7440-41-7	
Boron	0.011J	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 19:21	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 19:21	7440-43-9	
Calcium	ND	mg/L	0.10	0.011	1	10/04/19 14:03	10/07/19 19:21	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 19:21	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 19:21	7440-48-4	
Copper	0.00036J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 19:21	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 19:21	7439-92-1	
Nickel	0.00053J	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 19:21	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 19:21	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 19:21	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 19:21	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 19:21	7440-62-2	
Zinc	0.0056J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 19:21	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/07/19 12:18		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
Chloride	ND	mg/L	1.0	0.60	1		10/12/19 16:44	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		10/12/19 16:44	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/12/19 16:44	14808-79-8	



### Project: Plant Hammond -Huffaker GW6581

Pace Project No.: 2623872

Sample: EB-03	Lab ID:	2623872002	Collecte	ed: 10/01/19	9 17:08	Received: 10/	02/19 13:32 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: Ef	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 19:27	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 19:27	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 19:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 19:27	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 19:27	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 19:27	7440-43-9	
Calcium	0.016J	mg/L	0.10	0.011	1	10/04/19 14:03	10/07/19 19:27	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 19:27	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 19:27	7440-48-4	
Copper	ND	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 19:27	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 19:27	7439-92-1	
Nickel	ND	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 19:27	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 19:27	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 19:27	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 19:27	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 19:27	7440-62-2	
Zinc	0.0059J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 19:27	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	11.0	mg/L	10.0	10.0	1		10/07/19 12:18		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
Chloride	ND	mg/L	1.0	0.60	1		10/12/19 16:58	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		10/12/19 16:58	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/12/19 16:58	14808-79-8	



Project: Plant Hammond -Huffaker GW6581

Pace Project No.: 2623872

00 Potobi 26402		Analysia Math		6020D		
		Analysis Metr		00206		
QC Batch Method: EPA 3005A		Analysis Desc	cription: 6020	DB ME I		
Associated Lab Samples: 26238720	001, 2623872002					
METHOD BLANK: 164870		Matrix:	Water			
Associated Lab Samples: 26238720	001, 2623872002					
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/07/19 17:47	
Arsenic	mg/L	ND	0.0050	0.00035	10/07/19 17:47	
Barium	mg/L	ND	0.010	0.00049	10/07/19 17:47	
Beryllium	mg/L	ND	0.0030	0.000074	10/07/19 17:47	
Boron	mg/L	ND	0.040	0.0049	10/07/19 17:47	
Cadmium	mg/L	ND	0.0025	0.00011	10/07/19 17:47	
Calcium	mg/L	ND	0.10	0.011	10/07/19 17:47	
Chromium	mg/L	ND	0.010	0.00039	10/07/19 17:47	
Cobalt	mg/L	ND	0.0050	0.00030	10/07/19 17:47	
Copper	mg/L	ND	0.025	0.00019	10/07/19 17:47	
Lead	mg/L	ND	0.0050	0.000046	10/07/19 17:47	
Nickel	mg/L	ND	0.010	0.00031	10/07/19 17:47	
Selenium	mg/L	ND	0.010	0.0013	10/07/19 17:47	
Silver	mg/L	ND	0.010	0.00028	10/07/19 17:47	
Thallium	mg/L	ND	0.0010	0.000052	10/07/19 17:47	
Vanadium	mg/L	ND	0.010	0.00071	10/07/19 17:47	
Zinc	mg/L	0.0047J	0.010	0.0015	10/07/19 17:47	

### LABORATORY CONTROL SAMPLE: 164871

Parameter	Linite	Spike Conc	LCS Result	LCS % Rec	% Rec	Qualifiers
				/01/00	Linito	Qualifiers
Antimony	mg/L	0.1	0.099	99	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	1.0	101	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Calcium	mg/L	1	0.97	97	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Copper	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Nickel	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Silver	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	
Vanadium	mg/L	0.1	0.098	98	80-120	
Zinc	mg/L	0.1	0.10	104	80-120	

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

### **REPORT OF LABORATORY ANALYSIS**

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



Project: Plant Hammond -Huffaker GW6581

Pace Project No.: 2623872

MATRIX SPIKE & MATRIX SPIK	E DUPL	ICATE: 1648	72		164873							
			MS	MSD								
		2623808004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	0	20	
Arsenic	mg/L	0.00063J	0.1	0.1	0.097	0.10	96	101	75-125	5	20	
Barium	mg/L	0.035	0.1	0.1	0.14	0.15	108	110	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	2	20	
Boron	mg/L	0.048	1	1	1.0	1.0	99	99	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	1	20	
Calcium	mg/L	41.5	1	1	42.5	41.7	98	25	75-125	2	20	M6
Chromium	mg/L	0.00072J	0.1	0.1	0.097	0.10	96	100	75-125	4	20	
Cobalt	mg/L	0.00049J	0.1	0.1	0.095	0.10	94	99	75-125	5	20	
Copper	mg/L	0.00070J	0.1	0.1	0.096	0.10	95	99	75-125	3	20	
Lead	mg/L	0.000066J	0.1	0.1	0.094	0.096	94	96	75-125	3	20	
Nickel	mg/L	0.0011J	0.1	0.1	0.098	0.10	97	100	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Silver	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	2	20	
Thallium	mg/L	0.000086J	0.1	0.1	0.096	0.099	96	99	75-125	3	20	
Vanadium	mg/L	ND	0.1	0.1	0.097	0.10	97	100	75-125	3	20	
Zinc	mg/L	0.0046J	0.1	0.1	0.10	0.10	95	99	75-125	3	20	

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

### **REPORT OF LABORATORY ANALYSIS**

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



Project: Pace Project No.:	Plant Hammond -I 2623872	Huffaker GW6581							
QC Batch:	36551		Analysis I	Method:	SM 2540C				
QC Batch Method:	SM 2540C		Analysis I	Description:	2540C Total D	Dissolved So	olids		
Associated Lab Sar	nples: 26238720	01, 2623872002							
LABORATORY CO	NTROL SAMPLE:	165142							
			Spike	LCS	LCS	% Rec			
Paran	neter	Units	Conc.	Result	% Rec	Limits	Q	ualifiers	
Total Dissolved Soli	ds	mg/L	400	415	104	84-	108		
SAMPLE DUPLICA	TE: 165144								
_			262387300	5 Dup		Ν	/lax		
Parar	neter	Units	Result	Result	RPD	F	PD	Qualifiers	_
Total Dissolved Soli	ds	mg/L	2	77 2	277	0	10		
SAMPLE DUPLICA	TE: 165154								
			2623872002	2 Dup		Ν	/lax		
Paran	neter	Units	Result	Result	RPD	F	PD	Qualifiers	
Total Dissolved Soli	ds	mg/L	11	.0 1	2.0	9	10		

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



Project:	Plant Ha	mmond -Hu	uffaker GW6581										
Pace Project No.:	2623872	2											
QC Batch:	503241	1		Analy	sis Metho	d:	EPA 300.0 F	Rev 2.1 19	93				
QC Batch Method:	EPA 30	)0.0 Rev 2.1	1 1993	Analy	sis Descri	otion:	300.0 IC An	ons					
Associated Lab Sar	moles:	262387200 <sup>-</sup>	1 2623872002	,	0.0 2 000.1								
	npico.	202007200	1, 2020072002										
METHOD BLANK:	2705166	6			Matrix: W	ater							
Associated Lab Sar	mples:	262387200 <sup>-</sup>	1, 2623872002										
				Blar	ik 🛛	Reporting							
Parar	neter		Units	Resu	ult	Limit	MDI		Analyzed	Qu	ualifiers		
Chloride			mg/L		ND	1	.0	0.60 1	0/12/19 15:	31			
Fluoride			mg/L		ND	0.1	10	0.050 1	0/12/19 15:	31			
Sulfate			mg/L		ND	1	.0	0.50 1	0/12/19 15:	31			
			2705167										
2.201011010100			2.00101	Spike	LC	S	LCS	% F	Rec				
Parar	neter		Units	Conc.	Res	ult	% Rec	Lim	its (	Qualifiers			
Chloride			mg/L	5	0	50.1	100	)	90-110				
Fluoride			mg/L	2.	5	2.3	93	3	90-110				
Sulfate			mg/L	5	0	50.3	101	I	90-110				
MATRIX SPIKE & M			ICATE: 2705	168		270516	9						
				MS	MSD	210010	•						
			2624007001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride		mg/L	150	50	50	189	191	78	83	90-110	1	10	M1
Fluoride		mg/L	1.1	2.5	2.5	3.4	3.3	94	88	90-110	4	10	M1
Sulfate		mg/L	13.6	50	50	62.1	58.4	97	90	90-110	6	10	
MATRIX SPIKE & M	ATRIX SI		ICATE: 2705	170		270517	1						
				MS	MSD								
			92449004022	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride		mg/L	9.2	50	50	61.3	61.5	104	105	90-110	0	10	
Fluoride		mg/L	ND	2.5	2.5	3.1	3.2	124	126	90-110	1	10	M1
Sulfate		mg/L	466	50	50	501	506	70	79	90-110	1	10	M6

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

### **REPORT OF LABORATORY ANALYSIS**

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



### QUALIFIERS

Project: Plant Hammond -Huffaker GW6581

Pace Project No.: 2623872

### 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

- B Analyte was detected in the associated method blank.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:Plant Hammond -Huffaker GW6581Pace Project No.:2623872

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623872001	FB-03	EPA 3005A	36492	EPA 6020B	36507
2623872002	EB-03	EPA 3005A	36492	EPA 6020B	36507
2623872001	FB-03	SM 2540C	36551		
2623872002	EB-03	SM 2540C	36551		
2623872001	FB-03	EPA 300.0 Rev 2.1 1993	503241		
2623872002	EB-03	EPA 300.0 Rev 2.1 1993	503241		

Pace Analytical

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

Section A		Section B					Secti	ion C																	
o alinhau		Hequired Project	Informatio	Ë			Invoi	ice Infor	mation:								I		-	<u>age :</u>	٦		ō		_
Company	Georgia Power - Coal Combustion Residuals	Report To: Joju	Abraham				Atten	ition:	scsinvo	ices@ so:	vuthemo	D.COM							i						
Address:	2480 Maner Road	Copy To: Laur	ren Petty, G	eosyntec			Com	pany Nar	ne:																
Atlanta, G.	A 30339						Addre	ess:												<b>IReg</b> t	latory A	Rency			
Email: j	abraham @ southernco.com	Purchase Order #:	SCS10	1382775			Pace	Ouote:									┝								
Phone:	(404)506-7239 Fax:	Project Name:	Plant Ham	mond			Pace	Project I	Manager	ed L	tsv.mcd	aniel@	Dacelat	1S.COM.					A STATISTIC	いる	10 (11/0C)	ition			
Requested	I Due Date: Structure 1AT	Project #: 6W6	185:				Pace	Profile #	1 326	3 (Huff)											g				
ľ							$\left  \right $						ALC: N	Begu	sated/(		<b>5</b> .Filter	NVA) pe	1. 1						
		(116) (	(aw	č	CTED.							N//	7	N	<u>کر</u>	1	//								
	MATRIX Dentered W	CODE CODE	00-			Ţ	N	F				3		<u>+</u>	<u>}</u>	Ţ	<u></u>	┇	╉				ALC: NO.		
	Water Water	M M M M	-D 8AF										muin	Cobal		11100				(N	/				
	SAMPLE ID Suived	고 의 드	19=9	TART	N N N	ρ	s cor					<b>69</b> ]	c, Ba	oleO ,muir	, the f	112111				/ <b>V)</b> 6	(1) 0				
	One Character per box.	AR AR	)_3<				IA 41	p				SÐ	ines:	hron.	N 'P	oui;	¢OS			-i-olt	n.c				
# MƏTI	Sample Ids must be unique trasue	2 ö b b b b b b b b b b b b b b b b b b b	SAMPLE TYI	TIME	DATE	III	* OF CONTA	H52O4 Dupreserve	HCI HINO3	NªOH NªOH	lonsdieM	Other	A ,ynomitn/	e ,muiliynes O ,muimbe	Copper, Lea	s ,muinered	TDS, CI, F,			C lenhiseA					
Ų.	FB-03	73	1-01 3	85:91 2	11-1-01	17:00	25	-	-	┢			É	> >	<u>}</u>	<u>, 7</u>	~	<b> </b>			<u> </u>				
N	EB-03	1133	6 10 1-1	117:25	loif.	17:09	2						<b>-</b>	<u>&lt;</u>	1×	2	7			<	Ĺ				
					T	ſ			·	L		T	1	-		<u>_</u>									
9														+				4	$\frac{1}{1}$						
4						_					-				_		$\mathbf{r}$								,
6								_					$\Box$	$\left  \right $											
(9)						-	<u> </u>		2		Ц Т														
آجا							-		$\mathbb{A}$	⇇				-				1	┢						
				À		:#\	$\mathbf{x}$	+	┼	╞	╞	Т		╀		+		1	╀	1-					_
8			$\downarrow$	2	V	$\uparrow$		1	+		+			+		+		1	+	T					-
8							_							$\dashv$				4	$\rightarrow$						T
<u>9</u>		/					_											_							
μı								-	╞			I		-											
12						-					F	T		–					-						
	STREAM COMMENTER	BELING	VISHED BY	AFFILIATIO		DATE	E.	ų.		No.	CENTED	BY//AF	Wink	NO			DATE		EINE		(BA)	IPLE CON	DITIONS		
		(J. J. C	192	Costa	3	4.10	16.	2	20	LA 1	na	- full	14	100	nte	<u>a</u> (	101	4 19	R';						
		Norlia	Min	bo K	tostule	12/110		5	Ø		-		0				9. 6		8			_			
		pH	4					2 ?	9			₹ a				2	バ			6			X	8	<u> </u>
	#:2623872					117 10					Ż	*	~~~			<u>1</u>		<u>}</u>			╄-		Ĺ	$\lfloor \mid$	<b></b>
e 1				BAUPLER	NAMEA	(D) SIGNA	IUAE			1. 1.											uo	-			
				PRIN	T Name of ATURE of	SAMPLEI	<u>d</u>	<i>S</i>	320					ATE Si	ined:					WB IV	eceived	Apoisn (N/	aled (VN)	act act (V/)	
7707	7.0				ψ		Ň	14	<i>"</i>					7.0	102	8				<sup>31</sup>	e U	2 A)	र) २ भेड	()  U   S	

C.o.	anla Condition II	oon Receipt	<b>J0#:2623872</b>	2	
Sam	ple condition o		DM. RM Due Date:	10/09	<b>7</b>
Face Analytical Client Name:	GAP DUI	V (CR	CLIENT: GAPower-CCR		
ourier: 🔲 Fed Ex 🗌 UPS 🗌 USPS 🗍 Clier	nt 🗌 Commercial 🖺	Pace Other	Prol Due Date		
racking #:	·		Proj. Name		
ustody Seal on Cooler/Box Present: 🛛 yes	nor Seals inf	act: 🖌 yes 🗀	no		
acking Material: 🔲 Bubble Wrap 👘 Bubble	Bags 🛛 Nong	Other		bogun	
hermometer Used <u>214</u>	Type of Ice: Wet	Blue None	Samples on ice, cooling process has Date and initials of person examples	nining	1
cooler Temperature	Biological Tissue is	Frozen: Yes No	contents:	2#-	
emp should be above freezing to 6°C		comments:			1
Chain of Custody Present:		·			1
Chain of Custody Filled Out:					1
Chain of Custody Relinquished:	Pres INO IN/A 3	3			1
Sampler Name & Signature on COC:	PYes DNO DN/A	ł	·		
Samples Arrived within Hold Time:		5			1
Short Hold Time Analysis (<72hr):	DYes ENO DN/A	6			1
Rush Turn Around Time Requested:		7	1		1
Sufficient Volume:	Tes INO IN/A	8	· · · · · · · · · · · · · · · · · · ·		$\dagger$
Correct Containers Used:	□Yes □No □N/A	9.			
-Pace Containers Used:				_	Ħ
Containers Intact:		10			Η
Filtered volume received for Dissolved tests		11			Η
Sample Labels match COC:	Erres DNO DN/A	12.			
-Includes date/time/ID/Analysis Matrix:					Η
All containers needing preservation have been checked.		13.			
All containers needing preservation are found to be in compliance with EPA recommendation					
		Initial when	Lot # of added		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)		completed			
Samples checked for dechlorination:		14.	·		
Headspace in VOA Vials ( >6mm):		15.	······································		
Trip Blank Present:	□Yes □No QIN/A	16.			
Trip Blank Custody Seals Present	□Yes □No [Ź]N/A		•		
Pace Trip Blank Lot # (if purchased):		I			
Client Notification/ Resolution:			Field Data Required? Y	4	
Person Contacted:	Date/	Time:			
Comments/ Resolution:	· - · - · - · - · · - · · · · · · · · ·	<u></u>			
	·				
·		· · ·		_	
		· · · · · · · · · · · · · · · · · · ·			
Brojost Managas Davis				- I i	

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNB age 14 of 14 Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

.



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

December 17, 2019

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

RE: Project: Plant Hammond - GW6581 Pace Project No.: 2623873

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Kein Hung

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

Enclosures

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





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

### CERTIFICATIONS

Project: Plant Hammond - GW6581 Pace Project No.: 2623873

### Pace Analytical Services Atlanta

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

### Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804 Florida/NELAP Certification #: E87648 Massachusetts Certification #: M-NC030 North Carolina Drinking Water Certification #: 37712 North Carolina Certification #: 381 South Carolina Certification #: 98011001 Virginia Certification #: 460204

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



### SAMPLE SUMMARY

Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2623873001	GWC-5	Water	10/01/19 09:45	10/02/19 13:32
2623873002	GWC-6	Water	10/01/19 11:20	10/02/19 13:32
2623873003	GWC-8	Water	10/01/19 13:10	10/02/19 13:32
2623873004	FD-03	Water	10/01/19 13:20	10/02/19 13:32
2623873005	GWC-7	Water	10/01/19 15:00	10/02/19 13:32
2623873006	GWC-10	Water	10/01/19 10:04	10/02/19 13:32
2623873007	GWC-22	Water	10/01/19 11:09	10/02/19 13:32
2623873008	GWC-21	Water	10/01/19 12:05	10/02/19 13:32
2623873009	GWC-20	Water	10/01/19 13:15	10/02/19 13:32
2623873010	GWC-19	Water	10/01/19 14:12	10/02/19 13:32
2623873011	GWC-18	Water	10/01/19 15:13	10/02/19 13:32
2623873012	GWC-23	Water	10/01/19 11:47	10/02/19 13:32
2623873013	GWC-9	Water	10/01/19 14:01	10/02/19 13:32



### SAMPLE ANALYTE COUNT

Project:Plant Hammond - GW6581Pace Project No.:2623873

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2623873001	GWC-5	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873002	GWC-6	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873003	GWC-8	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873004	FD-03	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873005	GWC-7	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873006	GWC-10	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873007	GWC-22	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873008	GWC-21	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873009	GWC-20	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873010	GWC-19	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873011	GWC-18	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873012	GWC-23	EPA 6020B	CSW	17	PASI-GA
		SM 2540C	ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2623873013	GWC-9	EPA 6020B	CSW	17	PASI-GA



### SAMPLE ANALYTE COUNT

Project:Plant Hammond - GW6581Pace Project No.:2623873

Lab ID	Sample ID	Analy Method Analysts Report	:es :ed	Laboratory
		SM 2540C ALW	1	PASI-GA
		EPA 300.0 Rev 2.1 1993 BRJ	3	PASI-A



### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-5	Lab ID:	2623873001	Collecte	ed: 10/01/19	9 09:45	Received: 10/	02/19 13:32 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 19:33	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 19:33	7440-38-2	
Barium	0.090	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 19:33	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 19:33	7440-41-7	
Boron	0.071	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 19:33	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 19:33	7440-43-9	
Calcium	70.6	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 19:38	7440-70-2	
Chromium	0.0012J	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 19:33	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 19:33	7440-48-4	
Copper	0.00031J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 19:33	7440-50-8	
Lead	0.000065J	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 19:33	7439-92-1	
Nickel	0.00088J	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 19:33	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 19:33	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 19:33	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 19:33	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 19:33	7440-62-2	
Zinc	0.0053J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 19:33	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	380	mg/L	10.0	10.0	1		10/07/19 12:18		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
Chloride	2.2	mg/L	1.0	0.60	1		10/15/19 20:20	16887-00-6	
Fluoride	0.064J	mg/L	0.30	0.050	1		10/15/19 20:20	16984-48-8	
Sulfate	68.1	mg/L	1.0	0.50	1		10/15/19 20:20	14808-79-8	



### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-6	Lab ID:	2623873002	Collecte	ed: 10/01/19	9 11:20	Received: 10/	02/19 13:32 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: Ef	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 19:56	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 19:56	7440-38-2	
Barium	0.18	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 19:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 19:56	7440-41-7	
Boron	0.042	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 19:56	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 19:56	7440-43-9	
Calcium	64.2	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 20:01	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 19:56	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 19:56	7440-48-4	
Copper	0.00023J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 19:56	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 19:56	7439-92-1	
Nickel	0.00042J	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 19:56	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 19:56	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 19:56	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 19:56	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 19:56	7440-62-2	
Zinc	0.0056J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 19:56	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	348	mg/L	10.0	10.0	1		10/07/19 12:18		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
Chloride	1.6	mg/L	1.0	0.60	1		10/15/19 20:36	16887-00-6	
Fluoride	0.063J	mg/L	0.30	0.050	1		10/15/19 20:36	16984-48-8	
Sulfate	71.7	mg/L	2.0	1.0	2		10/16/19 09:13	14808-79-8	



### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-8	Lab ID:	2623873003	Collecte	ed: 10/01/19	9 13:10	Received: 10/	02/19 13:32 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	thod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 20:07	7440-36-0	
Arsenic	0.0028J	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 20:07	7440-38-2	
Barium	0.12	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 20:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 20:07	7440-41-7	
Boron	0.046	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 20:07	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 20:07	7440-43-9	
Calcium	64.0	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 20:13	7440-70-2	
Chromium	0.00050J	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 20:07	7440-47-3	
Cobalt	0.00081J	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 20:07	7440-48-4	
Copper	0.00036J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 20:07	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 20:07	7439-92-1	
Nickel	0.00063J	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 20:07	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 20:07	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 20:07	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 20:07	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 20:07	7440-62-2	
Zinc	0.0055J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 20:07	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	305	mg/L	10.0	10.0	1		10/07/19 12:18		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
Chloride	1.8	mg/L	1.0	0.60	1		10/15/19 20:51	16887-00-6	
Fluoride	0.13J	mg/L	0.30	0.050	1		10/15/19 20:51	16984-48-8	
Sulfate	47.1	mg/L	1.0	0.50	1		10/15/19 20:51	14808-79-8	


#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: FD-03	Lab ID:	2623873004	Collecte	ed: 10/01/19	9 13:20	Received: 10/	02/19 13:32 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 20:19	7440-36-0	
Arsenic	0.0026J	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 20:19	7440-38-2	
Barium	0.12	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 20:19	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 20:19	7440-41-7	
Boron	0.046	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 20:19	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 20:19	7440-43-9	
Calcium	67.4	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 20:24	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 20:19	7440-47-3	
Cobalt	0.00076J	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 20:19	7440-48-4	
Copper	0.00020J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 20:19	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 20:19	7439-92-1	
Nickel	ND	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 20:19	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 20:19	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 20:19	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 20:19	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 20:19	7440-62-2	
Zinc	0.0053J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 20:19	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	313	mg/L	10.0	10.0	1		10/07/19 12:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	1.8	mg/L	1.0	0.60	1		10/15/19 21:05	16887-00-6	
Fluoride	0.13J	mg/L	0.30	0.050	1		10/15/19 21:05	16984-48-8	
Sulfate	47.0	mg/L	1.0	0.50	1		10/15/19 21:05	14808-79-8	



#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-7	Lab ID:	2623873005	Collected: 10/01/19 15:00			Received: 10/02/19 13:32 Matrix: Water			
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	thod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 20:30	7440-36-0	
Arsenic	0.010	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 20:30	7440-38-2	
Barium	0.085	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 20:30	7440-39-3	
Beryllium	0.00010J	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 20:30	7440-41-7	
Boron	0.050	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 20:30	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 20:30	7440-43-9	
Calcium	28.5	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 20:36	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 20:30	7440-47-3	
Cobalt	0.017	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 20:30	7440-48-4	
Copper	0.00034J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 20:30	7440-50-8	
Lead	0.000050J	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 20:30	7439-92-1	
Nickel	0.070	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 20:30	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 20:30	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 20:30	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 20:30	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 20:30	7440-62-2	
Zinc	0.12	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 20:30	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	277	mg/L	10.0	10.0	1		10/07/19 12:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	1.2	mg/L	1.0	0.60	1		10/15/19 21:20	16887-00-6	
Fluoride	0.16J	mg/L	0.30	0.050	1		10/15/19 21:20	16984-48-8	
Sulfate	120	ma/l	3.0	1.5	3		10/16/19 09:29	14808-79-8	



#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-10	Lab ID:	2623873006	Collected: 10/01/19 10:04			Received: 10/02/19 13:32 Matrix: Water			
_			Report						- · ·
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 20:41	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 20:41	7440-38-2	
Barium	0.12	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 20:41	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 20:41	7440-41-7	
Boron	0.031J	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 20:41	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 20:41	7440-43-9	
Calcium	36.8	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 20:47	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 20:41	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 20:41	7440-48-4	
Copper	ND	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 20:41	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 20:41	7439-92-1	
Nickel	ND	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 20:41	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 20:41	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 20:41	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 20:41	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 20:41	7440-62-2	
Zinc	0.0049J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 20:41	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	186	mg/L	10.0	10.0	1		10/07/19 12:19		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
Chloride	1.5	mg/L	1.0	0.60	1		10/15/19 21:35	16887-00-6	
Fluoride	0.070J	mg/L	0.30	0.050	1		10/15/19 21:35	16984-48-8	
Sulfate	13.4	mg/L	1.0	0.50	1		10/15/19 21:35	14808-79-8	



#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-22	Lab ID:	2623873007	Collected: 10/01/19 11:09			Received: 10/02/19 13:32 Matrix: Water			
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	thod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 21:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 21:04	7440-38-2	
Barium	0.10	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 21:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 21:04	7440-41-7	
Boron	0.066	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 21:04	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 21:04	7440-43-9	
Calcium	46.9	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 21:10	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 21:04	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 21:04	7440-48-4	
Copper	0.00031J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 21:04	7440-50-8	
Lead	0.00012J	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 21:04	7439-92-1	
Nickel	ND	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 21:04	7440-02-0	
Selenium	0.0014J	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 21:04	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 21:04	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 21:04	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 21:04	7440-62-2	
Zinc	0.0054J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 21:04	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	220	mg/L	10.0	10.0	1		10/07/19 12:19		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
Chloride	1.4	mg/L	1.0	0.60	1		10/15/19 22:20	16887-00-6	
Fluoride	0.079J	mg/L	0.30	0.050	1		10/15/19 22:20	16984-48-8	
Sulfate	1.9	mg/L	1.0	0.50	1		10/15/19 22:20	14808-79-8	



#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-21	Lab ID:	2623873008	Collected: 10/01/19 12:05			Received: 10/02/19 13:32 Matrix: Water			
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 21:16	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 21:16	7440-38-2	
Barium	0.18	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 21:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 21:16	7440-41-7	
Boron	0.059	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 21:16	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 21:16	7440-43-9	
Calcium	82.8	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 21:22	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 21:16	7440-47-3	
Cobalt	0.00046J	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 21:16	7440-48-4	
Copper	0.00084J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 21:16	7440-50-8	
Lead	0.000075J	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 21:16	7439-92-1	
Nickel	0.0031J	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 21:16	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 21:16	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 21:16	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 21:16	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 21:16	7440-62-2	
Zinc	0.0078J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 21:16	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	336	mg/L	10.0	10.0	1		10/07/19 12:19		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
Chloride	2.0	mg/L	1.0	0.60	1		10/15/19 22:35	16887-00-6	
Fluoride	0.094J	mg/L	0.30	0.050	1		10/15/19 22:35	16984-48-8	
Sulfate	46.3	mg/L	1.0	0.50	1		10/15/19 22:35	14808-79-8	



#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-20	Lab ID:	2623873009	Collecte	ed: 10/01/19	9 13:15	Received: 10/	02/19 13:32 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	thod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 21:27	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 21:27	7440-38-2	
Barium	0.14	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 21:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 21:27	7440-41-7	
Boron	0.019J	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 21:27	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 21:27	7440-43-9	
Calcium	59.1	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 21:33	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 21:27	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 21:27	7440-48-4	
Copper	0.00023J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 21:27	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 21:27	7439-92-1	
Nickel	ND	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 21:27	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 21:27	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 21:27	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 21:27	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 21:27	7440-62-2	
Zinc	0.0063J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 21:27	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	271	mg/L	10.0	10.0	1		10/07/19 12:19		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
Chloride	1.1	mg/L	1.0	0.60	1		10/15/19 23:20	16887-00-6	
Fluoride	0.069J	mg/L	0.30	0.050	1		10/15/19 23:20	16984-48-8	
Sulfate	52.3	mg/L	1.0	0.50	1		10/15/19 23:20	14808-79-8	



#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-19	Lab ID:	2623873010	Collecte	ed: 10/01/19	9 14:12	Received: 10/	02/19 13:32 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	thod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 21:39	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 21:39	7440-38-2	
Barium	0.15	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 21:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 21:39	7440-41-7	
Boron	0.17	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 21:39	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 21:39	7440-43-9	
Calcium	42.3	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 21:44	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 21:39	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 21:39	7440-48-4	
Copper	0.00019J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 21:39	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 21:39	7439-92-1	
Nickel	ND	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 21:39	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 21:39	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 21:39	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 21:39	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 21:39	7440-62-2	
Zinc	0.0049J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 21:39	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	229	mg/L	10.0	10.0	1		10/07/19 12:19		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0 Rev 2	2.1 1993					
Chloride	1.3	mg/L	1.0	0.60	1		10/15/19 23:35	16887-00-6	
Fluoride	0.11J	mg/L	0.30	0.050	1		10/15/19 23:35	16984-48-8	
Sulfate	14.7	mg/L	1.0	0.50	1		10/15/19 23:35	14808-79-8	



#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-18	Lab ID:	2623873011	Collected: 10/01/19 15:13			Received: 10/02/19 13:32 Matrix: Water			
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	thod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 21:50	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 21:50	7440-38-2	
Barium	0.082	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 21:50	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 21:50	7440-41-7	
Boron	0.14	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 21:50	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 21:50	7440-43-9	
Calcium	38.7	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 21:56	7440-70-2	
Chromium	0.00086J	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 21:50	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 21:50	7440-48-4	
Copper	0.00037J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 21:50	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 21:50	7439-92-1	
Nickel	0.0015J	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 21:50	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 21:50	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 21:50	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 21:50	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 21:50	7440-62-2	
Zinc	0.0060J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 21:50	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	196	mg/L	10.0	10.0	1		10/07/19 12:20		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
Chloride	0.94J	mg/L	1.0	0.60	1		10/15/19 23:50	16887-00-6	
Fluoride	0.11J	mg/L	0.30	0.050	1		10/15/19 23:50	16984-48-8	
Sulfate	8.9	mg/L	1.0	0.50	1		10/15/19 23:50	14808-79-8	



#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-23	Lab ID:	2623873012	Collected: 10/01/19 11:47			Received: 10/02/19 13:32 Matrix: Water			
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	thod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/04/19 14:03	10/07/19 22:13	7440-36-0	
Arsenic	0.00082J	mg/L	0.0050	0.00035	1	10/04/19 14:03	10/07/19 22:13	7440-38-2	
Barium	0.082	mg/L	0.010	0.00049	1	10/04/19 14:03	10/07/19 22:13	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/04/19 14:03	10/07/19 22:13	7440-41-7	
Boron	0.024J	mg/L	0.040	0.0049	1	10/04/19 14:03	10/07/19 22:13	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/04/19 14:03	10/07/19 22:13	7440-43-9	
Calcium	39.1	mg/L	5.0	0.55	50	10/04/19 14:03	10/07/19 22:19	7440-70-2	
Chromium	0.0051J	mg/L	0.010	0.00039	1	10/04/19 14:03	10/07/19 22:13	7440-47-3	
Cobalt	0.00033J	mg/L	0.0050	0.00030	1	10/04/19 14:03	10/07/19 22:13	7440-48-4	
Copper	0.00083J	mg/L	0.025	0.00019	1	10/04/19 14:03	10/07/19 22:13	7440-50-8	
Lead	0.00022J	mg/L	0.0050	0.000046	1	10/04/19 14:03	10/07/19 22:13	7439-92-1	
Nickel	0.0035J	mg/L	0.010	0.00031	1	10/04/19 14:03	10/07/19 22:13	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/04/19 14:03	10/07/19 22:13	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/04/19 14:03	10/07/19 22:13	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/04/19 14:03	10/07/19 22:13	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/04/19 14:03	10/07/19 22:13	7440-62-2	
Zinc	0.0057J	mg/L	0.010	0.0015	1	10/04/19 14:03	10/07/19 22:13	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	203	mg/L	10.0	10.0	1		10/07/19 12:20		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0 Rev 2	2.1 1993					
Chloride	1.1	mg/L	1.0	0.60	1		10/16/19 00:05	16887-00-6	
Fluoride	0.079J	mg/L	0.30	0.050	1		10/16/19 00:05	16984-48-8	
Sulfate	5.8	mg/L	1.0	0.50	1		10/16/19 00:05	14808-79-8	



#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Sample: GWC-9	Lab ID:	2623873013	Collected: 10/01/19 14:01			Received: 10/02/19 13:32 Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: Ef	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00027	1	10/05/19 16:23	10/08/19 18:01	7440-36-0	
Arsenic	0.00071J	mg/L	0.0050	0.00035	1	10/05/19 16:23	10/08/19 18:01	7440-38-2	
Barium	0.071	mg/L	0.010	0.00049	1	10/05/19 16:23	10/08/19 18:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/05/19 16:23	10/08/19 18:01	7440-41-7	
Boron	0.018J	mg/L	0.040	0.0049	1	10/05/19 16:23	10/08/19 18:01	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/05/19 16:23	10/08/19 18:01	7440-43-9	
Calcium	37.2	mg/L	5.0	0.55	50	10/05/19 16:23	10/08/19 18:07	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.00039	1	10/05/19 16:23	10/08/19 18:01	7440-47-3	
Cobalt	0.00041J	mg/L	0.0025	0.00030	1	10/05/19 16:23	10/08/19 18:01	7440-48-4	
Copper	ND	mg/L	0.025	0.00019	1	10/05/19 16:23	10/08/19 18:01	7440-50-8	
Lead	ND	mg/L	0.0050	0.000046	1	10/05/19 16:23	10/08/19 18:01	7439-92-1	
Nickel	0.0022J	mg/L	0.010	0.00031	1	10/05/19 16:23	10/08/19 18:01	7440-02-0	
Selenium	ND	mg/L	0.010	0.0013	1	10/05/19 16:23	10/08/19 18:01	7782-49-2	
Silver	ND	mg/L	0.010	0.00028	1	10/05/19 16:23	10/08/19 18:01	7440-22-4	
Thallium	ND	mg/L	0.0010	0.000052	1	10/05/19 16:23	10/08/19 18:01	7440-28-0	
Vanadium	ND	mg/L	0.010	0.00071	1	10/05/19 16:23	10/08/19 18:01	7440-62-2	
Zinc	0.0052J	mg/L	0.010	0.0015	1	10/05/19 16:23	10/08/19 18:01	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	237	mg/L	10.0	10.0	1		10/07/19 12:20		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	0.91J	mg/L	1.0	0.60	1		10/16/19 00:20	16887-00-6	
Fluoride	0.078J	mg/L	0.30	0.050	1		10/16/19 00:20	16984-48-8	
Sulfate	72.2	mg/L	1.0	0.50	1		10/16/19 00:20	14808-79-8	



Plant Hammond - GW6581 Project:

Pace Project No.:	2623873
-------------------	---------

QC Batch:	3649	2
QC Batch Method:	EPA	3005A
Associated Lab Sam	ples:	2623

Analysis Method: Analysis Description:

2623873001, 2623873002, 2623873003, 2623873004, 2623873005, 2623873006, 2623873007, 2623873008, 2623873009, 2623873010, 2623873011, 2623873012

EPA 6020B

6020B MET

# METHOD BLANK: 164870

Matrix: Water 2623873001, 2623873002, 2623873003, 2623873004, 2623873005, 2623873006, 2623873007, 2623873008, Associated Lab Samples: 2623873009, 2623873010, 2623873011, 2623873012

	Blank	Reporting			
Units	Result	Limit	MDL	Analyzed	Qualifiers
mg/L	ND	0.0030	0.00027	10/07/19 17:47	
mg/L	ND	0.0050	0.00035	10/07/19 17:47	
mg/L	ND	0.010	0.00049	10/07/19 17:47	
mg/L	ND	0.0030	0.000074	10/07/19 17:47	
mg/L	ND	0.040	0.0049	10/07/19 17:47	
mg/L	ND	0.0025	0.00011	10/07/19 17:47	
mg/L	ND	0.10	0.011	10/07/19 17:47	
mg/L	ND	0.010	0.00039	10/07/19 17:47	
mg/L	ND	0.0050	0.00030	10/07/19 17:47	
mg/L	ND	0.025	0.00019	10/07/19 17:47	
mg/L	ND	0.0050	0.000046	10/07/19 17:47	
mg/L	ND	0.010	0.00031	10/07/19 17:47	
mg/L	ND	0.010	0.0013	10/07/19 17:47	
mg/L	ND	0.010	0.00028	10/07/19 17:47	
mg/L	ND	0.0010	0.000052	10/07/19 17:47	
mg/L	ND	0.010	0.00071	10/07/19 17:47	
mg/L	0.0047J	0.010	0.0015	10/07/19 17:47	
	Units mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	BlankUnitsResultmg/LNDmg/L0.0047J	Blank         Reporting           Units         Result         Limit           mg/L         ND         0.0030           mg/L         ND         0.0050           mg/L         ND         0.0050           mg/L         ND         0.0030           mg/L         ND         0.0025           mg/L         ND         0.010           mg/L         ND         0.010           mg/L         ND         0.0050           mg/L         ND         0.0050           mg/L         ND         0.010           mg/L<	Blank         Reporting           Units         Result         Limit         MDL           mg/L         ND         0.0030         0.00027           mg/L         ND         0.0050         0.00035           mg/L         ND         0.010         0.00049           mg/L         ND         0.010         0.00074           mg/L         ND         0.040         0.00049           mg/L         ND         0.010         0.0011           mg/L         ND         0.0025         0.00011           mg/L         ND         0.010         0.0039           mg/L         ND         0.010         0.00030           mg/L         ND         0.010         0.00030           mg/L         ND         0.025         0.00019           mg/L         ND         0.025         0.00019           mg/L         ND         0.010         0.00031           mg/L         ND         0.010         0.00031           mg/L         ND         0.010         0.00028           mg/L         ND         0.010         0.00052           mg/L         ND         0.010         0.00071	Blank         Reporting           Units         Result         Limit         MDL         Analyzed           mg/L         ND         0.0030         0.00027         10/07/19 17:47           mg/L         ND         0.0050         0.00035         10/07/19 17:47           mg/L         ND         0.010         0.00049         10/07/19 17:47           mg/L         ND         0.010         0.00049         10/07/19 17:47           mg/L         ND         0.0030         0.000074         10/07/19 17:47           mg/L         ND         0.040         0.0049         10/07/19 17:47           mg/L         ND         0.0025         0.00011         10/07/19 17:47           mg/L         ND         0.010         0.0039         10/07/19 17:47           mg/L         ND         0.010         0.0039         10/07/19 17:47           mg/L         ND         0.010         0.00303         10/07/19 17:47           mg/L         ND         0.025         0.00019         10/07/19 17:47           mg/L         ND         0.025         0.00031         10/07/19 17:47           mg/L         ND         0.010         0.00031         10/07/19 17:47

### LABORATORY CONTROL SAMPLE: 164871

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.099	99	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	1.0	101	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Calcium	mg/L	1	0.97	97	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Copper	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Nickel	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Silver	mg/L	0.1	0.099	99	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	
Vanadium	mg/L	0.1	0.098	98	80-120	
Zinc	mg/L	0.1	0.10	104	80-120	

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

# **REPORT OF LABORATORY ANALYSIS**

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



Project: Plant Hammond - GW6581

Pace Project No.: 2623873

MATRIX SPIKE & MATRIX SPI	KE DUPL	ICATE: 1648	72		164873							
			MS	MSD								
		2623808004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	0	20	
Arsenic	mg/L	0.00063J	0.1	0.1	0.097	0.10	96	101	75-125	5	20	
Barium	mg/L	0.035	0.1	0.1	0.14	0.15	108	110	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	2	20	
Boron	mg/L	0.048	1	1	1.0	1.0	99	99	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	1	20	
Calcium	mg/L	41.5	1	1	42.5	41.7	98	25	75-125	2	20	M6
Chromium	mg/L	0.00072J	0.1	0.1	0.097	0.10	96	100	75-125	4	20	
Cobalt	mg/L	0.00049J	0.1	0.1	0.095	0.10	94	99	75-125	5	20	
Copper	mg/L	0.00070J	0.1	0.1	0.096	0.10	95	99	75-125	3	20	
Lead	mg/L	0.000066J	0.1	0.1	0.094	0.096	94	96	75-125	3	20	
Nickel	mg/L	0.0011J	0.1	0.1	0.098	0.10	97	100	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Silver	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	2	20	
Thallium	mg/L	0.000086J	0.1	0.1	0.096	0.099	96	99	75-125	3	20	
Vanadium	mg/L	ND	0.1	0.1	0.097	0.10	97	100	75-125	3	20	
Zinc	mg/L	0.0046J	0.1	0.1	0.10	0.10	95	99	75-125	3	20	

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



Project: Plant Hammond - GW6581

Pace Project No 2622972

ice Proje	CT NO.:	2623873	

Face Floject No 2023073							
QC Batch: 36528		Analysis Meth	nod: EPA	6020B			
QC Batch Method: EPA 3005A		Analysis Desc	cription: 6020	B MET			
Associated Lab Samples: 2623873013							
METHOD BLANK: 165101		Matrix:	Water				
Associated Lab Samples: 2623873013							
		Blank	Reporting				
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers	
Antimony	mg/L		0.0030	0.00027	10/08/19 17:42		
Arsenic	mg/L	ND	0.0050	0.00035	10/08/19 17:42		
Barium	mg/L	ND	0.010	0.00049	10/08/19 17:42		
Beryllium	mg/L	ND	0.0030	0.000074	10/08/19 17:42		
Boron	mg/L	ND	0.040	0.0049	10/08/19 17:42		
Cadmium	mg/L	ND	0.0025	0.00011	10/08/19 17:42		
Calcium	mg/L	ND	0.10	0.011	10/08/19 17:42		
Chromium	mg/L	ND	0.010	0.00039	10/08/19 17:42		
Cobalt	mg/L	ND	0.0025	0.00030	10/08/19 17:42		
Copper	mg/L	ND	0.025	0.00019	10/08/19 17:42		
Lead	mg/L	ND	0.0050	0.000046	10/08/19 17:42		
Nickel	mg/L	ND	0.010	0.00031	10/08/19 17:42		
Selenium	mg/L	ND	0.010	0.0013	10/08/19 17:42		
Silver	mg/L	ND	0.010	0.00028	10/08/19 17:42		
Thallium	mg/L	ND	0.0010	0.000052	10/08/19 17:42		
Vanadium	mg/L	ND	0.010	0.00071	10/08/19 17:42		
Zinc	mg/L	0.0045J	0.010	0.0015	10/08/19 17:42		

#### LABORATORY CONTROL SAMPLE: 165102

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	0.1	0.10	102	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.11	108	80-120	
Boron	mg/L	1	1.1	109	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Copper	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.097	97	80-120	
Nickel	mg/L	0.1	0.098	98	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Silver	mg/L	0.1	0.10	100	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	
Vanadium	mg/L	0.1	0.097	97	80-120	
Zinc	mg/L	0.1	0.11	105	80-120	

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



Project: Plant Hammond - GW6581

Pace Project No.: 2623873

MATRIX SPIKE & MATRIX SPI	KE DUPL	ICATE: 1651	03		165104							
			MS	MSD								
		2623873013	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.098	0.10	98	103	75-125	5	20	
Arsenic	mg/L	0.00071J	0.1	0.1	0.095	0.10	94	100	75-125	6	20	
Barium	mg/L	0.071	0.1	0.1	0.17	0.17	94	101	75-125	4	20	
Beryllium	mg/L	ND	0.1	0.1	0.10	0.10	100	103	75-125	3	20	
Boron	mg/L	0.018J	1	1	0.99	1.0	97	102	75-125	5	20	
Cadmium	mg/L	ND	0.1	0.1	0.097	0.10	97	102	75-125	5	20	
Calcium	mg/L	37.2	1	1	35.7	37.8	-144	63	75-125	6	20	M6
Chromium	mg/L	ND	0.1	0.1	0.091	0.097	91	97	75-125	6	20	
Cobalt	mg/L	0.00041J	0.1	0.1	0.093	0.098	93	97	75-125	4	20	
Copper	mg/L	ND	0.1	0.1	0.093	0.097	93	97	75-125	5	20	
Lead	mg/L	ND	0.1	0.1	0.095	0.099	95	99	75-125	5	20	
Nickel	mg/L	0.0022J	0.1	0.1	0.096	0.099	94	97	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.094	0.099	93	98	75-125	5	20	
Silver	mg/L	ND	0.1	0.1	0.091	0.10	91	100	75-125	9	20	
Thallium	mg/L	ND	0.1	0.1	0.095	0.099	95	99	75-125	4	20	
Vanadium	mg/L	ND	0.1	0.1	0.093	0.097	93	97	75-125	5	20	
Zinc	mg/L	0.0052J	0.1	0.1	0.098	0.11	93	100	75-125	7	20	

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



Project:	Plant Hammond -	GW6581						
Pace Project No.:	2623873							
QC Batch:	36551		Analysis M	ethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total D	issolved Solids		
Associated Lab Sar	nples: 26238730 26238730	01, 2623873002, 2 09, 2623873010, 2	2623873003, 262 2623873011, 262	23873004, 2623 23873012, 2623	3873005, 2623 3873013	873006, 262387	3007, 2623873008,	
LABORATORY CO	NTROL SAMPLE:	165142						
_			Spike	LCS	LCS	% Rec		
Parar	neter	Units	Conc	Result	% Rec	Limits	Qualifiers	
Total Dissolved Soli	ds	mg/L	400	415	104	84-108		
SAMPLE DUPLICA	TE: 165144							
-			2623873005	Dup		Max	0 11	
Parar	neter	Units	Result	Result			Qualifiers	
Total Dissolved Soli	ds	mg/L	277	2	77	0	10	
SAMPLE DUPLICA	TE: 165154							
_			2623872002	Dup		Max		
Parar	neter	Units	Result	Result	RPD		Qualifiers	
Total Dissolved Soli	ds	mg/L	11.0	) 12	2.0	9	10	

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



Project:	Plant Hami	mond - G	W6581										
Pace Project No.:	2623873												
QC Batch:	503542			Analy	vsis Metho	d: E	EPA 300.0 F	Rev 2.1 1	993				
QC Batch Method:	EPA 300.	0 Rev 2.1	1 1993	Anal	vsis Descri	ption: 3	300.0 IC An	ions					
Associated Lab Sar	nples: 26 26	2387300 <sup>.</sup> 2387300	1, 2623873002, 9, 2623873010,	262387300 262387301	)3, 262387  1, 262387	3004, 2623 3012, 26238	873005, 26 873013	23873006	6, 262387300	)7, 262387	3008,		
METHOD BLANK:	2706348				Matrix: W	ater							
Associated Lab Sar	mples: 262 262	2387300 <sup>-</sup> 23873009	1, 2623873002, 9, 2623873010,	262387300 262387301	)3, 262387  1, 262387	3004, 2623 3012, 26238	873005, 26 873013	23873006	6, 262387300	)7, 262387	3008,		
Doror	notor		Lipito	Blai	nk +	Reporting	MD	1	Apolyzod	0	ulifiara		
	neter		Units		<u>uit</u>			—	Analyzeu		anners		
Chloride			mg/L			1.0	0	0.60	10/15/19 17:: 10/15/10 17:	21			
Sulfate			mg/L		ND	1.0	0	0.50	10/15/19 17:2	21			
LABORATORY CO	NTROL SAM	IPLE: 2	2706349										
Parar	neter		Units	Spike Conc.	LC Res	S Sult	LCS % Rec	% I Lin	Rec nits C	Qualifiers			
Chloride			mg/L	5	50	49.0	98	 8	90-110		_		
Fluoride			mg/L	2	.5	2.3	92	2	90-110				
Sulfate			mg/L	5	50	49.6	99	9	90-110				
MATRIX SPIKE & N	MATRIX SPI	KE DUPL	ICATE: 2706	6350		2706351							
Paramete	r	Units	92449348001 Result	MS Spike Conc	MSD Spike Conc	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	RPD	Max	Qual
	·	mg/l			50	91 7	92.6	10/	1 106		1	10	
Fluoride		mg/L	0.16	2.5	2.5	2.6	2.7	98	+ 100 B 101	90-110	2	10	
Sulfate		mg/L	18.8	50	50	70.4	71.3	103	3 105	90-110	1	10	
MATRIX SPIKE & N	ATRIX SPI	KE DUPL	ICATE: 2706	3352		2706353							
			0000070000	MS	MSD	MC	MOD	MO	MOD	0/ D		N.4	
Paramete	r	Units	2623873006 Result	Spike Conc.	Spike Conc.	Result	Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	max RPD	Qual
Chloride		mg/L	 1.5	50	50	54.1	54.9	10	5 107	90-110	2	10	
Fluoride		mg/L	0.070J	2.5	2.5	2.6	2.6	10	1 103	90-110	2	10	
Sulfate		mg/L	13.4	50	50	65.8	66.6	10	5 106	90-110	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**

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



### QUALIFIERS

#### Project: Plant Hammond - GW6581

Pace Project No.: 2623873

#### 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

B Analyte was detected in the associated method blank.

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



# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - GW6581

Pace Project No.: 2623873

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2623873001	GWC-5	EPA 3005A	36492	EPA 6020B	36507
2623873002	GWC-6	EPA 3005A	36492	EPA 6020B	36507
2623873003	GWC-8	EPA 3005A	36492	EPA 6020B	36507
2623873004	FD-03	EPA 3005A	36492	EPA 6020B	36507
2623873005	GWC-7	EPA 3005A	36492	EPA 6020B	36507
2623873006	GWC-10	EPA 3005A	36492	EPA 6020B	36507
2623873007	GWC-22	EPA 3005A	36492	EPA 6020B	36507
2623873008	GWC-21	EPA 3005A	36492	EPA 6020B	36507
2623873009	GWC-20	EPA 3005A	36492	EPA 6020B	36507
2623873010	GWC-19	EPA 3005A	36492	EPA 6020B	36507
2623873011	GWC-18	EPA 3005A	36492	EPA 6020B	36507
2623873012	GWC-23	EPA 3005A	36492	EPA 6020B	36507
2623873013	GWC-9	EPA 3005A	36528	EPA 6020B	36530
2623873001	GWC-5	SM 2540C	36551		
2623873002	GWC-6	SM 2540C	36551		
2623873003	GWC-8	SM 2540C	36551		
2623873004	FD-03	SM 2540C	36551		
2623873005	GWC-7	SM 2540C	36551		
2623873006	GWC-10	SM 2540C	36551		
2623873007	GWC-22	SM 2540C	36551		
2623873008	GWC-21	SM 2540C	36551		
2623873009	GWC-20	SM 2540C	36551		
2623873010	GWC-19	SM 2540C	36551		
2623873011	GWC-18	SM 2540C	36551		
2623873012	GWC-23	SM 2540C	36551		
2623873013	GWC-9	SM 2540C	36551		
2623873001	GWC-5	EPA 300.0 Rev 2.1 1993	503542		
2623873002	GWC-6	EPA 300.0 Rev 2.1 1993	503542		
2623873003	GWC-8	EPA 300.0 Rev 2.1 1993	503542		
2623873004	FD-03	EPA 300.0 Rev 2.1 1993	503542		
2623873005	GWC-7	EPA 300.0 Rev 2.1 1993	503542		
2623873006	GWC-10	EPA 300.0 Rev 2.1 1993	503542		
2623873007	GWC-22	EPA 300.0 Rev 2.1 1993	503542		
2623873008	GWC-21	EPA 300.0 Rev 2.1 1993	503542		
2623873009	GWC-20	EPA 300.0 Rev 2.1 1993	503542		
2623873010	GWC-19	EPA 300.0 Rev 2.1 1993	503542		
2623873011	GWC-18	EPA 300.0 Rev 2.1 1993	503542		
2623873012	GWC-23	EPA 300.0 Rev 2.1 1993	503542		
2623873013	GWC-9	EPA 300.0 Rev 2.1 1993	503542		

Acce Arabytical

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

Saction 1		Section B							Sect	ion C											L						Г
Required	d Client Information:	Required I	Project	t Inform	ation:				Invoi	ice Info	rmation.	¥										Page		_	ŏ	n	
Company	V: Georgia Power - Coal Combustion Residuals	Report To:	Joju	I Abraha	E				Alten	ttion:	scsinv	oices@	southen	nco.con	F				Γ		J						
Address:	2480 Maner Road	Copy To:	Lau	rren Pett	y. Geosynt	ec			Com	pany Na	ame:																
Atlanta, C	3A 30339								Addr	ess:											and the second	- Re	julatory.	ABBINOV			20000
Email:	jabraham@southernco.com	Purchase (	Order #	ы С	S1038277	5			Pace	Quote:									Γ								
Phone:	(404)506-7239 Fax:	Project Nai	:8Ë	Plant H	lammond				Pace	h Project	Manage	er:	betsy.m	todaniel	1@pace	labs.cor	Ē					8	601//m	Setion 2			50924
Requeste	ad Due Date: Aandard TAT	Project #:	5	851					Pace	Profile	3	28 (Huff											GA				
														autrid		Bei	que ste	<b>WAININ</b>	MEI SIN	hered (V	UN)						1920600
	XIBTAM	CODE	(ftel of	(9MO)		JOLLECTE	ë				Pres	ervativ	se		RXX	Z	2	N	ر N	14 1 1	•				F	- 1995 - 1997 - 1997	inerin textitution
	SAMPLE ID Subsold	ater DW ler WT SL OL	see vslid codes	D=0 8ARD=0)	START		END	1 COLLECTIO	St						ic, Barium	muialsO ,	num, cobait lickel	muillsriT ,	1				(N/A) 91				-
# MƏTI	One Character per box. Wee (A-Z, 0-9 /, -) Ar Sample Ids must be unique Tissue	AR AR OT TS	MATRIX CODE	SAMPLE TYPE	AJE T	ME	TE	A SAMPI F TEMP A		H5SO4 Dubleserved	HCI EONH	NgOH	Na2S2O3 Methanol	Other	<b>292VIBRA</b>	Beryllium, Boror	Copper, Lead, N	reviiz ,muinele2	TDS, CI, F, SOA				Residual Chlori				
Ţ	GWC-5		Z	হ চ	200	137 10	1 0	th 5 &	32	-	-				>	5	1 7	۲ ۲	イ	-			2				
2	GWC-6		3	5	11	39 14	11	2	N	-					<b>&gt;</b>	1	8	YY	7				2				1
3	GNC-8		<u>N</u>	<u>ב</u> פ	1 12	191 ASI	13	5	2	-	~				>	>	7 7	7	>				2				1
4	FD-03		3	5	0/11		1 1	ğ	2	-	-				<u> </u>	<u>~</u>	>	7	<u>نر</u>				2			4	1
9	GWC-7		3	5	5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0) 88	1 15	8	1 2	-	-			ļ	>	2	2	7	>				2				-
9	/				ש 																						
Ъ					-	-							-														<b>—</b>
8																											7
(6)			$\mathbb{H}$					10				- 5										-					_
(0) (10)						+	$\left  \right $	Ħ		1di	11	5															-
μı										$\vdash$	$\downarrow$	$\downarrow$	$\mathbb{H}$														_
12																			T	H							
	AUDITIONAL COMMENTS		BELL	Iduishe	D. BV// AFFI	INOLIÁLI		DATE	E	<b>PINE</b>			NGGEPT	ED 87/1	AFFILIA	NOL			DATE		TTME		BAU	PLE CON	DITIONS		
		z	2	3	De la	çç	<u>5</u>	Å	P	Ā	<u>Å</u>	lore	4	<u>Mu</u>	Jem ,	/Gre	, state		10/01	141	2:0						_
		$\mathcal{N}_{\mathbf{b}}$	l.	nd.	ertar 1	(Greary	40 201	12/19	1	130	an	<u>I</u>	-	5	22			2	1.2.1	191	130						_
F		ĽIJ	1	7	Parc	6	to 1	2.19	5	32	2	Jew Y	Ŀ		Ľ	Z		9	रि	2	332	-113	-	- メ	ý	غر	
Page	MO#: 2623873	-							_					"				-	-								
27 (					¥8	APLERINA	(ME-AND	SIGNA	TURE														uo				_
of 30				-	$\frac{1}{1}$	RINT N	ame of Si	AMPLEI	کر ۳	ad	5	So										이에레	bevie	ioqA  }	) Jei Ja	l) ; səjdr	
)	<b>1 2 5 1 2 1 3 1 3 1 4 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</b>					SIGNATI	URE of SI	AMPLEF	Clea	2	\$	)	1			DATE \$	Signed:	2	X X X	6		VƏT	Defi Heci	ISN) N/A)		me2 Intac' V/Y)	

Pace Analytical

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

Section	A	Section B							Ŝ	ction C													L			(		'	
Requir	ad Client Information:	Required Pro	oject In	format	ü				Ę	oice In	format	iion:												Page		5	ð	$\mathbf{O}$	
Compa	Y: Georgia Power - Coal Combustion Residuals	Report To:	Joju A	braham					Ŧ	antion:	ÿ	sinvoic	es@sc	outherr	ICO.CO	ε													
Addres.	5: 2480 Maner Road	Copy To:	Laurer	T Petty.	Geosynte	U			õ	npany	Name:																		
Atlanta.	GA 30339								<u>§</u>	fress:											1996			BR	Diato	V//Agen	16		
Email:	jabraham @ southernco.com	Purchase Orc	der #:	SCS	1038277				Pa	ion O																			
Phone:	(404)506-7239 Fax:	Project Name	н Г	'lant Ha	puouu	ĺ			Ъã	se Proj	ect Mar	ager:	م	etsy.m	cdanie	1@pac	elabs.	۳.						9	17,018	ot at lo			
Reques	ted Due Date: STA NDARD THT	Project #:	3 S	656					Pa	ce Profi	e#:	328 (	(Huff)												0	đ			
																		edue	A leter	<b>Helval</b>	s giter	N/N)ipe	1.2						
	MATRIX	CODE	(1)91 01 9	(	C	OLLECTE	Q				đ	lesen	vative	s		NYA	V N	N	NN	1	r								
	SAMPLE ID Surveind With With With With With With With With	ater DW er WT SP WW	seboo bilisv ees	)=) GYUD=0)	START		END									1991	, Calcium	fladoO ,muin	Thallium Thallium						(N/A) 81				
# W3TI	One Character per box. Woo (A-Z, 0-9 /, -) Ar Ar Semple Ids must be unique Tissue	AR OT TS	) BOOD XIRTAM		۳ ۳	ур. Тру	те 13	ų		Dapreserved	HXO3	IOH	HOBN	LOREN COSSEN	Other	SBBVIBIA	Beryllium, Boron	Cadmium, Chron	Copper, Lead, N	oniS ,muibansV	TDS, CI, F, SO4		· · · · · · · · · · · · · · · · · · ·		Residual Chloric				•
F	GWC-10		~ <u>,</u>	2	-10 0-		<u>ğ</u>	201	2	-	-					F	7	~	7	~	7		-		2				6
×	GWC.22		5	ā	-14 11:	1-01 0	-14 N:c	3	7	-	-						2	>	7 4	۲	7		<u> </u>		2				1
9	GWC-21		2	101 5	-11 11-	1-91 hs	-14 12:	5	2	-	-				Γ		7	7	7	7	*				2				12
.6	Gwc- 20		5	2 10-1	-19 13:	50 50	19 13:	5	4	-	-						7	~	<u>&gt;</u>	~	~				2				5
10	GWC-19		1	· 10-1-	14 14	os Jo-i	16 14:	5	2	-	-						7	≻	γY	٢	۲				2				8
	ismic-16		NT C	5 10-1	-IA IS:	06 lo.1	M 15;	13 6	3:2		-					1	7	5	7 7	۲	۲				2				h
2																								$\square$	$\square$		,		ł
8				<u> </u>			·	┝╺		6		$\square$	$\left  \right $	$\square$	Π	╇	_								I				
8					5	2	<u>ه</u>				-																		
()			$\uparrow$																				_						
μ				-	<u> </u>												<u> </u>		-						<u> </u>				
12									-								ļ								<u> </u>				
	ADDITIONAL COMMENTS		ELNO	ISHED	<b>SV//AFFIL</b>	ATICIN	1	ATTE:		TIME	111.) 1711.2	ŝ	N)	C C F L	AB CE	AFFIL	NOTA			<u>1</u> 2.	ATTE:		UNE:		8	WIDIE!	HIGNOC	SNO	
		1 <b>7</b> 4.	2	R	Cosp	k	r-d	-19	_	b. 7	-	N	Ju		N	gen	2 [	والعقن	where	2	61 1 o		o, .0						
		Nor	Ę.	2010	where	(Juest	k. 10/	2/19	1	(رد : )		V,		-	La	20				9	2,10	אן ו	g						
		eł.	1	~~~ ~~~	ସୁ	•	10,	2,19	1	53	216	K	<u>ر</u> کې	6		41	Z			66	461	13	32	1/6	8	X	X	× .	
Pag	104:2623873																			<u> </u>	-	<u> </u>				_	-	~	
e 28			-1 1		N98	RUER NA	ME/AND/S	<b>AND</b>	TURE				u u		14		$\bar{h}_{\rm c}$							in the second					
of 3	ru: bu citent. <u>cobcrb</u>	- 61 /60 /				PRINT NE	me of SA	MPLEI	$\sum_{i=1}^{n}$	Ner Var	હ	1	ر د											Draig	, bevi	!	ېر مورک مورک	Sejo	4
0	VLIEN : UNFOURF-UVA					SIGNATL	RE of SA	HPLE	[]	N	ľ	•				$\vdash$	DAT	E Sign	ipe	ò	5	201	~	TEM	2008	(N/N) JCB	Seale Seale	(N/Y)	(N/V)

.

Face Analytical

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

Section A		Section B						Sectio	о г														_
Required Client Information:		Required P	roject Info	vrmation:				Invoice	) Informa	tion:							I		Page :	3	0	т С)	
Company: Georgia Power - Coal Comt	bustion Residuals	Report To:	Joju Abr	aham				Attentic	DN: SC	sinvoices	@ southe	mco.com											
Address: 2480 Maner Road		Copy To:	Lauren I	Petty, Geosy	ntec			Compa	ny Name.														
Atlanta, GA 30339								Addres	S:										igen	itetory A	Abuet		
Email: jabraham@southernco.com		Purchase Oi	rder #:	SCS10382	775			Pace C	huote:														
hone: (404)506-7239 Fax:	U	Project Nam	e: Pla	Int Hammon				Pace P	roject Ma	nager:	betsy.n	mcdaniel	@ pacela	bs.com,					<b>45</b>	the // L'one	Hons		
equested Due Date: Staudard	1151	Project #:	GWG	581				Pace P	rofile #:	328 (H	(fi									GA			
														Requ	tested At	H SIN H	(perei)	(N)					
	MATRIX	CODE	(1)01 (1) (1)01 (1)		COLLECT	E	1		۵.	reserva	tives		2	N N	N N	ママ							
SAMPLE ID	Drinking Wai Water Wasto Water Product Soul/Solid	1 in 1 in 1 in 1 in 1 in 1 in 1 in 1 in	3=CRAB C=C	STAP	►	END	COLLECTION	<u>د</u>					, Barium	Calcium ium, Cobalt	kel Thallium		<u> </u>			(N/4) 8			
One Character per box. (A.Z. 0-9/ , .) Semple Ids must be uniq.	. With Air Air Air Air Air Air Air Air Air Air	AR AR 15	a) agod Xirtra SAMPLE TYPE ((	DATE		ATE	RAMPLE TEMP AT	# ОF СОИТАІИЕРЗ 	HRO3 HSC0¢	N <sup>g</sup> OH HCI	Na2S2O3	Other	BOSVIBIA	Beryllium, Boron, Cadmium, Chrom	Copper, Lead, Nid Selenium, Silver,	Vanadium, Zinc TDS, CI, F. SO4							
1 CMC-23			<del>ک</del> ۲	10/119	2 3	1 10	17 2	12					~	77	7 7	7				-			7
2 GNC - 9			NT G	10/01	100	14 14	12 101	2	-				7	7	77					2			13
3									·				·	·							$  \rangle$		Γ
							-					<u> </u>		-		<u> </u>			$\square$	Ť			
6							╞			-						╞							
.6											╞	0		$\left  \right\rangle$	$\mathbf{h}$								
2									5			<u>[</u> ]											
8							2		Ð														
6						料																	
10.			$\square$		$\mathbb{N}$								[	-									
IJ		$\left  \right $				-																	
12					┢		$\vdash$		-					_	$\vdash$								
ADDITIONALE COMME	ekre		RELINQUES	BED(BY//AR	ILIATION		IDATE				Anderer	TED BY/	AFFILIA	N		¥0	TE	and a		MN/S	PLE COND	TIONS	
		Nou	lia M	luter /	lun care	ы К С	P1/20/1	ŝ	2	Ы	-1	4	3				ğ	1.20					
		đ		Parc	1	°	2.19	123	2	Rec.	N	H	ね	1		1/01	1 51	332	1.	<u>8</u> k			x
	670																			<u>-</u>			
	C/0				MPLEBIS		BIGNATI	URE	+	4										U			
occlient: GAPower-CCA	R R	SI /		8	PRINT PRINT	Name of S	AMPLER AMPLER:	R	lel.	5	Mrs	3		DATE Si	;jned:	<u> </u>			EWP in C	eceived o	Apoisn (N//	100000 (N/N)	tact (N/Y
								1/0	101	unr/	SM					2		5		8		ອ ເກີ	) u

Sam	nple Condition	Upon Receipt	WO#: 2623873	1997 - E
Face Analytical Client Name:	GAPOW	IN CCR	PM: BM Due Date: CLIENT: GRPower-CCR	10/09/19
Courier:  Fed Ex UPS USPS Clien Tracking #:	t Commercial	Pace Other	Optionar Proj Due Date: Proj Namé	
Custody Seal on Cooler/Box Present: Uyes	🗌 nơ 🛛 Seals i	intact: 🗹 yes 🛛	no	<u>0.11</u>
Packing Material: Dubble Wrap Bubble	Bags I None [	Other		
Thermometer Used	Type of Ice: Wet	Blue None	Samples on ice, cooling process has begur	
Cooler Temperature	Biological Tissue	is Frozen: Yes No Comments:	Date and Initials of person examining contents: 1/2//(Coff-	
Chain of Custody Present:		1		
Chain of Custody Filled Out:		2.	·	
Chain of Custody Relinquished:	Pres INO IN/A	3.		
Sampler Name & Signature on COC:	QYes ONO ON/A	4.	· · · · · · · · · · · · · · · · · · ·	
Samples Arrived within Hold Time:		5.		
Short Hold Time Analysis (<72hr):		6.		
Rush Turn Around Time Requested:		7.		
Sufficient Volume:		8.	ŧ	
Correct Containers Used:		9.		
-Pace Containers Used:				
Containers Intact:		10.		
Filtered volume received for Dissolved tests		11.		
Sample Labels match COC:		12.		
-Includes date/time/ID/Analysis Matrix:				
All containers needing preservation have been checked.		13.		
All containers needing preservation are found to be in compliance with EPA recommendation.				
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes ☑No	Initial when completed	preservative	
Samples checked for dechlorination:		14.		
Headspace in VOA Vials ( >6mm):		15.		
Trip Blank Present:		16.		
Trip Blank Custody Seals Present	□Yes □No ☑N/A		•	
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution:	Date	/Time:	Field Data Required? Y / N	
Comments/ Resolution:			······	
	<u></u>			
· · ·				
				<b></b>
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 14, 2019

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

RE: Project: PLANT HAMMOND HUFFAKER Pace Project No.: 2625374

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on November 07, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Batery Mr Damil

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

Enclosures

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





## CERTIFICATIONS

Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2625374

#### **Atlanta Certification IDs**

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



# SAMPLE SUMMARY

#### Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2625374

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2625374001	GWC-21	Water	11/06/19 12:12	11/07/19 14:30
2625374002	GWC-20	Water	11/06/19 13:44	11/07/19 14:30
2625374003	GWC-7	Water	11/06/19 15:10	11/07/19 14:30
2625374004	FB-01	Water	11/06/19 15:40	11/07/19 14:30
2625374005	EB-01	Water	11/06/19 15:45	11/07/19 14:30



# SAMPLE ANALYTE COUNT

Project: PLANT HAMMOND HUFFAKER

Pace Project No.:	2625374
-------------------	---------

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2625374001	GWC-21	EPA 6020B	CSW	1
		SM 2540C	ALW	1
2625374002	GWC-20	EPA 300.0	MWB	1
2625374003	GWC-7	EPA 6020B	CSW	1
2625374004	FB-01	EPA 6020B	CSW	2
		SM 2540C	ALW	1
		EPA 300.0	MWB	1
2625374005	EB-01	EPA 6020B	CSW	2
		SM 2540C	ALW	1
		EPA 300.0	MWB	1



#### Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2625374

Sample: GWC-21	Lab ID:	2625374001	Collected	: 11/06/19	12:12	Received: 11/	07/19 14:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical I	Method: EPA 6	020B Prepa	ration Met	hod: EP	A 3005A			
Calcium	74.9	mg/L	5.0	0.55	50	11/12/19 14:24	11/13/19 20:44	7440-70-2	
2540C Total Dissolved Solids	Analytical I	Method: SM 2	540C						
Total Dissolved Solids	336	mg/L	10.0	10.0	1		11/11/19 13:31		



Qual

# ANALYTICAL RESULTS

#### Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2625374

Sample:	GWC-20	Lab ID:	2625374002	Collected	d: 11/06/19	13:44	Received: 11	/07/19 14:30 M	latrix: Water	
				Report						
	Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	
300.0 IC	Anions 28 Days	Analytical	Method: EPA	300.0						
Sulfate		47.3	mg/L	1.0	0.017	1		11/11/19 16:43	14808-79-8	



Project:	PLANT HAMMOND HUFFAKER
----------	------------------------

Pace Project No.: 2625374

Sample: GWC-7	Lab ID:	2625374003	Collecte	d: 11/06/19	9 15:10	Received: 11/	07/19 14:30 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Prep	aration Met	thod: EP	A 3005A			
Arsenic	0.011	mg/L	0.0050	0.00035	1	11/12/19 14:24	11/13/19 20:49	7440-38-2	



#### Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2625374

Sample: FB-01	Lab ID: 2	2625374004	Collected	I: 11/06/19	15:40	Received: 11/	07/19 14:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical N	Method: EPA 6	6020B Prepa	aration Met	nod: EP	A 3005A			
Arsenic	ND	mg/L	0.0050	0.00035	1	11/12/19 14:24	11/13/19 21:41	7440-38-2	
Calcium	ND	mg/L	0.10	0.011	1	11/12/19 14:24	11/13/19 21:41	7440-70-2	
2540C Total Dissolved Solids	Analytical N	Method: SM 2	540C						
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		11/11/19 13:31		
300.0 IC Anions 28 Days	Analytical N	Method: EPA 3	300.0						
Sulfate	0.068J	mg/L	1.0	0.017	1		11/11/19 17:06	14808-79-8	



#### Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2625374

Sample: EB-01	Lab ID: 2	2625374005	Collecte	d: 11/06/19	15:45	Received: 11/	07/19 14:30 Ma	atrix: Water	
5			Report		55	<b>.</b> .		040 N	0
Parameters	Results	Units		MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical N	Method: EPA 6	020B Prep	aration Met	hod: EF	PA 3005A			
Arsenic	ND	mg/L	0.0050	0.00035	1	11/12/19 14:24	11/13/19 21:47	7440-38-2	
Calcium	ND	mg/L	0.10	0.011	1	11/12/19 14:24	11/13/19 21:47	7440-70-2	
2540C Total Dissolved Solids	Analytical N	Method: SM 2	540C						
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		11/11/19 13:31		
300.0 IC Anions 28 Days	Analytical M	Method: EPA 3	300.0						
Sulfate	ND	mg/L	1.0	0.017	1		11/11/19 17:29	14808-79-8	



Project:	PLANT HAMMON	ND HUFFAKER										
Pace Project No.:	2625374											
QC Batch:	38622		Anal	ysis Metho	d:	EPA 6020B						
QC Batch Method:	EPA 3005A		Anal	ysis Descri	iption:	6020B MET						
Associated Lab Sar	mples: 2625374	001, 2625374003,	262537400	04, 262537	4005							
METHOD BLANK:	175522			Matrix: W	/ater							
Associated Lab Sar	mples: 2625374	001, 2625374003,	262537400	04, 262537	4005							
			Bla	nk	Reporting							
Parar	meter	Units	Res	ult	Limit	MD	L	Analyzed	l Qi	ualifiers	i	
Arsenic		mg/L	0.0	00048J	0.005	0 0.	00035	11/13/19 20	:26			
Calcium		mg/L		ND	0.1	0	0.011	11/13/19 20	:26			
LABORATORY CO	NTROL SAMPLE:	175523										
			Spike	LC	CS	LCS	%	Rec				
Parar	meter	Units	Conc.	Re	sult	% Rec	Lir	nits	Qualifiers			
Arsenic		mg/L	0	.1	0.098	9	8	80-120		_		
Calcium		mg/L		1	1.0	10	1	80-120				
MATRIX SPIKE & M	MATRIX SPIKE DU	PLICATE: 1755	24		175525							
			MS	MSD								
		2625374003	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r Unit	s Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/	L 0.011	0.1	0.1	0.11	0.11	9	8 97	75-125	1	20	
Calcium	mg/	L 28.2	1	1	29.1	28.6	9	8 47	75-125	2	20	M6

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



Project:	PLANT HAMMON	D HUFFAKER						
Pace Project No.:	2625374							
QC Batch:	38558			Analysis Method:				
QC Batch Method:	SM 2540C		Analysis Description:		2540C Total Dis	ssolved Solids		
Associated Lab Samples: 2625374001, 2625374004, 2625374005								
LABORATORY CO	NTROL SAMPLE:	175190						
			Spike	LCS	LCS	% Rec		
Parameter		Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Soli	ds	mg/L	400	400	100	84-108		
SAMPLE DUPLICA	TE: 175191							
			2625426001	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Soli	ds	mg/L	151000 ug/l	- 1	49	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**

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



Project:	PLANT HAMMONI	D HUFFAKER										
Pace Project No .:	2625374											
QC Batch: 38587			Analy	Analysis Method:		EPA 300.0						
QC Batch Method: EPA 300.0		Analysis Description:		ption:	300.0 IC Anions							
Associated Lab San	nples: 262537400	02, 2625374004,	262537400	)5								
METHOD BLANK:	175341			Matrix: W	ater							
Associated Lab San	nples: 262537400	02, 2625374004,	262537400	)5								
			Blar	nk	Reporting							
Paran	neter	Units	Res	ult	Limit	MD	L	Analyzed	Qı	Jalifiers		
Sulfate		mg/L		ND	1.	.0	0.017 1	1/11/19 15:	58			
LABORATORY COM	NTROL SAMPLE:	175342	Spike			LCS	% F	lec				
Paran	neter	Units	Conc.	Res	sult	% Rec	Lim	iits (	Qualifiers			
Sulfate		mg/L	1	10	9.8	9	8	90-110		_		
MATRIX SPIKE & N	IATRIX SPIKE DUP	LICATE: 1753	43		175344							
			MS	MSD								
Parameter	r Units	2625374005 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	ND	10	10	9.8	9.8	98	98	90-110	0	15	
MATRIX SPIKE SAI	MPLE:	175345										
			2625381001		1 Spike	MS		MS		;		
Parameter		Units	Re	esult	Conc.	Result		% Rec	Limits		Qualif	iers
Sulfate		mg/L		95.1	10	9	93.1	-20	90	-110 M	1	_

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



## QUALIFIERS

Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2625374

#### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

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

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



# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2625374

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch																									
2625374001	GWC-21	EPA 3005A	38622	EPA 6020B	38720																									
2625374003	GWC-7	EPA 3005A	38622	EPA 6020B	38720																									
2625374004	FB-01	EPA 3005A	38622	EPA 6020B	38720																									
2625374005	EB-01	EPA 3005A	38622	EPA 6020B	38720																									
2625374001	GWC-21	SM 2540C	38558																											
2625374004	FB-01	SM 2540C	38558																											
2625374005	EB-01	SM 2540C	38558																											
2625374002	GWC-20	EPA 300.0	38587																											
2625374004	FB-01	EPA 300.0	38587																											
2625374005	EB-01	EPA 300.0	38587																											
				Τ				12	H			•	8	7	0	¢1	4	3	2	1	ITEM #		]	Requested I	Phone:	Email: jat	Allanta GA	Company:	Required C	Section A
-----------------	-----------	----------------	---	----------------	------	----------	-----------	---------------------	----------	----	--------------------	--------------	----------------------	----------------------	---	------------	-------	----------	----------------	----------	---	-------------	---------	------------------------	--------------------	----------------------	------------------	--	---------------------	------------------
								ADDITIONAL COMMENTS								E 15-01	FB-01	CTWC-7	C-1WC-20	(JWC-21	SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique			Due Date: standard TAT	(404)506-7239 Fax:	oraham@southemco.com	2460 Marter Hoad	Georgia Power - Coal Combustion Residu	Stient Information:	Analytical
			-		0/1	Jul Jul															Vetter DW Vetter Wase WW Prodel P Doubling SL Dial State Man OL Man AR Man MATRIX CODE		Project #:	Project Nam	Purchase Or	Copy To:	als Report To:	Required P	Section B	
				-1	18		ELINDU		+	-	$\left\{ \right\}$	_						21	<del>ر</del> ۍ	6	MATRIX CODE (see valid code	s to left)	11	ତ୍ୟ		der #	Laure	, nior	roject f	
				$\overline{n}$	12	K	ISHED		╋	╈	╢		_			+-	┝	دي ا	<u>יט</u>	<u> </u>	SAMPLE TYPE (G=GRAB C=(	COMP)	ł	ধু	Plant		en Peti	Abraha	Inform	
				5	K	R	BY I YB										╆╼━	<u> </u>	+-	6	ST ST			Ŭ.	Hamm	2103	N. Geo	ä	ation:	
SIGN	PRIN	SAMPLE		2	non	2	FFILIATIO				$\mathbb{A}$					1540	1532	1505	5551	1157	TIME	COLL	łİ	-	ond Hutta	30201	osyntec			
		RNAME			Grow	13	2					p				-			F		DAT	ECTED				ĺ				₽ <sup>®</sup>
of SAM	of SAM	AND SIC	╞		11	1			T	╞	+	Ħ				Ĩ.	FSI	ĩ	ū	121										IAIN- Chain-c
PLER	PLER:	ITANE		ھ	119	<b>N</b>	TE		╆	+	+	븊	·		-		e	2	1	~			IJ	1						Į Š
8	0	JRE		2	=	t	60					Ŧ	Ì			2	2	-	Ě	2	# OF CONTAINERS		łŀ	Pa			8	≩	į s	, <sup>§</sup> 2
2	ž			5	0	Æ	UME			L	Ŧ		٩			-	-			-	Unpreserved			28 Pro	28 Pro	dress	mpany	enlion	oice I	TSI
	a.	and the second		-		3			+	+	+	4				<u> </u>				<u> </u>	H2SO4		11	file #:		ŧ	Nan		inforn	, Ĕ <b>Ğ</b>
P	2	100	2		l f	K.	and and		+	+-	+	-+	+			<b>├</b> ^	-	-			HNO3	Pres		2	anao		ē	scsinv	nation	Ž Ž
*	ېک اکم	and a	8		TF	2	1. Co		1	+-	+	╢	-†								NaOH	erva		2019	8			Oices		ĕ 8
	õ		â		h.	R	ACCI				T									-	Na2S2O3	lives		URL I	Ţ			<b>S</b> SO		
$ \mathbf{n} $		0	L		1	2	EPTED	L_	1	+		_									Methanol			sy.mc				them		NT.
		110	5		6	V.	BY //	┝─					$\left\{ 1 \right\}$								Other			List In				8.8		≜ ä
		and and			2	5	IFFEL			Т	Т	T	+			~	~				Analyses Test	YAN		BdAl				"		eva <b>Re</b>
DATI							ATION		╀	╀─	+	╞	$\mathbf{H}$	-+		X	7			4	Calcium	۷l		SOBIBIC				1		nt fie
Sigr	- 1	200				Z.							$\square$			Υ	Y		X		SO4	¥	Requ	.com						ids j
ied:				Í		7		-	+	+	$\downarrow$	$\downarrow$	$\parallel$			1	٨			Y	TDS	Ń.	ested					1		18
1	- 1		-			<b>1</b>	100	-	┢	╉	╋	+	+	-+			-						Anal						Ì	ΞΣ
2		-	3		à	90	DATE		┢	╀─	+	+	-	-														00		
à			9		ĥ	a)	IN				T							_					ittered				-	-		≣
			2		Ξ	Ł l	E	⊢	-	+	+	+		$\left\{ + \right\}$			_	-					(NUA)				2			EN
			6		0	SS	1E		$\vdash$	┼	╋	╉	+	$\mathbf{H}$		-						-		2		No.				
TEMP	hin C		4				1				1			$\downarrow$					$\sub$				Sec. 1	St		Reg				
Recei	ved or	- <b>-</b>					84				Τ	]	-	+	T		2	<u>-</u>	<u>&lt;</u>	<u>ک</u>	Hesidual Chlorine (Y/N)			210/1		ulato				$= \omega$
ice (Y/N)							MPLE																	ocati		Y Ag			=	
Custo Sealed	dy I	1					COND																199	DN I		ney				
Coole (Y/N)	r						TION																1							
Sampl ntact	les	T	T																											
(Y/N)																							1000	100					Pa	age 15 of 16

	Sample Condition Up	oon Receipt	WO#: 262	5374
Pace Analytical Client Nai	me:		PN: BM Du CLIENT: GAPower-C	e Date: 11/14/19
Courier: D Fed Ex D UPS USPS Tracking #: Custody Seal on Cooler/Box Present: D	Client Commercial yes niô Seels inta	Pace Other	Proj- Neuties	
Packing Material: Bubble Wrap Bubble	ibble Bags 🗌 Norie 🗌	Other		
Thermometer Used AS	Type of Ice: Wet 1	Blue None	Samples on ice, cooling pr	cess has begun
Cooles Territoritum	Biological Tissue is I	F <b>rozen</b> : Yes No	Date and initials of pe	rson examining
Temp should be above freezing to 6°C	/ Cc	xmments:	contents:	
Chain of Custody Present:				
Chain of Custody Filled Out:				
Chain of Custody Relinquished:	TYPS INO IN/A 3.			
Sampler Name & Signature on COC:		- · · · · · ·	22	
Samples Arrived within Hold Time:	⊡Yes □No_ □N/A 5.			
Short Hold Time Analysis (<72hr):	UYes ONO/ ON/A 6.			8
Rush Turn Around Time Requested:		(9) (9)	/ =	
Sufficient Volume:	Dres DNO DN/A 8.		£	
Correct Containers Used:	QYes ONO ON/A 9.			
-Pace Containers Used:		5 B		
Containers Intact:		D.	2	6 B. B.
Filtered volume received for Dissolved tests		1.		
Sample Labels match COC:		2.		
-Includes date/time/ID/Analysis Matrix				
All containers needing preservation have been checke	ed. DYes DNo DN/A 1	3.		i. 25
All containers needing preservation are found to be compliance with EPA recommendation.	e in 🔄 Yes 🗆 No 🗆 N/A			
exceptions: VOA: coliform TOC O&C WLDBO (water)	□Yes ⊡No	nitial when completed	Lot # of added preservative	
Samples checked for dechlorination:		<u> </u>		·
Headsnace in VOA Vials ( >6mm):		5		
Trin Blank Present:		6	<u> </u>	
Trip Blank Custody Seals Present			i i	
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution:		S	Field Data Required?	Y / N
Person Contacted:	Date/Ti	me:		
Comments/ Resolution:				
	· · · · · · · · · · · · · · · · · · ·			
		- 20 -	3000 W28	
0				
Q				· · · · · · · · · · · · · · · · · · ·
Project Manager Review:		5.65	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)

÷ 3

•

1



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

December 06, 2019

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

RE: Project: PLANT HAMMOND HUFFAKER Pace Project No.: 2626198

Dear Joju Abraham:

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

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

Sincerely,

Kein Hung

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

Enclosures

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





#### CERTIFICATIONS

Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2626198

#### Pace Analytical Services Atlanta

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



#### SAMPLE SUMMARY

Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2626198

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
2626198001	GWC-21	Water	11/26/19 17:03	11/27/19 09:48	



#### SAMPLE ANALYTE COUNT

Project:	PLANT HAMMOND HUFFAKER
Pace Project No .:	2626198

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2626198001	GWC-21	EPA 6020B	CSW	1
		SM 2540C	ALW	1



#### ANALYTICAL RESULTS

#### Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2626198

Sample: GWC-21	Lab ID:	2626198001	Collected	: 11/26/19	17:03	Received: 11/2	27/19 09:48 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical N	Method: EPA 6	020B Prepa	aration Met	hod: EP	A 3005A			
Calcium	45.8	mg/L	5.0	0.55	50	12/04/19 19:40	12/06/19 12:00	7440-70-2	
2540C Total Dissolved Solids	Analytical I	Method: SM 2	540C						
Total Dissolved Solids	236	mg/L	10.0	10.0	1		12/02/19 12:37		



#### **QUALITY CONTROL DATA**

Project: Pace Project No.:	PLANT HAMMONE 2626198	HUFFAKER										
QC Batch:	39976		Anal	ysis Metho	od: E	PA 6020B						
QC Batch Method:	EPA 3005A		Anal	, ysis Descr	iption: 6	020B MET						
Associated Lab San	nples: 262619800	1										
METHOD BLANK:	181646			Matrix: W	Vater							
Associated Lab San	nples: 262619800	1										
			Bla	nk	Reporting							
Paran	neter	Units	Res	ult	Limit	MDI	L	Analyzed	d Qi	ualifiers		
Calcium		mg/L		0.031J	0.10	)	0.011	12/06/19 11	:09			
LABORATORY COM	NTROL SAMPLE:	181647										
			Spike	LC	CS	LCS	%	Rec				
Paran	neter	Units	Conc.	Re	sult	% Rec	Lir	nits	Qualifiers			
Calcium		mg/L		1	1.0	100	0	80-120				
MATRIX SPIKE & M	IATRIX SPIKE DUPI	-ICATE: 1816	48		181649							
			MS	MSD								
		2626196001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Calcium	mg/L	23.1	1	1	24.3	24.9	11:	5 182	2 75-125	3	20	

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



#### **QUALITY CONTROL DATA**

Project: Pace Project No.:	PLANT HAMMON 2626198	D HUFFAKER								
QC Batch:	39749		Analysis	Method:	SM 2540C					
QC Batch Method:	SM 2540C		Analysis	Description:	2540C Total	Dissolve	ed Solids			
Associated Lab Sar	nples: 26261980	01								
LABORATORY CO	NTROL SAMPLE:	180643								
			Spike	LCS	LCS	%	Rec			
Parar	neter	Units	Conc	Result	% Rec	Lir	nits	Qı	ualifiers	
Total Dissolved Soli	ds	mg/L	400	395	99		84-108			
SAMPLE DUPLICA	TE: 180644									
			262609900	1 Dup			Max			
Parar	neter	Units	Result	Result	RPD		RPD		Qualifiers	
Total Dissolved Soli	ds	mg/L	2	78	269	3		10		
SAMPLE DUPLICA	TE: 180645									
			262616400	1 Dup			Max			
Parar	neter	Units	Result	Result	RPD		RPD		Qualifiers	
Total Dissolved Soli	ds	mg/L	23	30 22	250	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.



#### QUALIFIERS

Project: PLANT HAMMOND HUFFAKER

Pace Project No.: 2626198

#### 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.



#### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:PLANT HAMMOND HUFFAKERPace Project No.:2626198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2626198001	GWC-21	EPA 3005A	39976	EPA 6020B	40001
2626198001	GWC-21	SM 2540C	39749		

Pace Analytical
1

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

Section A Required (	Cliant Information:	Section B Required Project Information:			Sectio	ы С e Infor	rmation										Pane		÷	č	-
Company:	Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham			Attent	ü	scsinv	oices@	souther	100.001	ε				Ē						
Address	2480 Maner Road	Copy To: Lauren Petty, Geo	osyntec		Comp	any Na	me								-	6	ļ,				Î
Atlanta, G	A 30339				Addre	SS:									0	AND DEVEN	Re	gulator	y Agenc	y	Charles and
Email: ja	sbraham@southernco.com	Purchase Order #:			Pace	Quote:															
Phone:	(404)506-7239 Fax	Project Name: Plant Hamm	nond Huffaker		Pace	Project	Manag	jer: I	kevin he	ming@	pacel	bs.com,				and the second		state / L	ocation	NY SE	Strange
Requested	d Due Date: 5	Project #: CVCS 81			Pace	Profile	ŧi.			ľ		4	6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.11		MAN		٩	•		
t	2 0 444 1				F	ļ				Ť		nbex	BSted A	Ualysts	Deletin	INIA	-	1994			
	MATRIX	(Solet)	COLLECTED	1			Pres	ervativ	8		Z N/Å	z								1 Charles	10 M
	SAMPLE ID Software	로 2 전 이 지 고 2 전 (GEGRAB C=C (GEGRAB C=C	ART	T COLLECTION	SF SF						1891							(N/Y) en			
# WƏTI	One Character per box. Whe (A.Z. 0-9 / , -) Oner Sample Ids must be unique Tasse	од д д д б МАТRIX СОDE SAMPLE ТҮРЕ В	TIME	Mere temp	# OF CONTAINE	H5204	EONH	HOP	loneriaM 802\$263	Other	Calcium Calcium	ŝat						nold) IsubiseR	\$		Cn L
-	3WC-21	1411 5 5	12/11 2021	17001	5	_	-				~	7						z			
/~																					
						-		F	-								-				
4																					
w																					
Q			۳ ۲			1															
7																					
8							1														
67									+												
10											/	/									
=													$\vdash$	7	$\neg$						
12											_	_				A	-A				
	ADDITIONAL COMMENTS	RELINQUISHED BY	AFFLATION	DATE	F	¥	No.	A	CCEPTI	ED BY	AFFILI	ATION	ALC: N	04	VTE	TIME	100	UČ	AMPLE C	ONDITION	5
		CLEAT RULD	2/200	VIBEN	52	10	Mu	aeli	N	le.	Jac	Ge	0	111	26/19	204	0				
		Merlia Muda	nd Greo	1( 77)	091	¥	S.	rang	00	il.	20	7/P	See	10/2	U/R	4:4					
		1					N	NE	) L	5	Z	PH	म्प		12	122	4	60	>	Z	
																Sec. Mar	1	+			
Page 1			SAMPLER NAM	E AND SIGNA			Kux	3				and the second second	1 mar	8.5			Ţ	ວດ po 		Â	se
0 of			SIGNATURE	of SAMPLER	5	1					$\vdash$	DATE Si	gned:	444	6/10				(N/A) 80	(N/N) geolec geolec	Sampl ntact (Y/N)
11					3														2	6	

$\sim$		·	<u> </u>		
Pace Analytical	Client Name:			Project #	
	Calone Humo.				
urler: 🔲 Fed Ex 🗍 UP acking #:			Pace Other	Ontonal Prot Date Date	
istody Seal on Cooler/Bo	x Present: 🗌 yes	🗌 no See	ls intact: U yes	no	19. A. A. A. A. A. A. A. A. A. A. A. A. A.
cking Material: 🔲 Bubb	le Wrap Bubble	Bags 🔲 Norlé	Other		
nermometer Used 👘 🗂	THEO83	Type of Ice: W	🖋 Biue None	Samples on ice, cooling pr	ocless has begun
ooler Temperature amp should be above freezing	4.8 ×	Biological Tiss	ue is Frozen: Yes Comments:	No Date and initials of po	ersson examining
hain of Custody Present:			VA 1.		
hain of Custody Filled Out:			V/A 2.		
hain of Custody Relinquish	ned:		N/A 3.		
ampler Name & Signature	on COC:		N/A 4.		
amples Arrived within Hold	I Time:	Dires []No []	N/A 5.		
ihort Hold Time Analysis	(<72hr):	OYes DNO D	N/A 6		
Rush Turn Around Time R	lequested:	🛛 Yes 🕼 🔾	N/A 7.	1	10-1
Sufficient Volume:		□Yes □No □	IN/A 8.	-	
Correct Containers Used:			IN/A 9.		
-Pace Containers Used:	S	🛛 Yes 🗔 No 🗌	]N/A		
Containers Intact:			JN/A 10.		
Filtered volume received fo	r Dissolved tests	□Yes □No □	]N/A 11.		
Sample Labels match COC	2	Yes No D	3N/A 12.	2	
-Includes date/time/ID/A	Analysis Matrix:	GW			
All containers needing preserva	tion have been checked.	□Yes □No [	□N/A 13.		
All containers needing presence compliance with EPA recomm	vation are found to be in endation.	□Yes □No [			
100	010 11/1 080 (uptod)		Initial when completed	Lot # of added preservative	
exceptions: VOA, conform, TOC,	UdG, WI-DRO (water)				
Samples checked for decr					
Headspace in VOA viais (	>6mm):				
Trip Blank Present:	-				
Trip Blank Custody Seals	Present	LIYes LINO			•
Pace Trip Blank Lot # (if p	urchased):		<u> </u>		
Client Notification/ Reso	olution:			Field Data Required?	Y / N
Person Contacted:		·	Date/Time:		
Comments/ Resolution:			S.		
	3		· · · · · · · · · · · · · · · · · · ·	<u> .</u>	
				3000 W28	<u> </u>

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

F-ALLC003rev.3, 11September2006

2

Data Validation Reports (Pending 2019 2nd semester)

Geosyntec<sup>></sup> consultants

# Memorandum

Date: June 3, 2019

To: Whitney Law

From: Kristoffer Henderson

CC: J. Caprio

Subject: Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2617140, 2617148, 2617207, 2617209, 2617267 and 2617269

# SITE: Plant Hammond-Huffaker Road Landfill

# **INTRODUCTION**

This report summarizes the findings of the Stage 2A data validation of seventeen aqueous samples, one field duplicate sample, two equipment blanks and two field blanks, collected 5-9 April 2019, as part of the Plant Hammond-Huffaker Road Landfill on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by EPA Methods 3005A/6020B and 3010A/6020B
- Mercury by EPA Method 7470A
- Anions by EPA Method 300.0
- Total Dissolved Solids (TDS) by Standard Method 2540C

## **EXECUTIVE SUMMARY**

Overall, based on this Stage 2A data validation covering the quality control (QC) parameters listed below and based on the information provided, the data as qualified are usable for meeting project objectives. The qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);

Laboratory ID	Client ID
2617140001	GWA-3
2617148001	FB-01
2617207001	FB-02
2617207002	EB-01
2617209001	GWA-1
2617209002	GWC-8
2617209003	GWC-7
2617209004	FD-02
2617209005	GWA-2
2617209006	GWC-9
2617209007	GWC-6

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2617209008	GWA-4
2617209009	GWA-11
2617209010	GWC-23
2617267001	GWC-5
2617267002	GWC-10
2617267003	GWC-20
2617267004	GWC-18
2617267005	GWC-19
2617267006	GWC-21
2617267007	GWC-22
2617269001	EB-02

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- 261740 and 2617267: The year was missing from the start and stop times for the sample collections.
- 2617140, 2617148, 2617207, 2617209, 2617267 and 2617269: The relinquishing signatures, dates and times were missing for the final sample transfers on the COCs.
- 2617209: A collection time was not listed on the COC for the field duplicate. The field duplicate was logged in with the collection time of 00:00.

Laboratory reports 2617148 and 2617209 were revised on April 16, 2019 to correct the units reported for the metals data, per the client's request.

Laboratory report 2617267 was revised on April 18, 2019 to remove the mercury data, per the client's request.

# 1.0 METALS

The samples were analyzed by EPA methods 3005A/6020B and 3010A/6020B. (Mercury was evaluated separately in Section 2.0, below).

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ⊗ Equipment Blank
- ⊗ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverable Review

# 1.1 <u>Overall Assessment</u>

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for these sample sets is 100%.

# 1.2 <u>Holding Time</u>

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

## 1.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 468622, 469500 and 26237). Metals were not detected in the method blanks above the method detection limits (MDLs).

## 1.4 <u>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two sample set specific MS/MSD pairs were reported using samples FB-01 and GWC-5. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

2617267: The recoveries of calcium were low and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample GWC-5. Since the calcium concentration in sample GWC-5 was greater than four times the spiked concentration and based on professional and technical judgment, no qualifications were applied to the data.

One batch MS/MSD pair was also reported. Since these were batch QC, the results do not affect the samples in these sample sets and qualifications were not applied to the data.

# 1.5 <u>Laboratory Control Sample (LCS)</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

# 1.6 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Metals were not detected in the equipment blanks above the MDLs, with the following exceptions.

Nickel (0.0071 mg/L) and zinc (0.0021 mg/L) were detected at estimated concentrations greater than the MDLs and less than the reporting limits (RLs) and chromium (0.028 mg/L) was detected above the RL in EB-02. Since chromium was not detected in the associated samples, no qualifications were applied to the chromium data. However, the nickel and zinc concentrations in the associated samples less than five times the equipment blank concentration were U\* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result	Laboratory Flag	Validation Result	Validation Qualifier**	Reason Code***
		(Ing/L)		(mg/L)		
GWA-3	Nickel	0.00075	J	0.00075	U*	BE
GWA-3	Zinc	0.0013	J	0.0013	U*	BE
GWA-1	Nickel	0.00034	J	0.00034	U*	BE
GWC-8	Nickel	0.00064	J	0.00064	U*	BE
GWC-8	Zinc	0.0012	J	0.0012	U*	BE
GWC-7	Nickel	0.030	NA	0.030	U*	BE
FD-02	Nickel	0.00068	J	0.00068	U*	BE
FD-02	Zinc	0.0013	J	0.0013	U*	BE
GWA-2	Zinc	0.0014	J	0.0014	U*	BE
GWC-9	Nickel	0.0021	J	0.0021	U*	BE
GWC-9	Zinc	0.0016	J	0.0016	U*	BE
GWC-6	Nickel	0.00032	J	0.00032	U*	BE
GWC-6	Zinc	0.0013	J	0.0013	U*	BE
GWA-4	Nickel	0.00089	J	0.00089	U*	BE
GWA-4	Zinc	0.0023	J	0.0023	U*	BE
GWA-11	Nickel	0.0023	J	0.0023	U*	BE
GWA-11	Zinc	0.0024	J	0.0024	U*	BE
GWC-23	Nickel	0.0011	J	0.0011	U*	BE
GWC-23	Zinc	0.0016	J	0.0016	U*	BE
GWC-5	Nickel	0.00098	J	0.00098	U*	BE

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier**	Reason Code***
GWC-18	Zinc	0.0037	J	0.0037	U*	BE
GWC-21	Nickel	0.0048	J	0.0048	U*	BE
GWC-21	Zinc	0.0041	J	0.0041	U*	BE
GWC-22	Chromium	0.0023	J	0.0023	U*	BE

mg/L-milligrams per liter

J-estimated concentration greater than the MDL and less than the RL

NA-not applicable

\*\* Validation qualifiers are defined in Attachment 1 at the end of this report

\*\*\*Reason codes are defined in Attachment 2 at the end of this report

#### 1.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Metals were not detected in the field blanks above the MDLs, with the following exceptions.

Barium (0.000078 mg/L) and calcium (0.024 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs and zinc (0.017 mg/L) was detected at a concentration greater than the RL in FB-01. Since barium and calcium were either not detected or detected at concentrations greater than five times the field blank concentration, no qualifications were applied to the barium and calcium data. However, the zinc concentrations in the associated samples less than five times the field blank concentrations in the associated at the reported concentrations.

Sample	Analyte	Laboratory	Laboratory	Validation	Validation	Reason
		Result	Flag	Result	Qualifier	Code
		(mg/L)		(mg/L)		
GWA-3	Zinc	0.0013	J	0.0013	U*	BF
GWC-8	Zinc	0.0012	J	0.0012	U*	BF
GWC-7	Zinc	0.051	NA	0.051	U*	BF
FD-02	Zinc	0.0013	J	0.0013	U*	BF
GWA-2	Zinc	0.0014	J	0.0014	U*	BF
GWC-9	Zinc	0.0016	J	0.0016	U*	BF
GWC-6	Zinc	0.0013	J	0.0013	U*	BF
GWA-4	Zinc	0.0023	J	0.0023	U*	BF
GWA-11	Zinc	0.0024	J	0.0024	U*	BF
GWC-23	Zinc	0.0016	J	0.0016	U*	BF
GWC-18	Zinc	0.0037	J	0.0037	U*	BF
GWC-21	Zinc	0.0041	J	0.0041	U*	BF

mg/L-milligrams per liter

J-estimated concentration greater than the MDL and less than the RL

NA-not applicable

# 1.8 <u>Field Duplicate</u>

One field duplicate, FD-02, was collected with the sample sets. Acceptable precision (RPD  $\leq$  20% or the difference < RL) was demonstrated between the field duplicate and the original sample, GWC-8.

#### 1.9 <u>Sensitivity</u>

The samples were reported to the MDLs. Elevated nondetect results were not reported.

## 1.10 <u>Electronic Data Deliverable (EDD) Review</u>

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flags C0, BC and M6 used in the level II reports were not included in the EDDs. In addition, there were EDDs that included project data for samples from different laboratory reports when the sample was used for laboratory batch QC (i.e., the sample in the other report was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

#### 2.0 MERCURY

The samples were analyzed by EPA method 7470A.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

# 2.1 Overall Assessment

The mercury data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for these sample sets is 100%.

## 2.2 Holding Time

The holding time for the mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

## 2.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 468895 and 26291). Mercury was not detected in the method blanks above the MDL.

## 2.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two batch MS/MSD pairs were reported. Since these were batch QC, the results do not affect the samples in these sample sets and qualifications were not applied to the data.

## 2.5 <u>Laboratory Control Sample</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

## 2.6 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. Mercury was not detected in the equipment blanks above the MDL.

## 2.7 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. Mercury was not detected in the field blanks above the MDL.

# 2.8 <u>Field Duplicate</u>

One field duplicate was collected, but was not analyzed for mercury.

#### 2.9 <u>Sensitivity</u>

The samples were reported to the MDLs. Elevated non-detect results were not reported.

## 2.10 <u>Electronic Data Deliverables Review</u>

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. There were EDDs that included project data for samples from different laboratory reports when the sample was used for laboratory batch (i.e., the sample in the other report was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

## 3.0 WET CHEMISTRY

The samples were analyzed for anions (chloride, fluoride and sulfate) by EPA method 300.0 and TDS by Standard Method 2540C.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- $\otimes$  Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

## 3.1 Overall Assessment

The wet chemistry data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to

the total number of analytical results requested on samples submitted for these analyses, for these sample sets is 100%.

# 3.2 <u>Holding Times</u>

The holding times for the chloride, fluoride and sulfate analyses of a water sample are 28 days from sample collection to analysis. The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding times were met for the sample analyses.

# 3.3 <u>Method Blank</u>

Three method blanks were reported for the anions (batches 26064, 26135 and 26352). The anions were not detected in the method blanks above the MDLs, with the following exceptions.

2617148, 2617207 and 2617209: Chloride (0.064 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 26135. Therefore, the chloride concentrations in the associated samples greater than the MDL and less than five times the method blank concentration were U\* qualified as not detected at the reported concentrations.

2617267 and 2617269: Chloride (0.31 mg/L) was detected at a concentration greater than the RL in the method blank in batch 26352. Therefore, the chloride concentrations in the associated samples greater than the MDL and less than five times the method blank concentration were U\* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
FB-01	Chloride	0.11	J	0.11	U*	BL
FB-02	Chloride	0.25	J	0.25	U*	BL
EB-01	Chloride	0.22	J	0.22	U*	BL
EB-02	Chloride	0.38	NA	0.38	U*	BL

mg/L-milligrams per liter

J-estimated concentration greater than the MDL and less than the RL NA-not applicable

# 3.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

One sample set specific MS/MSD pair using sample GWC-5 and two MSs using samples FB-02 and GWC-10 were reported for the anions. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of sulfate were low and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample GWC-5. Since the sulfate concentration in sample GWC-5 was

greater than four times the spiked concentration and based on professional and technical judgment, no qualifications were applied.

Two batch MSs and one batch MS/MSD pair were also reported for the anions. Since these were batch QC, the results do not affect the samples in these sample sets and qualifications were not applied to the data.

# 3.5 <u>Laboratory Control Sample</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for the anions and TDS. The recovery results were within the laboratory and SOP specified acceptance criteria.

# 3.6 <u>Laboratory Duplicate</u>

Five sample set specific laboratory duplicates were reported for TDS, using samples HGWC-120, HGWC-124, HGWC-105, GWC-9 and GWC-20. The RPD results were within the laboratory and SOP specified acceptance criteria.

One batch laboratory duplicate was also reported for TDS. Since this was batch QC, the result does not affect the samples in sample sets and qualifications were not applied to the data.

# 3.7 <u>Equipment Blank</u>

Two equipment blanks were collected with the sample sets, EB-01 and EB-02. The wet chemistry parameters were not detected in the equipment blanks above the MDLs, with the following exceptions.

TDS (12.0 mg/L), chloride (0.22 mg/L) and sulfate (0.38 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in EB-01. Since the chloride concentration in EB-01 was U qualified as not detected at the reported concentration due to the method blank contamination and TDS and sulfate were detected in the associated samples at concentrations greater than five times the equipment blank concentrations, no additional qualifications were applied to the data, based on professional and technical judgment.

# 3.8 Field Blank

Two field blanks were collected with the sample sets, FB-01 and FB-02. The wet chemistry parameters were not detected in the field blanks above the MDLs, with the following exceptions.

Chloride (0.11 mg/L) and sulfate (0.069 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in FB-01. Since the chloride concentration in FB-01 was U qualified as not detected at the reported concentration due to the method blank contamination and

sulfate was detected in the associated samples at concentrations greater than five times the field blank concentration, no additional qualifications were applied to the data, based on professional and technical judgment.

TDS (14.0 mg/L), chloride (0.25 mg/L) and sulfate (0.13 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in FB-02. Since the chloride concentration in FB-02 was U qualified as not detected at the reported concentration due to the method blank contamination and TDS and sulfate were detected in the associated samples at concentrations greater than five times the field blank concentrations, no additional qualifications were applied to the data, based on professional and technical judgment.

# 3.9 <u>Field Duplicate</u>

One field duplicate, FD-02, was collected with the sample sets. Acceptable precision (RPD  $\leq$  20% or the difference < RL) was demonstrated between the field duplicate and the original sample, GWC-8.

# 3.10 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

# 3.11 <u>Electronic Data Deliverable Review</u>

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flags B and M1 used in the level II reports were not included in the EDDs. In addition, there were EDDs that included project data for samples from different laboratory reports when the sample was used for laboratory batch (i.e., the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

\* \* \* \* \*

## ATTACHMENT 1 DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY Assigned by Geosyntec's Data Validation Team per the SOP

#### DATA QUALIFIER DEFINITIONS

- U\* This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

#### ATTACHMENT 2 DATA VALIDATION REASON CODES Assigned by Geosyntec's Data Validation Team per the SOP

<b>Reason Code</b>	Explanation
BL	Laboratory blank contamination. The result should be considered
	"not-detected."
BE	Equipment blank contamination. The result should be considered
	"not-detected."
BF	Field blank contamination. The result should be considered "not-
	detected."
L	LCS and LCSD recoveries outside acceptance limits, indeterminate
	bias
L-	LCS and/or LCSD recoveries outside of acceptance limits. The
	result may be biased low.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The
	result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result
	may be biased low.

Geosyntec<sup>></sup> consultants

# Memorandum

Date:July 1, 2019To:Whitney LawFrom:Kristoffer HendersonCC:J. CaprioSubject:Stage 2A Data Validations - Level II Data Deliverables – Pace<br/>Analytical Services, LLC Project Numbers 2619807, 2619847,<br/>2619851 and 2619925

#### SITE: Plant Hammond-Huffaker Road Landfill

#### INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of three aqueous samples and one equipment blank, collected 17-19 June 2019, as part of the Plant Hammond-Huffaker Road Landfill on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals (Barium, Boron and Calcium) by EPA Methods 3005A/6020B
- Anions (Chloride, Fluoride and Sulfate) by EPA Method 300.0
- Total Dissolved Solids (TDS) by Standard Method 2540C

## **EXECUTIVE SUMMARY**

Overall, based on this Stage 2A data validation covering the quality control (QC) parameters listed below and based on the information provided, the data are usable for meeting project objectives.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);

The following samples were analyzed and reported in the laboratory reports:

Freeport MGP Site 16 December 2015 Page 2

Laboratory ID	Client ID	Γ	Laboratory ID	Client ID
2619807001	EB-01		2619851001	GWC-8
2619847001	GWC-20		2619925001	GWC-6

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

- 2619807 and 2619851: The year was missing from the start and stop times for the sample collections.
- 2619807 and 2619847: The relinquishing signatures, dates and times were missing for the third sample transfers.
- 2619851: The relinquishing signatures, dates and times were missing for the fourth sample transfers.
- 2619925: The relinquishing signatures, dates and times were missing for the second sample transfers.

## 1.0 METALS

The samples were analyzed by EPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

# 1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for these sample sets is 100%.

# 1.2 <u>Holding Time</u>

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

# 1.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 30489 and 30563). Metals were not detected in the method blanks above the method detection limits (MDLs).

# 1.4 <u>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two batch MS/MSD pairs were reported. Since these were batch QC, the results do not affect the samples in these sample sets and qualifications were not applied to the data.

## 1.5 <u>Laboratory Control Sample (LCS)</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

## 1.6 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Metals were not detected in the equipment blank above the MDLs.

## 1.7 Field Blank

A field blank was not collected with the sample set.

# 1.8 <u>Field Duplicate</u>

A field duplicate was not collected with the sample set.

## 1.9 <u>Sensitivity</u>

The samples were reported to the MDLs. Elevated nondetect results were not reported.

# 1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The EDDs included project data for samples from different laboratory reports when the sample was used for laboratory batch QC (i.e., the sample in the other report was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

# 2.0 WET CHEMISTRY

The samples were analyzed for anions (chloride, fluoride and sulfate) by EPA method 300.0 and TDS by Standard Method 2540C.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

## 2.1 <u>Overall Assessment</u>

The wet chemistry data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to

the total number of analytical results requested on samples submitted for these analyses, for these sample sets is 100%.

# 2.2 <u>Holding Times</u>

The holding times for the chloride, fluoride and sulfate analyses of a water sample are 28 days from sample collection to analysis. The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding times were met for the sample analyses.

# 2.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported for the anions (batches 30603 and 30672). The anions were not detected in the method blanks above the MDLs.

# 2.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported for the anions, using sample GWC-6. The RPD result was within the laboratory and SOP specified acceptance criteria. However, the recoveries of sulfate were low and outside the laboratory and SOP specified acceptance criteria r. Since the sulfate concentration in sample GWC-6 was greater than four times the spiked concentration and based on professional and technical judgment, no qualifications were applied.

Two batch MSs and one batch MS/MSD pair were also reported for the anions. Since these were batch QC, the results do not affect the samples in these sample sets and qualifications were not applied to the data.

# 2.5 <u>Laboratory Control Sample</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for the anions and TDS. The recovery results were within the laboratory and SOP specified acceptance criteria.

## 2.6 <u>Laboratory Duplicate</u>

Two batch laboratory duplicates were reported for TDS. Since these were batch QC, the results do not affect the samples in the sample sets and qualifications were not applied to the data.

# 2.7 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Sulfate was not detected in the equipment blank above the MDL. However, TDS (14.0 mg/L), chloride (0.93 mg/L) and fluoride (0.38 mg/L) were detected at concentrations the RLs. Since TDS, chloride and sulfate were not reported in the associated samples, no qualifications were applied to the data.

## 2.8 Field Blank

A field blank was not collected with the sample sets.

# 2.9 <u>Field Duplicate</u>

A field duplicate was not collected with the sample sets.

# 2.10 Sensitivity

The samples were reported to the MDLs for the anions and to the RL for TDS. No elevated nondetect results were reported.

## 2.11 <u>Electronic Data Deliverable Review</u>

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag M1 used in the level II reports were not included in the EDDs. In addition, the EDDs included project data for samples from different laboratory reports when the sample was used for laboratory batch (i.e., the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

\* \* \* \* \*

## ATTACHMENT 1 DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY Assigned by Geosyntec's Data Validation Team per the SOP

#### DATA QUALIFIER DEFINITIONS

- U\* This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

## ATTACHMENT 2 DATA VALIDATION REASON CODES Assigned by Geosyntec's Data Validation Team per the SOP

<b>Reason Code</b>	Explanation
BL	Laboratory blank contamination. The result should be considered
	"not-detected."
BE	Equipment blank contamination. The result should be considered
	"not-detected."
BF	Field blank contamination. The result should be considered "not-
	detected."
L	LCS and LCSD recoveries outside acceptance limits, indeterminate
	bias
L-	LCS and/or LCSD recoveries outside of acceptance limits. The
	result may be biased low.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The
	result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result
	may be biased low.

Geosyntec<sup>▷</sup> consultants

# Memorandum

Date:July 10, 2019To:Whitney LawFrom:Kristoffer HendersonCC:J. CaprioSubject:Stage 2A Data Validation - Level II Data Deliverable - Pace<br/>Analytical Services, LLC Project Number 2620281

#### SITE: Plant Hammond-Huffaker Road Landfill

#### INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of two aqueous samples, collected 27 June 2019, as part of the Plant Hammond-Huffaker Road Landfill on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals (Barium and Calcium) by USEPA Methods 3005A/6020B
- Sulfate by USEPA Method 300.0

## **EXECUTIVE SUMMARY**

Overall, based on this Stage 2A data validation covering the quality control (QC) parameters listed below and based on the information provided, the data are usable for meeting project objectives.

The data were reviewed based on the pertinent methods referenced in the laboratory report, professional and technical judgment and the following documents:

- USEPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);

The following samples were analyzed and reported in the laboratory report:
Freeport MGP Site 16 December 2015 Page 2

Laboratory ID	Client ID	Laboratory ID	Client ID
2620281001	GWC-8	2620281002	GWC-20

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The following issue was noted with the chain of custody (COC) form:

• The relinquishing signature, date and time were missing for the second sample transfer.

#### 1.0 METALS

The sample was analyzed for barium and calcium by USEPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

#### 1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### 1.2 <u>Holding Time</u>

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 1.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported (batch 31193). Metals were not detected in the method blank above the method detection limits (MDLs).

#### 1.4 <u>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample GWC-8. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of calcium in the MS/MSD pair were high and outside the laboratory and SOP specified acceptance criteria. Since the calcium concentration in sample GWC-8 was greater than four times the spiked concentration, no qualifications were applied to the data, based on professional and technical judgment.

#### 1.5 <u>Laboratory Control Sample (LCS)</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS was reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

#### 1.6 Equipment Blank

An equipment blank was not collected with the sample set.

#### 1.7 Field Blank

A field blank was not collected with the sample set.

#### 1.8 <u>Field Duplicate</u>

A field duplicate was not collected with the sample set.

#### 1.9 <u>Sensitivity</u>

The samples were reported to the MDLs. Elevated nondetect results were not reported.

#### 1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The EDD included project data for samples from different laboratory reports when the sample was used for laboratory batch QC (i.e., the sample in the other report was used for the MS/MSD analyses). No other discrepancies were identified between the level II report and the EDD.

#### 2.0 SULFATE

The sample was analyzed for sulfate by USEPA method 300.0.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

#### 2.1 Overall Assessment

The sulfate data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

#### 2.2 Holding Times

The holding time for the sulfate analysis of a water sample is 28 days from sample collection to analysis. The holding time was met for the sample analysis.

#### 2.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported (batch 31128). Sulfate was detected in the method blank at an estimated concentration greater than the MDL and less than the reporting limit (RL). Since sulfate was detected in the associated sample at a concentration greater than five times the method blank concentration, no qualifications were applied to the data.

#### 2.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One batch MS and one batch MS/MSD pair were reported. Since these were batch QC, the results do not affect the sample in this sample set and qualifications were not applied to the data.

#### 2.5 <u>Laboratory Control Sample</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS was reported. The recovery result was within the laboratory and SOP specified acceptance criteria.

#### 2.6 Laboratory Duplicate

Laboratory duplicates were not reported with the data.

#### 2.7 Equipment Blank

An equipment blank was not collected with the sample set.

#### 2.8 Field Blank

A field blank was not collected with the sample set.

#### 2.9 <u>Field Duplicate</u>

A field duplicate was not collected with the sample set.

#### 2.10 Sensitivity

The sample was reported to the MDL. No elevated nondetect results were reported.

#### 2.11 <u>Electronic Data Deliverable Review</u>

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The EDD included project data for samples from different laboratory reports when the sample was used for laboratory batch (i.e., the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II report and the EDD.

\* \* \* \* \*

#### ATTACHMENT 1 DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY Assigned by Geosyntec's Data Validation Team per the SOP

#### DATA QUALIFIER DEFINITIONS

- U\* This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

#### ATTACHMENT 2 DATA VALIDATION REASON CODES Assigned by Geosyntec's Data Validation Team per the SOP

<b>Reason Code</b>	Explanation
BL	Laboratory blank contamination. The result should be considered
	"not-detected."
BE	Equipment blank contamination. The result should be considered
	"not-detected."
BF	Field blank contamination. The result should be considered "not-
	detected."
L	LCS and LCSD recoveries outside acceptance limits, indeterminate
	bias
L-	LCS and/or LCSD recoveries outside of acceptance limits. The
	result may be biased low.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The
	result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result
	may be biased low.

## Geosyntec <sup>></sup>

#### consultants

#### Memorandum

Subject:	Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 2623500, 2623749 and 2623794
CC:	J. Caprio
From:	Kristoffer Henderson
To:	Whitney Law
Date:	17 January 2020

#### SITE: Plant Hammond Huffaker

#### INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of seventeen aqueous samples, one field duplicate sample, one equipment blank and one field blank, collected 30 September -1 October 2019, as part of the Plant Hammond Huffaker on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C
- Chloride, Fluoride and Sulfate by USEPA Method 300.0

#### **EXECUTIVE SUMMARY**

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data as qualified are usable for meeting project objectives. Qualified data should be used within the limitations of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011); and,
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001).

2623793004

2623793005

2623872001

2623872002

2623873001

2623873002 2623873003

Laboratory IDClient ID2623793001GWA-22623793002GWA-12623793003GWA-3

GWA-4

GWA-11

FB-03

EB-03

GWC-5 GWC-6

GWC-8

Laboratory ID	Client ID
2623873004	FD-03
2623873005	GWC-7
2623873006	GWC-10
2623873007	GWC-22
2623873008	GWC-21
2623873009	GWC-20
2623873010	GWC-19
2623873011	GWC-18
2623873012	GWC-23
2623873013	GWC-9

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The following issues were noted with the chain of custody (COC) forms:

The following samples were analyzed and reported in the laboratory reports:

- 2623793 and 2623873: The year was missing for the sample collection times for samples GWA-2, GWA-1, GWC-5, GWC-6, GWC-8, FD-03 and GWC-7.
- 2623793: The relinquished by date and time were not documented for the final sample transfer.

#### 1.0 METALS

The samples were analyzed for metals by USEPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- $\otimes$  Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- $\otimes$  Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

DVR Huff CCR Sep-Oct 2019 engineers | scientists | innovators

#### 1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for the dataset is 100%.

#### 1.2 <u>Holding Time</u>

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 1.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 36434, 36492 and 36528). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exceptions.

2623793, 2623872 and 2623873: Zinc was detected at concentrations greater than the reporting limit (RL) in the method blanks in batches 36079 (0.013 mg/L), 36492 (0.0047 mg/L) and 36528 (0.0045 mg/L). Therefore, the zinc concentrations in the associated samples less than five times the method blank concentrations were U\* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result	Laboratory Flag	Validation Result	Validation Qualifier*	Reason Code**
		(mg/L)		(mg/L)		
GWA-2	Zinc	0.0043	JB	0.0043	U*	BL
GWA-1	Zinc	0.0032	JB	0.0032	U*	BL
GWA-3	Zinc	0.0045	JB	0.0045	U*	BL
GWA-4	Zinc	0.0059	JB	0.0059	U*	BL
GWA-11	Zinc	0.0040	JB	0.0040	U*	BL
FB-03	Zinc	0.0056	JB	0.0056	U*	BL
EB-03	Zinc	0.0059	JB	0.0059	U*	BL
GWC-5	Zinc	0.0053	JB	0.0053	U*	BL
GWC-6	Zinc	0.0056	JB	0.0056	U*	BL
GWC-8	Zinc	0.0055	JB	0.0055	U*	BL
FD-03	Zinc	0.0053	JB	0.0053	U*	BL
GWC-10	Zinc	0.0049	JB	0.0049	U*	BL
GWC-22	Zinc	0.0054	JB	0.0054	U*	BL
GWC-21	Zinc	0.0078	JB	0.0078	U*	BL
GWC-20	Zinc	0.0063	JB	0.0063	U*	BL
GWC-19	Zinc	0.0049	JB	0.0049	U*	BL

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
GWC-18	Zinc	0.0060	JB	0.0060	U*	BL
GWC-23	Zinc	0.0057	JB	0.0057	U*	BL
GWC-9	Zinc	0.0052	JB	0.0052	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

B-laboratory flag indicating analyte was detected in the associated method blank

\* Validation qualifiers are defined in Attachment 1 at the end of this report

\*\*Reason codes are defined in Attachment 2 at the end of this report

#### 1.4 <u>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two sample set specific MS/MSD pairs were reported using samples GWA-1 and GWC-9. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of calcium were high and outside the laboratory specified acceptance criteria in the MS/MSD pair using sample GWA-1. Since the calcium concentration in sample GWA-1 was greater than four times the spiked concentration, no qualifications were applied to the data.

The recoveries of calcium were low and outside the laboratory specified acceptance criteria in the MS/MSD pair using sample GWC-9. Since the calcium concentration in sample GWC-9 was greater than four times the spiked concentration, no qualifications were applied to the data.

One batch MS/MSD pair was also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

#### 1.6 Equipment Blank

One equipment blank was collected with the sample sets, EB-03. Metals were not detected in the equipment blank above the MDLs, with the following exceptions.

Calcium (0.016 mg/L) and zinc (0.0059 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in EB-03. Since the zinc concentration in EB-03 was U\* qualified due to method blank contamination and the calcium concentration in the associated

samples were greater than five times the equipment blank concentration, no additional qualifications were applied to the arsenic data.

#### 1.7 Field Blank

One field blank was collected with the sample sets, FB-03. Metals were not detected in the field blank above the MDLs.

Boron (0.011 mg/L), copper (0.00036 mg/L), nickel (0.00053 mg/L) and zinc (0.0056 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in FB-03. Since the zinc concentration in FB-03 was U\* qualified due to method blank contamination, no additional qualifications were applied to the zinc data, based on professional and technical judgment. However, the boron, copper and nickel concentrations in the associated samples less than five times the method blank concentrations were U\* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory	Laboratory	Validation	Validation	Reason
		Result	Flag	Result	Qualifier	Code
		(mg/L)		(mg/L)		
GWA-1	Boron	0.025	J	0.025	U*	BF
GWA-1	Nickel	0.00037	J	0.00037	U*	BF
GWA-4	Nickel	0.0013	J	0.0013	U*	BF
GWA-11	Boron	0.039	J	0.039	U*	BF
GWA-11	Nickel	0.0017	J	0.0017	U*	BF
GWC-5	Copper	0.00031	J	0.00031	U*	BF
GWC-5	Nickel	0.00088	J	0.00088	U*	BF
GWC-6	Boron	0.042	NA	0.042	U*	BF
GWC-6	Copper	0.00023	J	0.00023	U*	BF
GWC-6	Nickel	0.00042	J	0.00042	U*	BF
GWC-8	Boron	0.046	NA	0.046	U*	BF
GWC-8	Copper	0.00036	J	0.00036	U*	BF
GWC-8	Nickel	0.00063	J	0.00063	U*	BF
FD-03	Boron	0.046	NA	0.046	U*	BF
FD-03	Copper	0.00020	J	0.00020	U*	BF
GWC-7	Boron	0.050	NA	0.050	U*	BF
GWC-7	Copper	0.00034	J	0.00034	U*	BF
GWC-10	Boron	0.031	J	0.031	U*	BF
GWC-22	Copper	0.00031	J	0.00031	U*	BF
GWC-21	Copper	0.00084	J	0.00084	U*	BF
GWC-20	Boron	0.019	J	0.019	U*	BF
GWC-20	Copper	0.00023	J	0.00023	U*	BF
GWC-19	Copper	0.00019	J	0.00019	U*	BF
GWC-18	Copper	0.00037	J	0.00037	U*	BF
GWC-18	Nickel	0.0015	J	0.0015	U*	BF
GWC-23	Boron	0.024	J	0.024	U*	BF

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
GWC-23	Copper	0.00083	J	0.00083	U*	BF
GWC-9	Boron	0.018	J	0.018	U*	BF
GWC-9	Nickel	0.0022	J	0.0022	U*	BF

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL NA-not applicable

#### 1.8 <u>Field Duplicate</u>

One field duplicate sample was collected with the sample sets, FD-03. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations  $\leq RL$ ) was demonstrated between the field duplicate and the original sample GWC-8.

#### 1.9 <u>Sensitivity</u>

The samples were reported to the MDLs. Elevated nondetect results were not reported.

#### 1.10 Electronic Data Deliverables (EDDs) Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flags B and M6 used in the level II reports were not included in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

#### 2.0 WET CHEMISTRY

The samples were analyzed for TDS by Standard Method 2540C and chloride, fluoride and sulfate by USEPA method 300.0.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank

- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

#### 2.1 Overall Assessment

The wet chemistry data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for the dataset is 100%.

#### 2.2 <u>Holding Times</u>

The holding times for the analysis of a water sample for the wet chemistry parameters are listed below. The holding times were met for the sample analyses.

Analyte	Holding Time
TDS	7 days from collection to analysis
Chloride, Fluoride and Sulfate	28 days from collection to analysis

#### 2.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported for the anions (batches 36584, 503241 and 503542). The anions were not detected in the method blanks above the MDLs, with the following exception.

2623793: Chloride (0.030 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 36584. Since the chloride concentrations in the associated samples were greater than five times the method blank concentration, no qualifications were applied to the data.

#### 2.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

Two sample set MS/MSD pairs were reported using samples GWA-2 and GWC-10 for the anions. The RPD and recovery results were within the laboratory specified acceptance criteria, with the following exceptions.

The recovery of sulfate in the MS using sample GWA-2 was low and outside the laboratory specified acceptance criteria. Therefore, the sulfate concentration in sample GWA-2 was J qualified as estimated.

Batch MSs and MS/MSD pairs were also reported for the anions. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
GWA-2	Sulfate	17.5	M1	17.5	J	М-

mg/L- milligram per liter

M1-laboratory flag indicating matrix spike recovery exceeded QC limits

#### 2.5 <u>Laboratory Control Sample</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each analysis and batch as appropriate. The recovery results were within the laboratory specified acceptance criteria.

#### 2.6 <u>Laboratory Duplicate</u>

Three sample set specific laboratory duplicates were reported for TDS using samples GWA-3, EB-03 and GWC-7. The RPD results were within the laboratory specified acceptance criteria.

Batch laboratory duplicates were also reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 2.7 Equipment Blank

One equipment blank was collected with the sample sets, EB-03. The wet chemistry parameters were not detected in the equipment blank above the MDLs, with the following exceptions.

TDS (11.0 mg/L) was detected at a concentration greater than the RL in EB-03. Since TDS was detected at concentrations greater than five times the equipment blank concentration, no qualifications were applied to the data.

#### 2.8 Field Blank

One field blank was collected with the sample sets, FB-03. The wet chemistry parameters were not detected in the field blank above the MDLs.

#### 2.9 <u>Field Duplicate</u>

One field duplicate sample was collected with the sample sets, FD-03. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample GWC-8.

#### 2.10 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

#### 2.11 <u>Electronic Data Deliverables Review</u>

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag M1 used in the level II reports was not included in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

\* \* \* \* \*

#### ATTACHMENT 1 DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY Assigned by Geosyntec's Data Validation Team

#### **DATA QUALIFIER DEFINITIONS**

- U\* This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

#### ATTACHMENT 2 DATA VALIDATION REASON CODES Assigned by Geosyntec's Data Validation Team

<b>Reason Code</b>	Explanation
13	Other
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
Н	Holding time exceedance.
L	LCS and LCSD recoveries outside acceptance limits, indeterminate bias
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.

# Geosyntec<sup>></sup>

#### unants

#### Memorandum

Subject:	Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Number 2625374
CC:	J. Caprio
From:	Kristoffer Henderson
То:	Whitney Law
Date:	18 January 2020

#### SITE: Plant Hammond Huffaker

#### INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of three aqueous samples, one equipment blank and one field blank, collected 6 November 2019, as part of the Plant Hammond Huffaker on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C
- Sulfate by USEPA Method 300.0

#### **EXECUTIVE SUMMARY**

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data are usable for meeting project objectives.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011); and,
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001).

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2625374001	GWC-21
2625374002	GWC-20
2625374003	GWC-7

Laboratory ID	Client ID
2625374004	FB-01
2625374005	EB-01

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

The year was not documented on the chain of custody (COC) form for the sample collection times.

#### 1.0 METALS

The samples were analyzed for metals by USEPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

#### 1.1 <u>Overall Assessment</u>

The metals data reported in this package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for the dataset is 100%.

#### 1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 1.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported (batch 38622). Metals were not detected in the method blank above the method detection limits (MDLs), with the following exception.

Arsenic was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL). Since arsenic was not detected in the associated samples, no qualifications were applied to the data.

#### 1.4 <u>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample GWC-7. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exception.

The MSD recovery of calcium was low and outside the laboratory specified acceptance criteria. Since the calcium concentration in sample GWC-7 was greater than four times the spiked concentration, no qualifications were applied to the data.

#### 1.5 <u>Laboratory Control Sample (LCS)</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS was reported. The recovery results were within the laboratory specified acceptance criteria.

#### 1.6 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Metals were not detected in the equipment blank above the MDLs.

#### 1.7 Field Blank

One field blank was collected with the sample sets, FB-01. Metals were not detected in the field blank above the MDLs.

#### 1.8 Field Duplicate

One field duplicate sample was collected with the sample sets, FD-03. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample GWC-8.

#### 1.9 <u>Sensitivity</u>

The samples were reported to the MDLs. Elevated nondetect results were not reported.

#### 1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

#### 2.0 WET CHEMISTRY

The samples were analyzed for TDS by Standard Method 2540C and sulfate by USEPA method 300.0.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

#### 2.1 Overall Assessment

The wet chemistry data reported in this package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for the dataset is 100%.

#### 2.2 Holding Times

The holding times for the analysis of a water sample for the wet chemistry parameters are listed below. The holding times were met for the sample analyses.

Analyte	Holding Time
TDS	7 days from collection to analysis
Sulfate	28 days from collection to analysis

#### 2.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported for the sulfate (batch 38587). Sulfate was not detected in the method blank above the MDL.

#### 2.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

One sample set MS/MSD pair was reported for sulfate using sample EB-01. The RPD and recovery results were within the laboratory specified acceptance criteria.

One batch MS was also reported for the sulfate. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 2.5 <u>Laboratory Control Sample</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each analysis and batch as appropriate. The recovery results were within the laboratory specified acceptance criteria.

#### 2.6 <u>Laboratory Duplicate</u>

One batch laboratory duplicate was reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 2.7 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. The wet chemistry parameters were not detected in the equipment blank above the MDLs.

#### 2.8 Field Blank

One field blank was collected with the sample sets, FB-01. The wet chemistry parameters were not detected in the field blank above the MDLs, with the following exception.

Sulfate was detected at an estimated concentration greater than the MDL and less than the RL in FB-01. Since sulfate was detected in the associated sample at a concentration greater than five times the field blank concentration, no qualifications were applied to the data.

#### 2.9 <u>Field Duplicate</u>

One field duplicate sample was collected with the sample sets, FD-03. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample GWC-8.

#### 2.10 <u>Sensitivity</u>

The samples were reported to the MDLs. No elevated nondetect results were reported.

#### 2.11 <u>Electronic Data Deliverable Review</u>

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

\* \* \* \* \*

#### ATTACHMENT 1 DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY Assigned by Geosyntec's Data Validation Team

#### DATA QUALIFIER DEFINITIONS

- U\* This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

#### ATTACHMENT 2 DATA VALIDATION REASON CODES Assigned by Geosyntec's Data Validation Team

<b>Reason Code</b>	Explanation
13	Other
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
Н	Holding time exceedance.
L	LCS and LCSD recoveries outside acceptance limits, indeterminate bias
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.



180A Market Place Boulevard Knoxville, TN 37922 PH 865.330.0037 www.geosyntec.com

#### Memorandum

Subject:	Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Number 2626198
CC:	J. Caprio
From:	Kristoffer Henderson
To:	Whitney Law
Date:	18 January 2020

#### SITE: Plant Hammond Huffaker

#### **INTRODUCTION**

This report summarizes the findings of the Stage 2A data validation of one aqueous sample, collected 26 November 2019, as part of the Plant Hammond Huffaker on-site sampling event.

The sample was analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Calcium by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6020B
- Total Dissolved Solids (TDS) by Standard Method 2540C

#### **EXECUTIVE SUMMARY**

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below, the data are usable for meeting project objectives.

The data were reviewed based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011); and,
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001).

The following sample was analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2626198001	GWC-21

The sample was received within 0-6°C. No sample preservation issues were noted by the laboratory.

The year was not documented on the chain of custody (COC) form for the sample collection time. The relinquished by signature, data and time were not documented on the COC for the third sample transfer.

#### 1.0 CALCIUM

The sample was analyzed for calcium by USEPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

#### 1.1 Overall Assessment

The calcium data reported in this package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for the dataset is 100%.

#### 1.2 <u>Holding Time</u>

The holding time for the calcium analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 1.3 <u>Method Blank</u>

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported (batch 39976).

Calcium was detected at an estimated concentration greater than the method detection limit (MDL) and less than the reporting limit (RL). Since calcium was not detected in the associated sample, no qualifications were applied to the data.

#### 1.4 <u>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</u>

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One batch MS/MSD was reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 1.5 <u>Laboratory Control Sample (LCS)</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS was reported. The recovery result was within the laboratory specified acceptance criteria.

#### 1.6 Equipment Blank

An equipment blank was not collected with the sample set.

#### 1.7 Field Blank

A field blank was not collected with the sample set.

#### 1.8 Field Duplicate

A field duplicate was not collected with the sample set.

#### 1.9 <u>Sensitivity</u>

The sample was reported to the MDLs. Elevated nondetect results were not reported.

#### 1.10 Electronic Data Deliverable (EDD) Review

The results and sample ID in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

#### 2.0 TOTAL DISSOLVED SOLIDS

The sample was analyzed for TDS by Standard Method 2540C.

The areas of data review are listed below. A leading check mark ( $\checkmark$ ) indicates an area of review in which the data were acceptable. A preceding crossed circle ( $\otimes$ ) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

#### 2.1 Overall Assessment

The TDS data reported in this package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for the dataset is 100%.

#### 2.2 <u>Holding Times</u>

The holding time for the analysis of a water sample for TDS is 7 days from collection to analysis. The holding time was met for the sample analysis.

#### 2.3 <u>Laboratory Control Sample</u>

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS was reported. The recovery result was within the laboratory specified acceptance criteria.

#### 2.4 <u>Laboratory Duplicate</u>

Two batch laboratory duplicates were reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 2.5 Equipment Blank

An equipment blank was not collected with the sample set.

#### 2.6 Field Blank

A field blank was not collected with the sample set.

#### 2.7 <u>Field Duplicate</u>

A field duplicate was not collected with the sample set.

#### 2.8 <u>Sensitivity</u>

The sample was reported to the MDL. No elevated nondetect results were reported.

#### 2.9 <u>Electronic Data Deliverable Review</u>

The results and sample ID in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

\* \* \* \* \*

#### ATTACHMENT 1 DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY Assigned by Geosyntec's Data Validation Team

#### **DATA QUALIFIER DEFINITIONS**

- U\* This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

#### ATTACHMENT 2 DATA VALIDATION REASON CODES Assigned by Geosyntec's Data Validation Team

<b>Reason Code</b>	Explanation
13	Other
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
Н	Holding time exceedance.
L	LCS and LCSD recoveries outside acceptance limits, indeterminate bias
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.

### APPENDIX C2

Field Sampling Forms

Date: 2019-04-08 10:48:26

Project Information: Operator Name Company Name Project Name Site Name Latitude		Gra Geo GP- Plar 0° (	nt Walter syntec Consul <sup>:</sup> Plant Hammon t Hammond )' 0"	tants d	Pump Infor Pump Mod Tubing Typ Tubing Dia Tubing Ler	Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length			Alexis polyethylene 0.17 in 30 ft		
Sonde SN		588	863								
Turbidity Make/Model LaMotte 2020we			Pump placement from TOC ft								
Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water		GW 2 in ft 10 f 11.7	GWA-1 2 in ft 10 ft 11.73 ft		Pumping In Final Pump Total Syste Calculated Stabilizatio Total Volur	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped		200 mL/min 0.2239027 L 300 sec 3.6 in 5.5 L			
Low-Flow Sar	npling Stabiliz	zation Summary	/								
Stabilization	Time	Elapsed	Temp C +/- 0.5	рН +/- 0.2	SpCond μ9 +/- 5%	S/cmTurb NTU +/- 10	DTW ft	RDO mg/L +/- 10%	ORP mV +/- 10		
Last 5 Last 5 Last 5 Last 5 Last 5 Last 5	10:36:07 10:41:07 10:46:07	300.07 600.02 900.02	15.81 15.92 15.89	6.99 6.97 6.86	152.88 151.55 150.12	0.55 0.46 0.81	12.17 12.18 12.20	6.25 6.89 6.75	93.22 76.14 54.99		
Variance 0			nan	nan	nan			nan	nan		

-0.01

-0.11

0.12

-0.04

Notes

Variance 1

Variance 2

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EP A 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 40.03

-1.33

-1.43

0.64

-0.13

-17.08

-21.15

Grab Samples GWA-1 Grab Date: 2019-04-08 11:17:41

Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude		Dalt Gec GP- Plar 0° 0 0° 0	Dalton Anderson Geosyntec Consultants GP-Plant Hammond Plant Hammond 0° 0' 0" 0° 0' 0"			mation: el/Type e meter igth	Al po 0. ft	Alexis polyethylene 0.17 in ft		
Sonde SN		497	259							
Turbidity Make/Model LaMotte 2020we			Pump place	ement from TOC	ft					
Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water		GW. 2 in ft 10 f 6.13	GWA-2 2 in ft 10 ft 6.13 ft		Pumping Ir Final Pump Total Syste Calculated Stabilizatic Total Volun	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped		200 mL/min 0.09 L 300 sec 3.6 in 5 L		
Low-Flow Sar	npling Stabiliz	ation Summary	/							
	Time	Elapsed	Temp C	рН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV	
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10	
Last 5 Last 5 Last 5 Last 5 Last 5 Last 5	10:40:49 10:45:49 10:50:49	300.09 600.01 899.99	15.80 15.79 15.81	6.76 6.78 6.79	419.68 419.80 419.87	2.29 1.23 1.60	6.49 6.49 6.46	0.13 0.13 0.08	26.62 23.57 21.67	

Last 5					
Variance 0	nan	nan	nan	nan	nan
Variance 1	-0.02	0.02	0.13	-0.00	-3.04
Variance 2	0.03	0.01	0.06	-0.05	-1.90

#### Notes

Two Bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth =26.1

Grab Samples GWA-2 Grab
Date: 2019-04-05 15:17:20

ORP mV +/- 10 117.72

Project Infor	mation:				Pump Information:						
Operator Nat Company Na Project Name Site Name Latitude Longitude	me ime e	Grai Geo GP- Plar 0° C 0° C	Grant Walter Geosyntec Consultants GP-Plant Hammond Plant Hammond 0° 0' 0" 0° 0' 0"			el/Type pe meter ngth	Al po 0. 13	exis olyethylene 17 in 8 ft			
Sonde SN		588	863								
Turbidity Ma	ke/Model	LaN	otte 2020we		Pump plac	ement from TOC	C ft	ft			
Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water		GW/ 2 in ft 10 f 4.67	A-3 t 7 ft		Pumping Ir Final Pump Total Syste Calculated Stabilizatic Total Volur	nformation: bing Rate em Volume Sample Rate on Drawdown ne Pumped	20 0. 30 3. 7.	00 mL/min 1480245 L 00 sec 6 in 5 L			
Low-Flow Sa	mpling Stabiliz	zation Summary	/								
Stabilization	Time 15:05:18	Elapsed	Temp C +/- 0.5 16.61	рН +/- 0.2 6.85	SpCond μS +/- 5% 773.76	cm Turb NTU +/- 10 2.81	DTW ft 5.15	RDO mg/L +/- 10% 0.21			
	15 10 10	00000	10.01	0.00	7 9 1 9						

Last 5	15:10:18	600.02	16.93	6.80	767.99	2.49	5.14	0.22	104.78
Last 5	15:15:18	900.02	17.26	6.77	757.81	2.58	5.14	0.29	100.56
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.32	-0.05	-5.78			0.02	-12.94
Variance 2			0.33	-0.04	-10.17			0.07	-4.22

Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EP A 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 21.64

Grab Samples GWA-3 Grab Date: 2019-04-08 13:04:31

Operator Name Aaron Reeder Pump Model/Type	Alexis
Company Name Geosyntec Consultants Tubing Type	polyethylene
Project Name GP-Plant Hammond Tubing Diameter	0.17 in
Site Name Plant Hammond Tubing Length	38.0 ft
Latitude 0° 0' 0"	
Longitude 0° 0' 0"	
Sonde SN 513028	
Turbidity Make/ModelLaMotte 2020wePump placement from TOC	37.0 ft
Well Information: Pumping Information:	
Well ID GWA-4 Final Pumping Rate	200 mL/min
Well diameter2 inTotal System Volume	0.2596101 L
Well Total Depth 47.00 ft Calculated Sample Rate	300 sec
Screen Length 10 ft Stabilization Drawdown	3.6 in
Depth to Water9.83 ftTotal Volume Pumped	14 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	G/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:29:26	2999.95	15.93	6.88	750.66	0.75	10.16	0.96	72.70
Last 5	12:34:26	3299.95	15.93	6.86	745.99	0.71	10.17	0.91	72.90
Last 5	12:39:26	3599.94	15.98	6.84	745.45	1.01	10.16	0.81	73.00
Last 5	12:44:26	3899.93	16.09	6.83	747.52	1.12	10.18	0.85	72.69
Last 5	12:49:26	4199.92	16.11	6.82	737.39	1.61	10.18	0.80	72.89
Variance 0			0.05	-0.03	-0.54			-0.10	0.10
Variance 1			0.11	-0.00	2.07			0.04	-0.31
Variance 2			0.01	-0.01	-10.13			-0.05	0.20

### Notes

For AP wells:

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 21.8

Grab Samples GWA-4 Grab Date: 2019-04-08 16:18:38

Project Information:		Pump Information:	
Operator Name	Aaron Reeder	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	32.45 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	31.45 ft
Well Information:		Pumping Information:	
Well ID	GWA-11	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2348381 L
Well Total Depth	36.45 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.65 ft	Total Volume Pumped	22 L

Low-Flow Sa	ampling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	рН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:51:00	5103.90	16.12	6.61	198.56	12.32	15.97	0.49	0.88
Last 5	15:56:00	5403.89	16.17	6.61	199.42	10.12	15.95	0.50	0.38
Last 5	16:01:00	5703.89	16.14	6.61	198.70	10.00	15.97	0.46	-0.23
Last 5	16:06:00	6003.88	16.21	6.61	200.12	5.87	15.97	0.46	-0.83
Last 5	16:11:00	6303.87	16.19	6.61	200.37	4.87	15.96	0.46	-1.10
Variance 0			-0.03	-0.00	-0.72			-0.04	-0.61
Variance 1			0.07	-0.00	1.42			-0.00	-0.60
Variance 2			-0.01	-0.00	0.24			0.01	-0.27

### Notes

For AP wells:

Two bottles One 250-mil bottle with HNO3 for metals and one 500-mL plastic bottle for TDS and anions .Total depth = 36.45

Grab Samples GWA-11 Grab Date: 2019-04-09 09:28:53

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	13 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-5	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.1480245 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	4.46 ft	Total Volume Pumped	6 L

Low-Flow Sa	mpling Stabiliz	zation Summar	y						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:07:16	600.02	15.69	6.69	641.36	3.75	4.55	2.20	-6.49
Last 5	09:12:16	900.02	15.78	6.70	636.77	2.43	4.56	2.28	-8.34
Last 5	09:17:16	1200.01	15.83	6.71	638.10	1.94	4.56	2.57	-9.13
Last 5	09:22:16	1500.01	15.94	6.70	633.73	1.70	4.56	1.65	-9.50
Last 5	09:27:16	1800.01	16.11	6.72	631.95	1.04	4.56	0.17	-8.90
Variance 0			0.06	0.00	1.33			0.29	-0.79
Variance 1			0.11	-0.01	-4.36			-0.92	-0.36
Variance 2			0.17	0.02	-1.78			-1.48	0.59

### Notes

Two bottles: One 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 21.73

Grab Samples GWC-5 Grab Date: 2019-04-08 16:55:02

Project Information:		Pump Information:	
Operator Name	Dalton Anderson	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-6	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.11 ft	Total Volume Pumped	26 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:42:26	5999.82	17.53	7.01	493.49	2.49	15.20	0.72	-0.77
Last 5	15:47:26	6299.81	17.53	7.01	493.77	3.28	15.21	0.65	-2.88
Last 5	15:52:25	6599.80	17.46	7.01	498.00	2.82	15.21	0.60	-4.35
Last 5	15:57:25	6899.79	17.49	7.01	509.97	4.00	15.20	0.52	-6.09
Last 5	16:02:25	7199.78	17.53	7.00	503.68	3.02	15.20	0.45	-7.49
Variance 0			-0.07	0.00	4.23			-0.05	-1.47
Variance 1			0.03	-0.00	11.97			-0.09	-1.74
Variance 2			0.04	-0.00	-6.29			-0.06	-1.40

### Notes

Two Bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth =43.05

Grab Samples GWC-6 Grab Date: 2019-04-08 17:44:03

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	23 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-7	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.1926587 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	13.34 ft	Total Volume Pumped	21 L

Low-Flow Sa	ampling Stabiliz	zation Summary	,						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	1		+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	17:21:46	9910.94	17.47	6.28	430.42	6.33	13.74	0.16	-7.17
Last 5	17:26:46	10210.95	17.44	6.29	442.83	8.21	13.74	0.15	-7.36
Last 5	17:31:46	10510.94	17.38	6.27	441.73	7.74	13.73	0.16	-5.78
Last 5	17:36:46	10810.98	17.58	6.28	443.19	6.47	13.74	0.15	-5.79
Last 5	17:41:46	11110.96	17.53	6.26	435.45	6.01	13.74	0.15	-4.35
Variance 0			-0.07	-0.02	-1.10			0.00	1.58
Variance 1			0.20	0.00	1.46			-0.00	-0.01
Variance 2			-0.05	-0.01	-7.74			-0.00	1.44

### Notes

Two bottles: One 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 32.25

Grab Samples GWC-7 Grab Date: 2019-04-08 12:57:55

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	19 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWA-8	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.1748051 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	10.02 ft	Total Volume Pumped	11 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:35:04	2400.00	16.60	6.88	738.20	8.69	12.05	0.86	17.99
Last 5	12:40:04	2700.00	16.65	6.88	732.64	6.83	12.02	0.83	16.17
Last 5	12:45:04	3000.00	16.73	6.89	715.80	6.82	12.01	0.79	13.09
Last 5	12:50:04	3300.00	16.74	6.89	704.60	6.32	12.00	0.72	11.29
Last 5	12:55:04	3600.00	16.87	6.91	695.79	4.98	12.00	0.71	8.92
Variance 0			0.08	0.01	-16.84			-0.04	-3.09
Variance 1			0.00	-0.01	-11.20			-0.07	-1.80
Variance 2			0.13	0.02	-8.81			-0.01	-2.37

## Notes

Four bottles: Two 1-L plastic bottles with HNO3 for radium (EPA 9315/9320); one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth = 27.60

Grab Samples GWC-8 Grab FD-2 Grab at GWC-8 Date: 2019-04-08 13:14:26

Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN Turbidity Make/Model		Dali Geo GP- Plar 0° ( 0° (	con Anderson syntec Consul Plant Hammon It Hammond I' 0"	tants Id	Pump Infor Pump Mod Tubing Typ Tubing Dia Tubing Len	Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length Pump placement from TOC			Alexis polyethylene 0.17 in ft ft		
		497 LaN	259 lotte 2020we		Pump place						
Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water		GW 2 in ft 10 f 13.0	GWC-9 2 in ft 10 ft 13.03 ft		Pumping Ir Final Pump Total Syste Calculated Stabilizatic Total Volun	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped		200 mL/min 0.09 L 300 sec 3.6 in 9 L			
Low-Flow Sa Stabilization Last 5 Last 5	mpling Stabiliz Time 12:51:39 12:56:39	zation Summary Elapsed 300.02 600.01	/ Temp C +/- 0.5 17.31 17.40	pH +/- 0.2 6.69 6.70	SpCond µS +/- 5% 334.35 330.31	6/cm Turb NTU +/- 10 2.16 1.75	DTW ft 13.30 13.30	RDO mg/L +/- 10% 0.44 0.35	ORP mV +/- 10 -15.44 -17.37		
Last 5	13.01.39	900.00	17.57	0.72	329.19	1.00	13.31	0.32	-20.30		

Lusto					
Last 5					
Variance 0	nan	nan	nan	nan	nan
Variance 1	0.09	0.01	-4.04	-0.08	-1.93
Variance 2	0.17	0.02	-1.12	-0.03	-3.01

## Notes

> Two Bottles; one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth =52.48

Grab Samples GWC-9 Grab

Date: 2019-04-09 11:18:19

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	25 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-10	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2015856 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.63 ft	Total Volume Pumped	8 L

Low-Flow Sar	npling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:56:56	300.05	16.29	7.19	358.10	7.01	12.68	0.45	-53.33
Last 5	11:01:56	600.02	16.37	7.20	358.59	6.42	12.69	0.44	-53.25
Last 5	11:06:56	900.02	16.41	7.20	351.32	7.56	12.69	0.43	-57.72
Last 5	11:11:56	1200.02	16.55	7.22	349.02	5.75	12.70	0.45	-56.61
Last 5	11:16:56	1500.02	16.58	7.22	345.50	4.80	12.70	0.45	-59.05
Variance 0			0.05	-0.00	-7.28			-0.01	-4.47
Variance 1			0.13	0.02	-2.30			0.01	1.11
Variance 2			0.03	-0.00	-3.52			0.01	-2.44

### Notes

Two bottles: One 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EP A 6020B/7470A). Total depth = 34.48

Grab Samples GWC-10 Grab Date: 2019-04-09 10:32:37

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude	Dalton Anderson Geosyntec Consultants GP-Plant Hammond Plant Hammond 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in ft
Longitude	0° 0' 0"		
Surre Sin	497259	Dump placement from TOC	£1
Well Information:		Pumping Information:	
Well ID	GWC-18	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.43 ft	Total Volume Pumped	7 L

Low-Flow Sam	ıpling Stabiliz	ation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:58:43	300.09	17.00	7.22	365.53	3.17	13.58	1.42	93.79
Last 5	10:03:42	600.01	16.93	7.36	365.45	2.78	13.63	1.38	90.36
Last 5	10:08:42	900.00	17.00	7.42	363.38	1.46	13.69	1.35	90.93
Last 5	10:13:43	1200.03	17.08	7.48	361.59	1.97	13.71	1.38	90.83
Last 5									
Variance 0			-0.06	0.14	-0.08			-0.03	-3.43
Variance 1			0.06	0.06	-2.07			-0.03	0.57
Variance 2			0.09	0.06	-1.80			0.02	-0.11

### Notes

Two Bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth =57.1

Grab Samples Grab GWC-18 Date: 2019-04-09 12:25:16

	Pump Information:	
Dalton Anderson Geosyntec Consultants GP-Plant Hammond Plant Hammond 0° 0' 0" 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in ft
497259 LaMotte 2020we	Pump placement from TOC	ft
	Pumping Information:	
GWC-19 2 in ft 10 ft 18.49 ft	Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	200 mL/min 0.09 L 300 sec 3.6 in 7.5 L
	Dalton Anderson Geosyntec Consultants GP-Plant Hammond O° O' O" O° O' O" 497259 LaMotte 2020we GWC-19 2 in ft 10 ft 18.49 ft	Pump Information:Dalton AndersonPump Model/TypeGeosyntec ConsultantsTubing TypeGP-Plant HammondTubing DiameterPlant HammondTubing Length0° 0' 0"0° 0' 0"0° 0' 0"0° 0' 0"497259LaMotte 2020weLaMotte 2020wePump placement from TOCGWC-19Final Pumping Rate2 inTotal System VolumeftCalculated Sample Rate10 ftStabilization Drawdown18.49 ftTotal Volume Pumped

Low-Flow Sar	npling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:48:23	300.06	17.00	7.34	400.99	5.05	18.59	1.23	22.01
Last 5	11:53:23	600.01	17.05	7.37	397.39	5.11	18.59	0.81	13.69
Last 5	11:58:23	900.00	17.17	7.37	394.93	3.09	18.60	0.69	8.74
Last 5	12:03:24	1200.99	17.26	7.38	392.15	3.75	18.60	0.52	8.88
Last 5	12:08:24	1500.99	17.36	7.40	385.37	4.10	18.59	0.30	11.52
Variance 0			0.12	0.00	-2.45			-0.12	-4.95
Variance 1			0.09	0.00	-2.78			-0.17	0.14
Variance 2			0.10	0.03	-6.78			-0.22	2.64

### Notes

Two Bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EPA 6020B/7470A). Total depth =57.11

Grab Samples GWC-19 Grab Date: 2019-04-09 14:08:31

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	26 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-20	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.206049 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	2.99 ft	Total Volume Pumped	18 L

Low-Flow Sa	ampling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	1		+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:46:53	3600.00	17.08	7.26	388.30	5.43	3.84	0.44	-85.71
Last 5	13:51:53	3899.99	16.91	7.26	386.90	4.87	3.84	0.51	-85.48
Last 5	13:56:53	4199.99	16.93	7.25	385.53	6.13	3.85	0.57	-84.50
Last 5	14:01:53	4499.99	17.23	7.26	381.85	5.19	3.85	0.58	-82.89
Last 5	14:06:53	4799.99	16.87	7.26	376.90	4.70	3.85	0.59	-81.36
Variance 0			0.02	-0.01	-1.37			0.06	0.98
Variance 1			0.30	0.01	-3.68			0.01	1.60
Variance 2			-0.36	0.00	-4.94			0.01	1.53

### Notes

Two bottles: One 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and IV metals (EP A 6020B/7470A). Total depth = 31.46

Grab Samples GWC-20 Grab Date: 2019-04-09 10:47:41

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-21	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	4.91 ft	Total Volume Pumped	6.8 L

Low-Flow Sa	mpling Stabiliz	zation Summary	V						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:04:56	1200.02	13.90	6.56	294.05	0.25	5.17	0.82	3.86
Last 5	10:09:56	1500.02	14.18	6.51	283.88	0.25	5.10	0.80	3.05
Last 5	10:14:56	1800.02	14.26	6.49	282.88	0.33	5.10	0.97	2.04
Last 5	10:19:56	2100.02	14.40	6.47	276.91	0.41	5.10	0.90	1.32
Last 5	10:24:56	2400.02	14.41	6.46	273.50	0.39	5.10	0.95	2.06
Variance 0			0.09	-0.02	-0.99			0.17	-1.01
Variance 1			0.14	-0.02	-5.98			-0.06	-0.72
Variance 2			0.01	-0.00	-3.41			0.05	0.74

### Notes

Two bottles: One 500-mL plastic bottle for TDS and anions and one 250-mL plastic bottle with HNO3 for metals. Total depth = 18.34 ft.

Grab Samples GWC-21 Grab Date: 2019-04-09 13:04:36

Project Information:		Pump Information:	
Operator Name Company Name	Noelia Muskus Geosyntec Consultants	Pump Model/Type Tubing Type	Alexis polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-22	Final Pumping Rate	140 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	1.83 ft	Total Volume Pumped	8.5 L

Low-Flow Sa	ampling Stabiliz	zation Summary	V						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:28:46	2100.02	19.15	7.50	355.83	5.71	2.49	0.40	-61.18
Last 5	12:33:46	2400.02	19.32	7.49	355.43	5.17	2.49	0.35	-73.04
Last 5	12:38:46	2700.02	19.33	7.49	355.62	5.71	2.51	0.32	-80.82
Last 5	12:43:46	3000.02	18.83	7.50	354.83	5.43	2.53	0.34	-78.03
Last 5	12:48:47	3300.61	18.80	7.49	356.83	4.52	2.53	0.44	-85.52
Variance 0			0.01	-0.00	0.19			-0.03	-7.78
Variance 1			-0.50	0.02	-0.79			0.02	2.79
Variance 2			-0.04	-0.02	2.00			0.10	-7.50

### Notes

Two bottles: One 500-mL plastic bottle for TDS and anions and one 250-mL plastic bottle with HNO3 for metals. Total depth = 42.16 ft.

Grab Samples GWC-22 Grab Date: 2019-04-08 16:01:27

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	364452		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-23	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	7.96 ft	Total Volume Pumped	16.7 L

Low-Flow Sa	mpling Stabiliz	zation Summary	V						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:13:54	8101.76	16.64	6.89	306.38	5.79	8.16	0.17	-48.76
Last 5	15:18:54	8401.76	16.61	6.88	306.07	5.33	8.16	0.16	-49.06
Last 5	15:23:54	8701.76	16.69	6.88	306.08	5.18	8.16	0.16	-49.12
Last 5	15:28:54	9001.76	16.65	6.87	306.23	5.29	8.16	0.15	-48.90
Last 5	15:33:54	9301.76	16.74	6.88	306.16	4.89	8.16	0.13	-49.13
Variance 0			0.09	-0.00	0.01			-0.00	-0.06
Variance 1			-0.04	-0.01	0.15			-0.01	0.22
Variance 2			0.09	0.00	-0.07			-0.01	-0.23

### Notes

Two bottles: One 500-mL plastic bottle for TDS and anions and one 250-mL plastic bottle with HNO3 for App. III and D&O metals. Total depth = 50.02 ft.

Grab Samples GWC-23 Grab Date: 2019-06-19 10:42:48

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude	Dalton Anderson Geosyntec Consultants GP-Plant Hammond Plant Hammond 0° 0' 0" 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in ft
Sonde SN	642533		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-6	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft .	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	16.59 ft	Iotal Volume Pumped	10 L

Low-Flow Sa	ampling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	1		+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:06:04	900.00	19.29	7.01	505.59	11.50	16.68	0.18	-29.00
Last 5	10:11:04	1200.00	19.39	7.02	499.74	10.12	16.70	0.17	-33.55
Last 5	10:16:04	1499.99	19.46	7.02	498.51	7.36	16.71	0.19	-37.69
Last 5	10:21:04	1799.98	19.39	7.02	500.58	6.74	16.71	0.14	-41.95
Last 5	10:26:04	2099.98	19.48	7.03	499.79	4.03	16.72	0.15	-45.34
Variance 0			0.07	0.01	-1.23			0.03	-4.14
Variance 1			-0.07	-0.00	2.07			-0.05	-4.26
Variance 2			0.08	0.01	-0.79			0.00	-3.39

## Notes

Parameters to be analyzed Sulfate. Total depth= 43.09 ft

Grab Samples GWC-6 Grab Date: 2019-06-18 13:40:32

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	20 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-8	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.1792685 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.75 ft	Total Volume Pumped	7 L

Low-Flow S	ampling Stabiliz	zation Summary	Y						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	n		+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:18:58	1504.02	18.99	6.76	852.99	4.57	15.22	0.10	-22.05
Last 5	13:23:58	1804.02	19.30	6.78	830.47	3.60	15.23	0.11	-25.36
Last 5	13:28:58	2104.02	19.30	6.81	804.02	4.23	15.24	0.11	-28.78
Last 5	13:33:58	2404.02	19.06	6.84	774.04	3.97	15.26	0.11	-30.98
Last 5	13:38:58	2704.02	19.39	6.85	770.46	3.24	15.28	0.14	-32.55
Variance 0			0.00	0.03	-26.45			0.01	-3.43
Variance 1			-0.25	0.03	-29.97			-0.01	-2.20
Variance 2			0.34	0.01	-3.59			0.03	-1.56

# Notes

Parameters to be analyzed: Barium, Calcium. Total depth =27.60

Grab Samples GWC-8 Grab Date: 2019-06-18 14:08:24

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude	Dalton Anderson Geosyntec Consultants GP-Plant Hammond Plant Hammond 0° 0' 0" 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in ft
Sonde SN	642533		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-20	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to water	5.31 IT	iotal volume Pumped	5 L
Low-Flow Sampling Stabilizat	ion Summary		

	Time	Elapsed	Temp C	рН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:37:44	300.02	19.42	7.33	401.48	0.69	5.90	0.27	-39.46
Last 5	13:42:44	600.01	19.34	7.34	399.83	0.66	5.92	0.20	-55.56
Last 5	13:47:44	900.00	19.13	7.35	399.82	0.59	5.93	0.17	-75.37
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.08	0.01	-1.66			-0.08	-16.10
Variance 2			-0.22	0.00	-0.01			-0.03	-19.81

## Notes

Parameters to be analyzed Sulfate. Total depth= 31.49 ft

Grab Samples GWC-20 Grab Date: 2019-06-27 14:12:45

Project Information:		Pump Information:	
Operator Name	Dalton Anderson	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-8	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.39 ft	Total Volume Pumped	7 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:45:06	900.01	19.38	7.00	608.18	6.80	14.65	1.47	-39.67
Last 5	13:50:06	1200.00	19.28	7.02	601.81	6.49	14.67	1.21	-42.72
Last 5	13:55:06	1500.00	19.17	7.03	598.87	3.22	14.67	0.99	-44.52
Last 5	14:00:06	1799.99	19.19	7.04	596.58	3.44	14.68	0.58	-46.31
Last 5	14:05:06	2099.99	19.19	7.05	592.25	3.90	14.70	0.39	-47.67
Variance 0			-0.11	0.01	-2.95			-0.23	-1.80
Variance 1			0.02	0.01	-2.29			-0.41	-1.79
Variance 2			-0.00	0.01	-4.33			-0.19	-1.36

## Notes

Parameters to be analyzed barium and calcium. Total depth = 28.51 ft

Grab Samples GWC-8 Grab Date: 2019-06-27 13:00:11

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude	Dalton Anderson Geosyntec Consultants GP-Plant Hammond Plant Hammond 0° 0' 0" 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in ft
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID Well diameter Well Total Depth Screen Length Depth to Water	GWC-20 2 in ft 10 ft 5.19 ft	Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	200 mL/min 0.09 L 300 sec 3.6 in 18 L

Low-Flow S	ampling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	ı		+/- 0.5	+/- 0.2	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:32:50	3899.85	19.84	7.27	382.93	0.29	6.01	0.72	-52.68
Last 5	12:37:50	4199.85	19.85	7.28	383.54	0.20	6.02	0.55	-58.15
Last 5	12:42:50	4499.84	19.85	7.29	384.41	0.22	6.02	0.58	-63.08
Last 5	12:47:50	4799.84	19.84	7.30	385.73	0.33	6.03	0.52	-67.94
Last 5	12:52:51	5100.83	19.86	7.31	386.55	0.31	6.03	0.40	-72.68
Variance 0			0.01	0.01	0.87			0.03	-4.93
Variance 1			-0.01	0.01	1.32			-0.07	-4.86
Variance 2			0.01	0.01	0.81			-0.11	-4.74

# Notes

Parameters to be analyzed Sulfate. Total depth = 31.47 ft

Grab Samples GWC-20 Grab Date: 2019-09-30 16:44:04

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	34.83 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	34.83 ft
Well Information:		Pumping Information:	
Well ID	GWA-1	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.245461 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	18.41 ft	Total Volume Pumped	4.25 L

Low-Flow Sa	ampling Stabiliz	zation Summar	y						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:01:55	300.08	20.92	7.17	183.29	1.34	18.65	1.32	-6.51
Last 5	16:06:55	600.03	20.48	7.13	179.47	0.63	18.66	0.64	-15.09
Last 5	16:11:55	900.02	20.32	7.10	179.88	0.65	18.67	0.41	-23.15
Last 5	16:16:55	1200.02	20.39	7.11	181.05	2.12	18.67	0.34	-28.48
Last 5	16:21:55	1500.02	20.48	7.15	182.37	0.85	18.67	0.35	-37.54
Variance 0			-0.16	-0.04	0.42			-0.23	-8.06
Variance 1			0.07	0.01	1.17			-0.07	-5.33
Variance 2			0.09	0.04	1.32			0.01	-9.06

### Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O Metals (EPA 6020B/7470A). Total depth = 40.04'

Grab Samples GWA-1 Grab Date: 2019-09-30 14:44:00

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	20.92 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	20.92 ft
Well Information:		Pumping Information:	
Well ID	GWA-2	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.1833748 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	9.63 ft	Total Volume Pumped	4.5 L
Low-Flow Sampling Stabilizat	ion Summary		

	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5 Last 5 Last 5 Last 5 Last 5	14:15:58 14:20:58 14:25:58	300.04 600.02 900.02	23.88 23.14 22.98	6.82 6.85 6.86	426.21 423.44 421.58	1.81 0.62 1.11	9.99 9.97 9.98	0.30 0.20 0.16	-106.50 -106.94 -108.18
Last 5 Variance 0 Variance 1 Variance 2			nan -0.74 -0.16	nan 0.03 0.01	nan -2.77 -1.86			nan -0.09 -0.05	nan -0.44 -1.25

## Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O Metals (EPA 6020B/7470A). Total depth = 26.11'

Grab Samples GWA-2 Grab Date: 2019-09-30 14:59:51

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	18.45 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	16.45 ft
Well Information:		Pumping Information:	
Well ID	GWA-3	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.1723502 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	7.71 ft	Total Volume Pumped	5 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:26:55	300.03	24.64	6.78	767.34	6.49	8.05	0.21	99.35
Last 5	14:31:55	600.02	24.38	6.79	765.82	6.78	8.05	0.18	89.68
Last 5	14:36:55	900.02	24.44	6.78	762.18	4.78	8.06	0.15	84.08
Last 5	14:41:55	1200.03	24.62	6.76	757.21	4.22	8.06	0.15	79.91
Last 5	14:46:55	1500.03	24.69	6.73	752.35	3.27	8.06	0.14	75.98
Variance 0			0.07	-0.01	-3.64			-0.02	-5.60
Variance 1			0.18	-0.02	-4.97			-0.01	-4.17
Variance 2			0.07	-0.02	-4.86			-0.01	-3.93

Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O Metals (EPA 6020B/7470A). Total depth = 21.63'

Grab Samples GWA-3 Grab Date: 2019-09-30 16:04:25

Operator NameDan GibbsPump Model/TypeAlexisCompany NameGeosyntec ConsultantsTubing TypepolyethyleProject NameGP-Plant HammondTubing Diameter0.17 inSite NameDlant HammondTubing Diameter19.51 ft	
Company NameGeosyntec ConsultantsTubing TypepolyethyleProject NameGP-Plant HammondTubing Diameter0.17 inSite NameDiant HammondTubing Longth18 51 ft	
Project Name GP-Plant Hammond Tubing Diameter 0.17 in	ene
Cita Nama Diant Llammand Tubing Langth 10 F1 ft	
Site Name Plant Hammond Tubing Length 18.51 It	
Latitude 0° 0' 0"	
Longitude 0° 0' 0"	
Sonde SN 463453	
Turbidity Make/ModelLaMotte 2020wePump placement from TOC16.51 ft	
Well Information: Pumping Information:	
Well IDGWA-4Final Pumping Rate200 mL/m	in
Well diameter2 inTotal System Volume0.172618	L
Well Total DepthftCalculated Sample Rate300 sec	
Screen Length 10 ft Stabilization Drawdown 3.6 in	
Depth to Water13.34 ftTotal Volume Pumped6 L	

Low-Flow Sa	ampling Stabiliz	zation Summar	y						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:29:00	300.03	23.97	6.95	700.12	1.60	13.52	0.92	78.31
Last 5	15:34:00	600.03	23.79	6.90	707.05	0.92	13.52	0.50	77.63
Last 5	15:44:00	1200.03	23.21	6.83	701.07	0.77	13.56	0.20	78.03
Last 5	15:49:00	1500.03	23.25	6.79	702.49	0.81	13.57	0.20	77.87
Last 5	15:54:00	1800.02	23.14	6.77	700.46	0.69	13.58	0.16	77.93
Variance 0			-0.58	-0.07	-5.99			-0.29	0.39
Variance 1			0.04	-0.03	1.43			-0.01	-0.16
Variance 2			-0.11	-0.02	-2.03			-0.04	0.06

### Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O metals (EPA 6020B/7470A). Total depth = 21.75'

Grab Samples GWA-4 Grab Date: 2019-09-30 16:48:41

Low-Flow Sar	npling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:17:56	1200.01	19.45	7.07	192.92	13.00	20.88	0.21	-61.11
Last 5	16:22:56	1500.01	19.25	6.97	192.63	8.98	20.87	0.20	-57.85
Last 5	16:27:56	1800.01	19.05	6.91	193.15	6.73	20.87	0.19	-56.89
Last 5	16:32:56	2100.01	19.05	6.90	192.99	5.05	20.87	0.17	-56.34
Last 5	16:37:56	2400.00	19.15	6.86	194.03	4.37	20.87	0.17	-57.63
Variance 0			-0.20	-0.06	0.52			-0.01	0.96
Variance 1			-0.00	-0.01	-0.15			-0.02	0.54
Variance 2			0.11	-0.04	1.03			0.00	-1.29

### Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O metals (EPA 6020B/7470A). Total depth = 36.41 ft.

Grab Samples GWA-11 Grab Date: 2019-10-01 09:50:01

Project Inform	ation:				Pump Inforn	nation:				
<b>Operator Nam</b>	е	Chad	Russo		Pump Mode	l/Type	Al	exis		
Company Nam	ne	Geos	yntec Consul	tants	Tubing Type polyethyler					
Project Name		GP-P	lant Hammon	d	Tubing Diam	neter	0.2	17 in		
Site Name		Plant	Hammond		Tubing Leng	jth	16	.54 ft		
Latitude		0° 0'	0							
Longitude		0, 0,	0"							
Sonde SN		6425	31							
Turbidity Make	LaMo	LaMotte 2020we			Pump placement from TOC					
Well Informatio	on:				Pumping Inf	ormation:				
Well ID		GWC	-5		Final Pumpir	Final Pumping Rate				
Well diameter		2 in			Total Systen	n Volume	0.2	0.163825 L		
Well Total Dep	oth	ft			Calculated S	Calculated Sample Rate				
Screen Length	1	10 ft			Stabilization	Stabilization Drawdown				
Depth to Wate	r	6./1 f	t		lotal Volume	e Pumped	5	L		
Low-Flow Sam	pling Stabiliza	ation Summary								
	Time	Elapsed	Temp C	рН	SpCond µS/	cmTurb NTU	DTW ft	RDO mg/L		
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%		
		00040	~~ ~~	o ==						

	Time	Elapsed	lapsedTemp CpHSpCond µS/cm Turb NTU		/cmTurb NTU	DTW ft	RDO mg/L	ORP mV	
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:22:57	300.10	22.83	6.77	608.39	4.13	6.79	0.24	-28.90
Last 5	09:27:57	600.02	22.85	6.78	604.32	1.90	6.79	0.18	-37.08
Last 5 Last 5 Last 5	09:32:57	900.02	23.00	6.81	600.65	1.50	6.80	0.16	-42.83
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.02	0.02	-4.07			-0.07	-8.18
Variance 2			0.16	0.02	-3.67			-0.02	-5.75

Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O Metals EPA 6020B/7470A). Total depth = 21.77'

Grab Samples GWC-5 Grab Date: 2019-10-01 11:33:28

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammondk	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	37.9 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	37.9 ft
Well Information:		Pumping Information:	
Well ID	GWC-6	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2591638 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	18.32 ft	Total Volume Pumped	3.75 L

Low-Flow Sa	ampling Stabiliz	zation Summar	y						
	Time	Elapsed	Temp C	pН	SpCond µS	6/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	1		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:43:46	300.04	22.00	6.95	498.79	9.23	18.39	0.75	-51.00
Last 5	10:48:46	600.02	21.50	6.94	494.86	5.23	18.39	0.37	-60.69
Last 5	10:53:46	900.03	21.31	6.96	490.08	4.70	18.39	0.31	-64.37
Last 5	10:58:46	1200.02	21.42	6.96	484.41	4.86	18.39	0.27	-68.00
Last 5	11:03:46	1500.02	21.33	6.97	482.44	4.56	18.40	0.29	-70.17
Variance 0			-0.19	0.02	-4.78			-0.06	-3.68
Variance 1			0.11	0.00	-5.67			-0.03	-3.62
Variance 2			-0.10	0.01	-1.96			0.02	-2.17

### Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plasticl bottle with HNO3 for App. III and D&O Metals (EPA 6020B/7470A). Total Depth: 43.10'

Grab Samples GWC-6 Grab Date: 2019-10-01 15:14:42

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	27.12 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	27.12 ft
Well Information:		Pumping Information:	
Well ID	GWC-7	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.211048 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	18.5 ft	Total Volume Pumped	6 L

Low-Flow Sa	ampling Stabiliz	zation Summar	V						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	ı		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:18:02	1200.02	24.06	6.13	440.38	8.83	18.59	0.24	-29.34
Last 5	14:23:02	1500.02	23.53	6.12	442.11	6.19	18.59	0.23	-27.32
Last 5	14:28:02	1800.02	24.01	6.11	431.35	4.41	18.59	0.22	-27.57
Last 5	14:33:02	2100.02	23.56	6.10	422.48	4.05	18.59	0.21	-24.98
Last 5	14:38:02	2400.01	24.14	6.09	421.90	3.95	18.59	0.21	-24.93
Variance 0			0.48	-0.01	-10.76			-0.01	-0.26
Variance 1			-0.45	-0.01	-8.86			-0.01	2.60
Variance 2			0.57	-0.01	-0.59			0.00	0.05

### Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O Metals (EPA 6020B/7470A). Total Depth: 18.5'

Grab Samples GWC-7 Grab Date: 2019-10-01 13:23:49

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	22.4 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	22.4 ft
Well Information:		Pumping Information:	
Well ID	GWC-8	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.1899807 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.12 ft	Total Volume Pumped	3 L

Low-Flow Sa	ampling Stabiliz	zation Summar	V						
	Time	Elapsed	Temp C	рН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:32:43	300.08	23.47	7.13	504.32	3.05	15.92	0.57	-48.02
Last 5	12:37:43	600.02	23.83	7.13	501.52	2.02	15.90	0.50	-56.45
Last 5	12:42:43	900.02	24.08	7.12	506.82	2.14	15.91	0.42	-61.31
Last 5	12:47:43	1200.02	24.24	7.12	502.08	2.27	15.95	0.36	-66.22
Last 5	12:52:43	1500.02	24.17	7.11	505.42	1.89	16.02	0.32	-70.01
Variance 0			0.24	-0.01	5.31			-0.08	-4.86
Variance 1			0.16	0.00	-4.75			-0.06	-4.91
Variance 2			-0.07	-0.01	3.34			-0.05	-3.79

### Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O M etals (EPA 6020B/7470A). Total Depth: 27.55'

Grab Samples GWC-8 Grab FD-03 Grab Date: 2019-10-01 14:08:57

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-9	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	18.55 ft	Total Volume Pumped	8.8 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:31:24	2700.00	21.32	6.76	337.71	8.46	18.73	0.29	-79.94
Last 5	13:36:24	3000.00	20.97	6.77	337.51	5.62	18.75	0.26	-81.44
Last 5	13:41:24	3300.00	20.95	6.75	341.27	5.31	18.75	0.23	-82.10
Last 5	13:46:24	3600.00	21.13	6.77	339.46	5.76	18.75	0.20	-83.74
Last 5	13:51:24	3899.99	20.92	6.77	337.04	3.11	18.75	0.20	-84.40
Variance 0			-0.02	-0.02	3.76			-0.03	-0.66
Variance 1			0.17	0.02	-1.81			-0.03	-1.64
Variance 2			-0.21	-0.00	-2.42			0.00	-0.67

### Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O metals (EPA 6020B/7470A). Total depth = 52.49 ft.

Grab Samples GWC-9 Grab Date: 2019-10-01 10:03:25

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	31.29 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	29.29 ft
Well Information:		Pumping Information:	
Well ID	GWC-10	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2296605 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	19.65 ft	Total Volume Pumped	13 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:32:38	2700.03	17.71	7.07	280.77	19.40	19.69	0.20	25.90
Last 5	09:37:38	3000.03	17.90	7.06	285.06	7.62	19.69	0.18	23.94
Last 5	09:42:38	3300.03	17.94	7.07	282.84	5.38	19.69	0.17	21.76
Last 5	09:47:38	3600.03	18.08	7.07	281.19	4.94	19.69	0.18	19.97
Last 5	09:52:38	3900.03	18.26	7.07	283.72	4.86	19.69	0.18	18.11
Variance 0			0.04	0.01	-2.22			-0.01	-2.18
Variance 1			0.14	0.00	-1.65			0.01	-1.79
Variance 2			0.18	-0.00	2.53			-0.01	-1.86

### Notes

Two bottles: One 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O m etals (EPA 6020B/7470A). Total depth = 34.45'

Grab Samples GWC-10 Grab

					GR	OUNDWATER SAM	IPLING LOG SI	HEET				
Client:		SCS				Project No.:	60 658	31		Sampling Date: 10 -01-2-19		
Site:		Huffale	<i>s</i>	2		Location:	Husfelm	-		Sampler's Name: D. 60395		
Well ID:		GWC-18				Pump Type/Model:	Peros Al	ewis		Sample Collection Time: 1506/1513		
Total Depth (ft):		57.03	)			Tubing Material:	Posty		- Sa	Sample Purge Rate (mL/min):		
Depth to Water (ft):		16.15			Pu	ump Intake Depth (ft):	51.95		-	Sample ID: GWC-18		
Well Diameter (in):		2.3			S	start/Stop Purge Time:	1442	/	<b>.</b>	Laboratory Analyses: APP THE \$ DOL		
Well Volume (gal) = 0	.041d <sup>2</sup> h:	6.7	2	2		Purge Rate (mL/min):	200					
Well Volume (L) = gal	* 3.785:	25.	38		То	tal Purge Volume (L):	4					
d = well diameter (inc	hes): h = ler	ngth of water col	umn (feet)			Purge Method:	Low-Flow	Vell Volume Other:		QA/QC Collected?		
Well Type:	Flush	tick Llp				Sampling Method:	Pump Dischar	rge Other:		OA/OC I.D.		
Well Lock:	(res)	No						30 				
Well Cap Condition:	Good	Replace			All sample co	ontainers requiring c	hemical preserv	ation properly preser	ved prior to demo	bb from well? (Yes) No		
Well Tag Present:		No										
Time	pH (SU)	Spec. Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Temp. (°C)	Turbidity (NTUs)	DTW (ft btoc)	Purge Rate (mL/min)	Purged Volume (L)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)		
1449	7.57	330.40	6.00	0.88	21.42	0.73	12.15	100	1			
1454	4.66	371-20	6.30	25.0	20.44	0.38	17.36	700	2			
1457	7.64	378.90	7.50	0.67	20. 71	0.40	12.44	100	5			
1506	TGI	10000	0.00	0.90	0.17	0.66	17741		4	dish ungli		
										140010		
										/		
						6						
					1	12017						
					10=01							
				hr.	10							
				10								
Stabilizing Criteria	+/- 0.1 SU	+/- 5%		0.2 mg/L or 10% for DQ > 0.5 mg/L (whichever is greater)		< 5 NTUs	< 0.3 ft	> 100 mL < 250 mL	> 3L			

Date: 2019-10-01 14:15:06

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	54.51 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	52.51 ft
Well Information:		Pumping Information:	
Well ID	GWC-19	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3333012 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	22.19 ft	Total Volume Pumped	4 L

Low-Flow Sar	npling Stabiliz	zation Summary	V						
	Time	Elapsed	Temp C	рН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:45:27	300.03	22.07	7.30	383.21	2.39	22.48	0.50	22.71
Last 5	13:50:27	600.03	21.87	7.31	389.51	1.16	22.48	0.37	17.23
Last 5	13:55:27	900.02	22.33	7.31	388.44	1.74	22.46	0.35	13.34
Last 5	14:00:27	1200.02	22.71	7.31	387.65	2.96	22.45	0.32	10.15
Last 5									
Variance 0			-0.20	0.01	6.29			-0.13	-5.48
Variance 1			0.47	0.00	-1.06			-0.02	-3.90
Variance 2			0.38	-0.00	-0.79			-0.03	-3.19

### Notes

Two bottles: One 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O m etals (EPA 6020B/7470A). Total depth = 56.94'

Grab Samples GWC-19 Grab Date: 2019-10-01 13:15:00

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	31.36 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463453		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	29.36 ft
Well Information:		Pumping Information:	
Well ID	GWC-20	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2299729 L
Well Total Depth	7.36 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	ft	Total Volume Pumped	2 L

Low-Flow San	npling Stabili	zation Summary	y						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:45:01	300.03	21.16	7.14	405.85	0.29	7.80	0.69	4.36
Last 5	12:50:01	600.07	20.71	7.16	411.68	0.30	7.84	0.44	-1.56
Last 5	12:55:01	900.03	20.81	7.16	410.54	0.25	7.85	0.40	-6.41
Last 5	13:00:01	1200.03	20.71	7.16	408.11	0.72	7.85	0.33	-10.93
Last 5									
Variance 0			-0.46	0.01	5.83			-0.25	-5.91
Variance 1			0.11	0.00	-1.14			-0.04	-4.85
Variance 2			-0.11	0.00	-2.44			-0.07	-4.53

Notes

Two bottles: One 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O m etals (EPA 6020B/7470A). Total depth = 31.46'

Grab Samples GWC-20 Grab Date: 2019-10-01 12:07:17

Project Information: Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN	Dan Gibbs Geosyntec Con GP-Plant Hamn Plant Hammond 0° 0' 0" 0° 0' 0" 463453	sultants nond d	Pump Information: Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in 15.23 ft
Turbidity Make/Model	LaMotte 2020w	ve	Pump placement from TOC	13.23 ft
Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	GWC-21 2 in ft 10 ft 10.11 ft		Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	100 mL/min 0.1579779 L 300 sec 3.6 in 1.5 L
Low-Flow Sampling Stabiliza Time	tion Summary Elapsed Temp C	рН	SpCond µS/cmTurb NTU	DTW ft RDO mg/L
Stabilization	+/- 0.5	+/- 0.1	+/- 5% +/- 10	+/- 10%

Time		Elapsed	Temp C	pН	SpCond µS/cmTurb NTU		DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5 Last 5 Last 5 Last 5	11:39:03 11:44:03 11:49:03	300.02 600.02 900.03	21.62 21.45 21.40	6.93 6.92 6.90	549.23 551.27 552.26	0.99 2.14 	10.43 10.52 	0.77 0.67 0.80	38.42 36.49 35.65
Last 5 Variance 0 Variance 1			nan -0.17	nan -0.01	nan 2.04			nan -0.11	nan -1.93
Variance 2			-0.06	-0.02	0.99			0.13	-0.84

Notes

Two bottles: One 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O metals (EPA 6020B/7470A). Total depth = 18.49'

Grab Samples GWC-21 Grab Date: 2019-10-01 11:11:25

Operator NameDan GibbsPump Model/TypeAlexisCompany NameGeosyntec ConsultantsTubing TypepolyetProject NameGP-Plant HammondTubing Diameter0.17 inSite NamePlant HammondTubing Length39.05	hylene
Company NameGeosyntec ConsultantsTubing TypepolyetProject NameGP-Plant HammondTubing Diameter0.17 irSite NamePlant HammondTubing Length39.05	hylene
Project Name GP-Plant Hammond Tubing Diameter 0.17 ir Site Name Plant Hammond Tubing Length 39.05	-
Site Name Dlant Hammond Tubing Length 30.05	1
	ft
Latitude 0° 0' 0"	
Longitude 0° 0' 0"	
Sonde SN 463453	
Turbidity Make/ModelLaMotte 2020wePump placement from TOC37.05	ft
Well Information: Pumping Information:	
Well IDGWC-22Final Pumping Rate100 m	L/min
Well diameter2 inTotal System Volume0.264	2967 L
Well Total DepthftCalculated Sample Rate300 sr	ec
Screen Length 10 ft Stabilization Drawdown 36 in	

Low-Flow San	npling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:40:27	300.03	20.66	7.21	382.20	1.29	7.06	0.29	43.15
Last 5	10:45:27	600.02	20.35	7.32	380.81	0.81	7.15	0.24	41.67
Last 5	10:50:27	900.02	20.18	7.36	382.79	1.13	7.15	0.22	40.82
Last 5	10:55:27	1200.02	20.44	7.38	383.24	0.70	7.15	0.23	39.29
Last 5									
Variance 0			-0.31	0.11	-1.39			-0.05	-1.49
Variance 1			-0.16	0.04	1.98			-0.02	-0.85
Variance 2			0.25	0.02	0.45			0.01	-1.53

### Notes

Two bottles: One 500-mL plastic bottle for TDS (EPA 2540C), CI, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O metals (EPA 6020B/7470A). Total depth = 42.25'

Grab Samples GWC-22 Grab
Date: 2019-10-01 11:57:02

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude	Noelia Muskus Geosyntec Consultants GP-Plant Hammond Plant Hammond 0° 0' 0" 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in ft
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-23	Final Pumping Rate	135 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	18.76 ft	Total Volume Pumped	7.3 L

Low-Flow Sa	mpling Stabili	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:17:32	2430.00	19.74	6.90	319.04	6.79	19.04	0.23	-90.00
Last 5	11:22:32	2730.00	19.72	6.95	318.62	6.74	19.07	0.20	-93.00
Last 5	11:27:32	3030.00	19.68	6.97	317.94	5.74	19.08	0.17	-95.69
Last 5	11:32:32	3330.00	19.68	6.97	316.74	5.17	19.08	0.17	-96.45
Last 5	11:37:32	3629.99	19.96	7.00	314.62	4.43	19.05	0.17	-98.50
Variance 0			-0.04	0.02	-0.68			-0.02	-2.69
Variance 1			-0.00	0.00	-1.20			-0.00	-0.76
Variance 2			0.28	0.02	-2.12			-0.00	-2.05

### Notes

Two bottles: one 500-mL plastic bottle for TDS (EPA 2540C), Cl, F, SO4 (EPA 300.0); and one 250-mL plastic bottle with HNO3 for App. III and D&O metals (EPA 6020B/7470A). Total depth = 50.13 ft.

Grab Samples GWC-23 Grab Date: 2019-11-06 15:11:13

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	27 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	27 ft
Well Information:		Pumping Information:	
Well ID	GWC-7	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.2105124 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.43 ft	Total Volume Pumped	4 L

Low-Flow Sa	ampling Stabiliz	zation Summar	V						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	1		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:39:32	900.02	19.66	6.20	455.04	2.95	16.53	0.49	63.88
Last 5	14:44:32	1200.02	19.80	6.18	452.14	3.31	16.53	0.60	66.91
Last 5	14:49:32	1500.01	19.91	6.19	451.95	2.83	16.53	0.36	65.91
Last 5	14:54:32	1800.01	20.07	6.18	448.67	2.29	16.53	0.38	65.07
Last 5	14:59:32	2100.01	20.06	6.18	446.86	2.61	16.53	0.47	65.01
Variance 0			0.11	0.00	-0.20			-0.24	-1.00
Variance 1			0.15	-0.01	-3.28			0.02	-0.84
Variance 2			-0.00	-0.01	-1.80			0.08	-0.06

### Notes

One bottle: One 250-mL plastic bottle with HNO3 for metals (EPA 6020B). Total depth = 32.30'

Grab Samples GWC-7 Grab Date: 2019-11-06 13:47:37

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	29 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	29 ft
Well Information:		Pumping Information:	
Well ID	GWC-20	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2194393 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	5.28 ft	Total Volume Pumped	2 L
	5.20 IL	Total volume Pumped	2 L

Low-Flow San	pling Stabiliz	zation Summary	Y						
	Time	Elapsed	Temp C	рН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:27:50	300.03	18.17	7.43	396.52	1.44	5.75	0.47	80.17
Last 5	13:32:50	600.02	18.11	7.44	396.36	1.72	5.76	0.38	74.12
Last 5	13:37:50	900.02	18.08	7.44	396.90	1.42	5.78	0.31	15.01
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.06	0.01	-0.16			-0.10	-6.05
Variance 2			-0.03	0.00	0.54			-0.06	-59.11

### Notes

One bottle: 120-mL plastic bottle for SO4 (EPA 300.0). Total depth = 31.46'

Grab Samples GWC-20 Grab Date: 2019-11-06 12:08:27

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	13 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	13 ft
Well Information:		Pumping Information:	
Well ID	GWC-21	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.1480245 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	6.68 ft	Total Volume Pumped	2.75 L

Low-Flow Sa	mpling Stabili	zation Summar	V						
	Time	Elapsed	Temp C	рН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:37:36	300.04	17.56	7.02	565.44	1.83	6.83	2.43	127.86
Last 5	11:42:36	600.02	17.61	6.93	570.27	1.98	6.83	2.37	127.43
Last 5	11:47:36	900.02	17.61	6.88	564.92	2.28	6.83	2.36	127.01
Last 5	11:52:36	1200.01	17.64	6.84	562.11	1.70	6.84	2.39	126.68
Last 5									
Variance 0			0.05	-0.09	4.84			-0.06	-0.43
Variance 1			0.00	-0.05	-5.36			-0.01	-0.42
Variance 2			0.02	-0.04	-2.81			0.04	-0.33

### Notes

Two bottles: One 250-mL plastic bottle with HNO3 for metals (EPA 6020B) and one 250-mL plastic bottle for TDS and SO4 (EPA 300.0). Total depth = 18.51'

Grab Samples GWC-21 Grab Date: 2019-11-06 10:41:28

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude	Chad Russo Geosyntec Consultants GP-Plant Hammond Plant Hammond 0° 0' 0" 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in ft
Sonde SN	541714		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-22	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.09 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to water	3.81 ft	lotal volume Pumped	3 L

LOW-FIOW Sa	mpling Stabiliz	zation Summar	У						
	Time	Elapsed	Temp C	pН	SpCond µS	6/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:25:20	300.01	17.11	7.63	372.23	1.72	4.59	0.22	97.73
Last 5	10:30:19	599.96	17.11	7.65	371.52	1.32	4.60	0.18	97.88
Last 5	10:35:19	899.95	17.19	7.66	369.62	2.06	4.62	0.16	96.79
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.00	0.02	-0.71			-0.04	0.16
Variance 2			0.07	0.01	-1.90			-0.01	-1.10

## Notes

Well purged for pH verification, no samples taken. Total depth: 42.32'.

Grab Samples

Low Flow Convelles Otelstice Converse

Date: 2019-11-26 17:00:41

Project Information:		Pump Information:	
Operator Name	Chad Russo	Pump Model/Type	Alexis
Company Name	Geosyntec Consultants	Tubing Type	polyethylene
Project Name	GP-Plant Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	15 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	14 ft
Well Information:		Pumping Information:	
Well ID	GWC-21	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.1569514 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	4.94 ft	Total Volume Pumped	9 L

Low-Flow Sa	ampling Stabili	zation Summary	y						
	Time	Elapsed	Temp C	рН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:38:21	1200.02	15.13	6.63	479.36	1.04	5.28	1.72	-27.74
Last 5	16:43:21	1500.02	15.10	6.56	458.44	0.98	5.27	1.62	-21.27
Last 5	16:48:21	1800.02	14.92	6.46	396.76	0.88	5.28	1.38	-14.69
Last 5	16:53:21	2100.02	14.89	6.43	391.69	0.75	5.29	1.45	-9.30
Last 5	16:58:21	2400.02	14.86	6.39	381.45	0.68	5.28	1.44	-5.35
Variance 0			-0.18	-0.10	-61.68			-0.24	6.58
Variance 1			-0.03	-0.03	-5.07			0.07	5.39
Variance 2			-0.03	-0.04	-10.25			-0.01	3.95

### Notes

Two bottles: One 250-mL plastic bottle with HNO3 for metals (EPA 6020B) and one 500-mL plastic bottle for TDS (EPA 300.0). Total depth = 18.50'

Grab Samples GWC-21 Grab

# APPENDIX D

Statistical Analyses

Detection Monitoring Program Statistical Analysis Package Plant Hammond Huffaker Road Landfill April and September-October 2019 events (D01 & D02)

# Table D-1 Detection Monitoring Prediction Limit Comparison - Appendix III Parameters Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

			Semian	nual Sampling	g Event 1			Semian	miannual Sampling Event 2				
Parameter	Well ID	Upper PL	Lower PL	Apr 5-9, 2019	Jun 17-19, 2019	Jun 27, 2019	Upper PL	Lower PL	Sep 29 - Oct 1, 2019	Nov 6, 2019	Nov 26, 2019		
Boron (mg/L)	GWC-10	0.048 <sup>(3)</sup>	-	0.035 J			0.041	-	0.031 J				
Boron (mg/L)	GWC-18	0.15	-	0.12			0.15	-	0.14				
Boron (mg/L)	GWC-19	0.21	-	0.17			0.20	-	0.17				
Boron (mg/L)	GWC-20	0.05	-	0.011 J			0.05	-	0.019 J				
Boron (mg/L)	GWC-21	0.14	-	0.014 J			0.11	-	0.059				
Boron (mg/L)	GWC-22	0.085	-	0.063			0.079	-	0.066				
Boron (mg/L)	GWC-23	0.15	-	0.022 J			0.11	-	0.024 J				
Boron (mg/L)	GWC-5	0.073	-	0.048			0.073	-	0.071				
Boron (mg/L)	GWC-6	0.043	-	0.036 J			0.043	-	0.042				
Boron (mg/L)	GWC-7	0.073	-	0.049 J			0.069	-	0.05				
Boron (mg/L)	GWC-8	0.028	-	0.055 J			0.055	-	0.046				
Boron (mg/L)	GWC-9	0.05	-	0.015 J			0.050	-	0.018 J				
Calcium (mg/L)	GWC-10	50.4	-	48.8			55.8	-	36.8				
Calcium (mg/L)	GWC-18	44.2	-	41.4			44.9	-	38.7				
Calcium (mg/L)	GWC-19	50.2	-	45.8			48.3	-	42.3				
Calcium (mg/L)	GWC-20	61.1	-	57.1			59.4	-	59.1				
Calcium (mg/L)	GWC-21	82.7	-	35.4			73.8	-	82.8	74.9	45.8		
Calcium (mg/L)	GWC-22	52.7	-	47.3			51.5	-	46.9				
Calcium (mg/L)	GWC-23	42.1	-	39.8			43.4	-	39.1				
Calcium (mg/L)	GWC-5	92.1	-	73.9			86.3	-	70.6				
Calcium (mg/L)	GWC-6	68.2	-	67			69.3	-	64.2				
Calcium (mg/L)	GWC-7	73.5	-	56.1			65.3	-	28.5				
Calcium (mg/L)	GWC-8	76.2	-	81.5	83.7	75.9	83.8	-	64.0				
Calcium (mg/L)	GWC-9	38.4	-	36.3			38.3	-	37.2				
Chloride (mg/L)	GWC-10	1.9	-	1.9			2.1	-	1.5				
Chloride (mg/L)	GWC-18	1.8	-	1.6			1.7	-	0.94 J				
Chloride (mg/L)	GWC-19	2.5	-	1.9			2.3	-	1.3				
Chloride (mg/L)	GWC-20	2.1	-	1.8			2.2	-	1.1				
Chloride (mg/L)	GWC-21	3.5	-	2.6			3.6	-	2				
Chloride (mg/L)	GWC-22	2.0	-	1.7			1.9	-	1.4				
Chloride (mg/L)	GWC-23	2.1	-	1.5			1.9	-	1.1				
Chloride (mg/L)	GWC-5	4.0	-	3.3			3.9	-	2.2				
Chloride (mg/L)	GWC-6	2.3	-	2.1			2.3	-	1.6				
Chloride (mg/L)	GWC-7	2.3	-	1.9			2.2	-	1.2				
Chloride (mg/L)	GWC-8	2.1	-	3.2 <sup>(4)</sup>			3.0	-	1.8				
Chioride (mg/L)	GWC-9	1./	-	1			1./	-	0.91 J				

# Table D-1 Detection Monitoring Prediction Limit Comparison - Appendix III Parameters Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

			Semianr	ual Sampling	g Event 1			Semian	nual Sampling	Event 2	
Parameter	Well ID	Upper PL	Lower PL	Apr 5-9, 2019	Jun 17-19, 2019	Jun 27, 2019	Upper PL	Lower PL	Sep 29 - Oct 1, 2019	Nov 6, 2019	Nov 26, 2019
Fluoride (mg/L)	GWC-10	0.18	-	0.067 J			0.18	-	0.07 J		
Fluoride (mg/L)	GWC-18	0.21	-	0.1 J			0.21	-	0.11 J		
Fluoride (mg/L)	GWC-19	0.27	-	0.1 J			0.25	-	0.11 J		
Fluoride (mg/L)	GWC-20	0.17	-	0.056 J			0.18	-	0.069 J		
Fluoride (mg/L)	GWC-21	0.26	-	0.063 J			0.21	-	0.094 J		
Fluoride (mg/L)	GWC-22	0.13	-	0.063 J			0.15	-	0.079 J		
Fluoride (mg/L)	GWC-23	0.15	-	0.057 J			0.18	-	0.079 J		
Fluoride (mg/L)	GWC-5	0.33 <sup>(3)</sup>	-	0.061 J			0.30	-	0.064 J		
Fluoride (mg/L)	GWC-6	0.33	-	ND			0.27	-	0.063 J		
Fluoride (mg/L)	GWC-7	0.56	-	0.17 J			0.48	-	0.16 J		
Fluoride (mg/L)	GWC-8	0.36	-	0.1 J			0.40	-	0.13 J		
Fluoride (mg/L)	GWC-9	0.14	-	0.058 J			0.17	-	0.078 J		
pH (s.u.)	GWC-10	7.7	7.0	7.2			7.6	7.0	7.1		
pH (s.u.)	GWC-18	7.8	7.4	7.5			7.7	7.4	7.7		
pH (s.u.)	GWC-19	7.7	7.2	7.4			7.7	7.3	7.3		
pH (s.u.)	GWC-20	7.6	7.2	7.3			7.5	7.1	7.2		
pH (s.u.)	GWC-21	7.7	5.8	6.5			7.5	5.8	6.9		
pH (s.u.)	GWC-22	7.9	7.5	7.5			7.9	7.4	7.4	7.7	
pH (s.u.)	GWC-23	7.5	6.9	6.9			7.5	6.9	7.0		
pH (s.u.)	GWC-5	7.2	6.5	6.7			7.2	6.5	6.8		
pH (s.u.)	GWC-6	7.4	6.7	7.0			7.3	6.7	7.0		
pH (s.u.)	GWC-7	6.6	5.5	6.3			6.5	5.6	6.1		
pH (s.u.)	GWC-8	7.6	7.2	6.9	6.9	7.1	7.7	6.9	7.1		
pH (s.u.)	GWC-9	7.3	6.3	6.7			7.2	6.4	6.8		
Sulfate (mg/L)	GWC-10	33.0	-	21.4			36.2	-	13.4		
Sulfate (mg/L)	GWC-18	15.1	-	11.3			13.9	-	8.9		
Sulfate (mg/L)	GWC-19	21.4	-	16.7			19.7	-	14.7		
Sulfate (mg/L)	GWC-20	37.4	-	50.3	38.7	46.0	48.8	-	52.3	47.3	
Sulfate (mg/L)	GWC-21	53	-	19.9			47.3	-	46.3		
Sulfate (mg/L)	GWC-22	12.0	-	11			11.4	-	1.9		
Sulfate (mg/L)	GWC-23	43	-	6.2			43.0	-	5.8		
Sulfate (mg/L)	GWC-5	166	-	83.6			139	-	68.1		
Sulfate (mg/L)	GWC-6	128	-	131	108		137	-	71.7		
Sulfate (mg/L)	GWC-7	178	-	97.1			171	-	120		
Sulfate (mg/L)	GWC-8	63.3	-	39.9			57.1	-	47.1		
Sulfate (mg/L)	GWC-9	77.6	-	73.5			81.4	-	72.2		

 Table D-1

 Detection Monitoring Prediction Limit Comparison - Appendix III Parameters

 Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

			Semianı	nual Sampling	Event 1			Semian	nual Sampling	l Sampling Event 2		
Parameter	Well ID	Upper PL	Lower PL	Apr 5-9, 2019	Jun 17-19, 2019	Jun 27, 2019	Upper PL	Lower PL	Sep 29 - Oct 1, 2019	Nov 6, 2019	Nov 26, 2019	
TDS (mg/L)	GWC-10	268	-	213			258	-	186			
TDS (mg/L)	GWC-18	427	-	212			427	-	196			
TDS (mg/L)	GWC-19	396	-	253			393	-	229			
TDS (mg/L)	GWC-20	282	-	267			278	-	271			
TDS (mg/L)	GWC-21	382	-	167			317	-	336	336	236	
TDS (mg/L)	GWC-22	324	-	222			324	-	220			
TDS (mg/L)	GWC-23	330	-	191			284	-	203			
TDS (mg/L)	GWC-5	542	-	371			491	-	380			
TDS (mg/L)	GWC-6	364	-	353			411	-	348			
TDS (mg/L)	GWC-7	376	-	295			345	-	277			
TDS (mg/L)	GWC-8	268	-	438 <sup>(4)</sup>			385	-	305			
TDS (mg/L)	GWC-9	318	-	264			304	-	237			

Notes:

- = Not applicable

-- = Indicates the parameter was not analyzed as part of the verification event.

J = Indicates that analyte was estimated and detected between the laboratory Method Detection Limit (MDL) and Reporting Limit (RL).

mg/L = milligrams per liter

ND = Indicates the parameter was not detected above the laboratory MDL.

PL = Prediction Limit

s.u. = standard unit

TDS = Total Dissolved Solids

(1) Shaded values indicate an exceedance of the statistically derived PL.

(2) The pH value presented was recorded at the time of sample collection in the field. This is the only parameter in which the field result is compared to both the upper and lower PL.

(3) The PL calculated in 2017 by previous consultant could not be verified due to an error in Non Detect values in the PL estimation. Following EPA's guidance, the PL was recalculated after collecting a minimum of four new data points, as reflected in the "Semiannual Sampling Event 2" section.

(4) Identified SSI addressed with an alternate source demonstration.

 Table D-2

 Detection Monitoring Prediction Limit Comparison - D&O Parameters

 Plant Hammond, Floyd County, Georgia

		Semiann	ual Sampling	Event 1	Semianr	ual Sampling	Event 2
Parameter	Well ID	Upper PL	Apr 5-8, 2019	Jun 17-18, 2019	Upper PL	Sep 29 - Oct 1, 2019	Nov 6, 2019
Antimony (mg/L)	GWC-10	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-18	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-19	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-20	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-21	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-22	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-23	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-5	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-6	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-7	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-8	0.003	ND		0.003	ND	
Antimony (mg/L)	GWC-9	0.003	ND		0.003	ND	
Arsenic (mg/L)	GWC-10	0.005	ND		0.005	ND	
Arsenic (mg/L)	GWC-18	0.005	0.00063 J		0.005	ND	
Arsenic (mg/L)	GWC-19	0.005	ND		0.005	ND	
Arsenic (mg/L)	GWC-20	0.005	ND		0.005	ND	
Arsenic (mg/L)	GWC-21	0.005	0.0018 J		0.005	ND	
Arsenic (mg/L)	GWC-22	0.005	ND		0.005	ND	
Arsenic (mg/L)	GWC-23	0.005	0.00034 J		0.005	0.00082 J	
Arsenic (mg/L)	GWC-5	0.005	ND		0.005	ND	
Arsenic (mg/L)	GWC-6	0.005	ND		0.005	ND	
Arsenic (mg/L)	GWC-7	0.088	0.0057		0.0088	0.01	0.011
Arsenic (mg/L)	GWC-8	0.005	0.0015 J		0.005	0.0028 J	
Arsenic (mg/L)	GWC-9	0.005	ND		0.005	0.000/1 J	
Barium (mg/L)	GWC-10	0.19	0.1/		0.19	0.12	
Barium (mg/L)	GWC-18	0.090	0.081		0.090	0.082	
Barium (mg/L)	GWC-19	0.17	0.13		0.17	0.13	
Darium (mg/L)	GWC-20	0.14	0.13		0.14	0.14	
Barium (mg/L)	GWC-21	0.24	0.094		0.24	0.18	
Barium (mg/L)	GWC - 22	0.12	0.094		0.12	0.1	
Barium (mg/L)	GWC-23	0.085	0.057		0.085	0.082	
Barium (mg/L)	GWC-6	0.15	0.15		0.15	0.09	
Barium (mg/L)	GWC-7	0.20	0.24		0.20	0.085	
Barium (mg/L)	GWC-8	0.12	0.13	0.17	0.12	0.12	
Barium (mg/L)	GWC-9	0.073	0.058		0.073	0.071	
Bervllium (mg/L)	GWC-10	0.003	ND		0.003	ND	
Beryllium (mg/L)	GWC-18	0.003	ND		0.003	ND	
Beryllium (mg/L)	GWC-19	0.003	ND		0.003	ND	
Beryllium (mg/L)	GWC-20	0.003	ND		0.003	ND	
Beryllium (mg/L)	GWC-21	0.003	ND		0.003	ND	
Beryllium (mg/L)	GWC-22	0.003	ND		0.003	ND	
Beryllium (mg/L)	GWC-23	0.003	ND		0.003	ND	

 Table D-2

 Detection Monitoring Prediction Limit Comparison - D&O Parameters

 Plant Hammond, Floyd County, Georgia

		Semiann	ual Sampling	Event 1	Semiannual Sampling Event 2			
Parameter	Well ID	Upper PL	Apr 5-8, 2019	Jun 17-18, 2019	Upper PL	Sep 29 - Oct 1, 2019	Nov 6, 2019	
Beryllium (mg/L)	GWC-5	0.003	ND		0.003	ND		
Beryllium (mg/L)	GWC-6	0.003	ND		0.003	ND		
Beryllium (mg/L)	GWC-7	0.137	0.000058 J		0.137	0.0001 J		
Beryllium (mg/L)	GWC-8	0.003	ND		0.003	ND		
Beryllium (mg/L)	GWC-9	0.003	ND		0.003	ND		
Cadmium (mg/L)	GWC-10	0.001	ND		0.001	ND		
Cadmium (mg/L)	GWC-18	0.001	ND		0.001	ND		
Cadmium (mg/L)	GWC-19	0.001	ND		0.001	ND		
Cadmium (mg/L)	GWC-20	0.001	ND		0.001	ND		
Cadmium (mg/L)	GWC-21	0.001	ND		0.001	ND		
Cadmium (mg/L)	GWC-22	0.001	ND		0.001	ND		
Cadmium (mg/L)	GWC-23	0.001	ND		0.001	ND		
Cadmium (mg/L)	GWC-5	0.0015	ND		0.0015	ND		
Cadmium (mg/L)	GWC-6	0.001	ND		0.001	ND		
Cadmium (mg/L)	GWC-7	0.0081	ND		0.0081	ND		
Cadmium (mg/L)	GWC-8	0.001	ND		0.001	ND		
Cadmium (mg/L)	GWC-9	0.001	ND		0.001	ND		
Chromium (mg/L)	GWC-10	0.01	ND		0.01	ND		
Chromium (mg/L)	GWC-18	0.01	ND		0.01	0.00086 J		
Chromium (mg/L)	GWC-19	0.01	ND		0.01	ND		
Chromium (mg/L)	GWC-20	0.01	ND		0.01	ND		
Chromium (mg/L)	GWC-21	0.01	ND		0.01	ND		
Chromium (mg/L)	GWC-22	0.01	0.0023 J		0.01	ND		
Chromium (mg/L)	GWC-23	0.01	ND		0.01	0.0051 J		
Chromium (mg/L)	GWC-5	0.01	ND		0.01	0.0012 J		
Chromium (mg/L)	GWC-6	0.01	ND		0.01	ND		
Chromium (mg/L)	GWC-7	0.01	ND		0.01	ND		
Chromium (mg/L)	GWC-8	0.01	ND		0.01	0.0005 J		
Chromium (mg/L)	GWC-9	0.01	ND		0.01	ND		
Cobalt (mg/L)	GWC-10	0.01	ND		0.01	ND		
Cobalt (mg/L)	GWC-18	0.01	ND		0.01	ND		
Cobalt (mg/L)	GWC-19	0.01	ND		0.01	ND		
Cobalt (mg/L)	GWC-20	0.01	ND		0.01			
Cobalt (mg/L)	GWC-21	0.01	0.0023 J		0.01	0.00046 J		
Cobalt (mg/L)	GWC-22	0.01			0.01	ND		
Cobalt (mg/L)	GWC-23	0.01	0.00046 J		0.01	0.00033 J		
Cobalt (mg/L)	GWC-5	0.01			0.01	ND		
Cobalt (mg/L)	GWC-6	0.01	0.00022 J		0.01	ND		
Cobalt (mg/L) $C_{1}$	GWC-7	0.080	0.0086 J		0.080			
Cobalt (mg/L)	GWC-8	0.01	0.001 / J		0.01	0.00081 J		
Cobalt $(mg/L)$	GWC-9	0.01	0.00041 J		0.01	0.00041 J		
Copper (mg/L)	GWC-10	0.025			0.025			
Copper (mg/L)	GWC-18	0.025	ND		0.025	0.00037 J		

 Table D-2

 Detection Monitoring Prediction Limit Comparison - D&O Parameters

 Plant Hammond, Floyd County, Georgia

		Semiann	ual Sampling	Event 1	Semiannual Sampling Event 2			
Parameter	Well ID	Upper PL	Apr 5-8, 2019	Jun 17-18, 2019	Upper PL	Sep 29 - Oct 1, 2019	Nov 6, 2019	
Copper (mg/L)	GWC-19	0.025	0.0014 J		0.025	0.00019 J		
Copper (mg/L)	GWC-20	0.025	ND		0.025	0.00023 J		
Copper (mg/L)	GWC-21	0.025	ND		0.025	0.00084 J		
Copper (mg/L)	GWC-22	0.025	ND		0.025	0.00031 J		
Copper (mg/L)	GWC-23	0.025	0.0005 J		0.025	0.00083 J		
Copper (mg/L)	GWC-5	0.025	ND		0.025	0.00031 J		
Copper (mg/L)	GWC-6	0.025	ND		0.025	0.00023 J		
Copper (mg/L)	GWC-7	0.025	0.00025 J		0.025	0.00034 J		
Copper (mg/L)	GWC-8	0.025	ND		0.025	0.00036 J		
Copper (mg/L)	GWC-9	0.025	ND		0.025	ND		
Lead (mg/L)	GWC-10	0.005	ND		0.005	ND		
Lead (mg/L)	GWC-18	0.005	ND		0.005	ND		
Lead (mg/L)	GWC-19	0.005	ND		0.005	ND		
Lead (mg/L)	GWC-20	0.005	ND		0.005	ND		
Lead (mg/L)	GWC-21	0.005	ND		0.005	0.000075 J		
Lead (mg/L)	GWC-22	0.005	ND		0.005	0.00012 J		
Lead (mg/L)	GWC-23	0.005	0.00018 J		0.005	0.00022 J		
Lead (mg/L)	GWC-5	0.005	0.00039 J		0.005	0.000065 J		
Lead (mg/L)	GWC-6	0.005	ND		0.005	ND		
Lead (mg/L)	GWC-7	0.005	ND		0.005	0.00005 J		
Lead (mg/L)	GWC-8	0.005	ND		0.005	ND		
Lead (mg/L)	GWC-9	0.005	ND		0.005	ND		
Nickel (mg/L)	GWC-10	0.01	ND		0.01	ND		
Nickel (mg/L)	GWC-18	0.01	ND		0.01	0.0015 J		
Nickel (mg/L)	GWC-19	0.01	ND		0.01	ND		
Nickel (mg/L)	GWC-20	0.01	ND		0.01	ND		
Nickel (mg/L)	GWC-21	0.01	0.0048 J		0.01	0.0031 J		
Nickel (mg/L)	GWC-22	0.01	ND		0.01	ND		
Nickel (mg/L)	GWC-23	0.01	0.0011 J		0.01	0.0035 J		
Nickel (mg/L)	GWC-5	0.01	0.00098 J		0.01	0.00088 J		
Nickel (mg/L)	GWC-6	0.01	0.00032 J		0.01	0.00042 J		
Nickel (mg/L)	GWC-/	0.33	0.030		0.33	0.07		
Nickel (mg/L)	GWC-8	0.01	0.00004 J		0.01	0.00003 J		
Nickel (mg/L) Salarium (mg/L)	GWC-9	0.01	0.0021 J		0.01	0.0022 J		
Selenium (mg/L)	GWC-10	0.01			0.01	ND		
Selenium (mg/L)	GWC-18	0.01			0.01	ND		
Selenium (mg/L)	GWC 20	0.01			0.01			
Selenium $(mg/L)$	GWC 21	0.01			0.01			
Selenium $(mg/L)$	GWC 22	0.01			0.01			
Selenium (mg/L)	GWC 22	0.01			0.01	ND		
Selenium (mg/L)	GWC 5	0.01			0.01			
Selenium (mg/L)	GWC 6	0.01			0.01	ND		
Selemum (mg/L)	UWC-0	0.01	лD		0.01	ND		

 Table D-2

 Detection Monitoring Prediction Limit Comparison - D&O Parameters

 Plant Hammond, Floyd County, Georgia

		Semiann	ual Sampling	Event 1	Semiannual Sampling Event 2			
Parameter	Well ID	Upper PL	Apr 5-8, 2019	Jun 17-18, 2019	Upper PL	Sep 29 - Oct 1, 2019	Nov 6, 2019	
Selenium (mg/L)	GWC-7	0.01	ND		0.01	ND		
Selenium (mg/L)	GWC-8	0.01	ND		0.01	ND		
Selenium (mg/L)	GWC-9	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-10	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-18	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-19	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-20	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-21	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-22	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-23	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-5	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-6	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-7	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-8	0.01	ND		0.01	ND		
Silver (mg/L)	GWC-9	0.01	ND		0.01	ND		
Thallium (mg/L)	GWC-10	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-18	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-19	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-20	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-21	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-22	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-23	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-5	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-6	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-7	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-8	0.001	ND		0.001	ND		
Thallium (mg/L)	GWC-9	0.001	ND		0.001	ND		
Vanadium (mg/L)	GWC-10	0.01	ND		0.01	ND		
Vanadium (mg/L)	GWC-18	0.01	ND		0.01	ND		
Vanadium (mg/L)	GWC-19	0.01	ND		0.01	ND		
Vanadium (mg/L)	GWC-20	0.01	ND		0.01	ND		
Vanadium (mg/L)	GWC-21	0.01	ND		0.01	ND		
Vanadium (mg/L)	GWC-22	0.01	ND		0.01	ND		
Vanadium (mg/L)	GWC-23	0.01	0.00017 J		0.01	ND		
Vanadium (mg/L)	GWC-5	0.01	ND		0.01	ND		
Vanadium (mg/L)	GWC-6	0.01	ND		0.01	ND		
Vanadium (mg/L)	GWC-7	0.01	ND		0.01	ND		
Vanadium (mg/L)	GWC-8	0.01	ND		0.01	ND		
Vanadium (mg/L)	GWC-9	0.01	ND		0.01	ND		
Zinc (mg/L)	GWC-10	0.01	ND		0.01	0.0049 J		
Zinc (mg/L)	GWC-18	0.01	0.0037 J		0.01	0.006 J		
Zinc (mg/L)	GWC-19	0.013	ND		0.013	0.0049 J		
Zinc (mg/L)	GWC-20	0.01	ND		0.01	0.0063 J		

 Table D-2

 Detection Monitoring Prediction Limit Comparison - D&O Parameters

 Plant Hammond, Floyd County, Georgia

		Semiann	ual Sampling	Event 1	Semiannual Sampling Event 2			
Parameter	Well ID	Upper PL	Apr 5-8, 2019	Jun 17-18, 2019	Upper PL	Sep 29 - Oct 1, 2019	Nov 6, 2019	
Zinc (mg/L)	GWC-21	0.01	0.0041 J		0.01	0.0078 J		
Zinc (mg/L)	GWC-22	0.01	ND		0.01	0.0054 J		
Zinc (mg/L)	GWC-23	0.01	0.0016 J		0.01	0.0057 J		
Zinc (mg/L)	GWC-5	0.01	ND		0.01	0.0053 J		
Zinc (mg/L)	GWC-6	0.01	0.0013 J		0.01	0.0056 J		
Zinc (mg/L)	GWC-7	0.61	0.051		0.61	0.12		
Zinc (mg/L)	GWC-8	0.01	0.0012 J		0.01	0.0055 J		
Zinc (mg/L)	GWC-9	0.01	0.0016 J		0.01	0.0052 J		

Notes:

-- = Indicates the parameter was not analyzed as part of the verification event.

J = Indicates that analyte was estimated and detected between the laboratory Method Detection Limit (MDL)

and Reporting Limit (RL).

mg/L = milligrams per liter

ND = Indicates the parameter was not detected above the laboratory MDL.

PL = Prediction Limit

(1) Shaded values indicate an exceedance of the statistically derived PL.





Constituent: Antimony Analysis Run 12/26/2019 6:47 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Antimony Analysis Run 12/26/2019 6:47 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Antimony Analysis Run 12/26/2019 6:47 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Time Series



Constituent: Antimony Analysis Run 12/26/2019 6:47 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Arsenic Analysis Run 12/26/2019 6:47 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas  $^{\rm w}$  v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Arsenic Analysis Run 12/26/2019 6:47 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Arsenic Analysis Run 12/26/2019 6:47 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Time Series



Constituent: Arsenic Analysis Run 12/26/2019 6:47 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Barium Analysis Run 12/26/2019 6:47 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Constituent: Barium Analysis Run 12/26/2019 6:47 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Barium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Barium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Time Series

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas  $^{\mbox{\tiny NM}}$  v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Beryllium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Beryllium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Beryllium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Boron Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Boron Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Boron Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Boron Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Cadmium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Cadmium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Cadmium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Constituent: Calcium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Calcium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Calcium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Calcium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Chloride Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Constituent: Chloride Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Chloride Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Constituent: Chloride Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Time Series

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas  $^{\mbox{\tiny NP}}$  v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Chromium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Chromium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Time Series



Constituent: Chromium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Cobalt Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Cobalt Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Cobalt Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Cobalt Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Time Series

Constituent: Copper Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Time Series

Constituent: Copper Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Copper Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Time Series



Constituent: Copper Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Fluoride Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Time Series

Constituent: Fluoride Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Fluoride Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Time Series



Constituent: Fluoride Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Lead Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas  $^{\rm w}$  v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Lead Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Lead Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Lead Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>19</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Time Series

Constituent: Nickel Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Nickel Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Nickel Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: pH Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Time Series

Constituent: pH Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: pH Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: pH Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Selenium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Selenium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Selenium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Time Series



Constituent: Selenium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>19</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

#### Time Series



Constituent: Silver Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

### Time Series



Constituent: Silver Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>14</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Silver Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas  $^{\rm tw}$  v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Time Series



Constituent: Silver Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Constituent: Sulfate Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Sulfate Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Thallium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Thallium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Thallium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>m</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Time Series



Constituent: Thallium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Total Dissolved Solids Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Time Series



Constituent: Total Dissolved Solids Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Total Dissolved Solids Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Time Series



Constituent: Total Dissolved Solids Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill
Sanitas<sup>19</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

#### Time Series



Constituent: Vanadium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas  $^{\rm m}$  v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

#### Time Series



Constituent: Vanadium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>11</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Vanadium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>10</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Time Series



Constituent: Vanadium Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>11</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas  $^{\rm m}$  v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Zinc Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Zinc Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Constituent: Zinc Analysis Run 12/26/2019 6:48 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

# April 2019 event (D01)

## Appendix III Parameters Statistical Analysis Package (CCR and SW Program) D01

## Prediction Limit - Significant Results

		Plant H	ammond Clier	nt: Georgia Po	wer Company	Data: H	uffaker Roa	ad Landfill	Printed 8/15/20	019, 5:12 PM	
<u>Constituent</u>	Well	<u>Upper Lim.</u>	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	Method
Chloride (mg/L) $^{(1)}$	GWC-8	2.129	n/a	4/8/2019	3.2	Yes	8	0	No	0.0006269	Param Intra 1 of 3
рН (s.u.) <sup>(2)</sup>	GWC-23	7.509	6.939	4/8/2019	6.88	Yes	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-8	7.59	7.205	6/27/2019	7.05	Yes	8	0	No	0.0003135	Param Intra 1 of 3
Sulfate (mg/L)	GWC-20	37.44	n/a	6/27/2019	46	Yes	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L) <sup>(1)</sup>	GWC-8	267.8	n/a	4/8/2019	438	Yes	8	0	No	0.0006269	Param Intra 1 of 3

Notes:

(1) SSI addressed with an Alternate Source Demonstration.
 (2) The measured pH for well GWC-23 was within the standard margin of error for the instrument (+/- 0.1 s.u.) and therefore not considered an SSI.

## Prediction Limit - All Results

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Printed 8/15/2019, 5:12 PM

			ammond Clien	L. Georgia For	ver Company	Dala. Ni			Finited 6/15/20	19, 5.12 FIVI	
<u>Constituent</u>	Well	<u>Upper Lim.</u>	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	Method
Boron (mg/L)	GWC-10	0.04171	n/a	4/9/2019	0.035	No	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-18	0.1451	n/a	4/9/2019	0.12	No	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-19	0.2065	n/a	4/9/2019	0.17	No	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-20	0.05	n/a	4/9/2019	0.011	No	8	12.5	n/a	0.005912	NP Intra (normality) 1 of 3
Boron (mg/L)	GWC-21	0.1383	n/a	4/9/2019	0.014	No	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-22	0.08459	n/a	4/9/2019	0.063	No	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-23	0.151	n/a	4/8/2019	0.022	No	8	12.5	sqrt(x)	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-5	0.07287	n/a	4/9/2019	0.048	No	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-6	0.0426	n/a	4/8/2019	0.036	No	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-7	0.07255	n/a	4/8/2019	0.049	No	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-8	0.02841	n/a	4/8/2019	0.055	No	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-9	0.05	n/a	4/8/2019	0.015	No	8	12.5	n/a	0.005912	NP Intra (normality) 1 of 3
Calcium (mg/L)	GWC-10	50.37	n/a	4/9/2019	48.8	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-18	44.15	n/a	4/9/2019	41.4	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-19	50.19	n/a	4/9/2019	45.8	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-20	61.08	n/a	4/9/2019	57.1	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-21	82.74	n/a	4/9/2019	35.4	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-22	52.71	n/a	4/9/2019	47.3	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-23	42.07	n/a	4/8/2019	39.8	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-5	92.08	n/a	4/9/2019	73.9	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-6	68.16	n/a	4/8/2019	67	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-7	73.49	n/a	4/8/2019	56.1	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-8	76.22	n/a	6/27/2019	75.9	No	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-9	38.4	n/a	4/8/2019	36.3	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-10	1.911	n/a	4/9/2019	1.9	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-18	1.774	n/a	4/9/2019	1.6	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-19	2.477	n/a	4/9/2019	1.9	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-20	2.115	n/a	4/9/2019	1.8	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-21	3.478	n/a	4/9/2019	2.6	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-22	1.956	n/a	4/9/2019	1.7	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-23	2.062	n/a	4/8/2019	1.5	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-5	4.009	n/a	4/9/2019	3.3	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-6	2.297	n/a	4/8/2019	2.1	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-7	2.302	n/a	4/8/2019	1.9	No	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-8	2.129	n/a	4/8/2019	3.2	Yes	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-9	1.741	n/a	4/8/2019	1	No	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-10	0.1828	n/a	4/9/2019	0.067	No	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-18	0.2117	n/a	4/9/2019	0.1	No	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-19	0.2743	n/a	4/9/2019	0.1	No	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-20	0.1713	n/a	4/9/2019	0.056	No	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-21	0.2567	n/a	4/9/2019	0.063	No	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-22	0.1258	n/a	4/9/2019	0.063	No	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-23	0.1516	n/a	4/8/2019	0.057	No	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-5	0.5204	n/a	4/9/2019	0.061	No	8	0	ln(x)	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-6	0.327	n/a	4/8/2019	0.15ND	No	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-7	0.5601	n/a	4/8/2019	0.17	No	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-8	0.3595	n/a	4/8/2019	0.1	No	8	0	ln(x)	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-9	0.138	n/a	4/8/2019	0.058	No	8	0	No	0.0006269	Param Intra 1 of 3
pH (s.u.)	GWC-10	7.705	6.985	4/9/2019	7.22	No	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-18	7.768	7.419	4/9/2019	7.48	No	8	0	No	0.0003135	Param Intra 1 of 3

### Prediction Limit - All Results

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Printed 8/15/2019, 5:12 PM

				•							
<u>Constituent</u>	Well	Upper Lim.	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	Method
pH (s.u.)	GWC-19	7.739	7.229	4/9/2019	7.4	No	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-20	7.559	7.174	4/9/2019	7.26	No	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-21	7.71	5.76	4/9/2019	6.46	No	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-22	7.931	7.479	4/9/2019	7.49	No	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-23	7.509	6.939	4/8/2019	6.88	Yes	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-5	7.211	6.474	4/9/2019	6.72	No	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-6	7.364	6.671	4/8/2019	7	No	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-7	6.663	5.452	4/8/2019	6.26	No	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-8	7.59	7.205	6/27/2019	7.05	Yes	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-9	7.335	6.325	4/8/2019	6.72	No	8	0	No	0.0003135	Param Intra 1 of 3
Sulfate (mg/L)	GWC-10	33	n/a	4/9/2019	21.4	No	8	0	n/a	0.005912	NP Intra (normality) 1 of 3
Sulfate (mg/L)	GWC-18	15.08	n/a	4/9/2019	11.3	No	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-19	21.39	n/a	4/9/2019	16.7	No	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-20	37.44	n/a	6/27/2019	46	Yes	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-21	53	n/a	4/9/2019	19.9	No	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-22	11.96	n/a	4/9/2019	11	No	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-23	43	n/a	4/8/2019	6.2	No	8	0	n/a	0.005912	NP Intra (normality) 1 of 3
Sulfate (mg/L)	GWC-5	165.8	n/a	4/9/2019	83.6	No	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-6	127.6	n/a	6/19/2019	108	No	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-7	178	n/a	4/8/2019	97.1	No	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-8	63.3	n/a	4/8/2019	39.9	No	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-9	77.62	n/a	4/8/2019	73.5	No	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-10	267.9	n/a	4/9/2019	213	No	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-18	427	n/a	4/9/2019	212	No	8	0	n/a	0.005912	NP Intra (normality) 1 of 3
Total Dissolved Solids (mg/L)	GWC-19	396.3	n/a	4/9/2019	253	No	8	0	sqrt(x)	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-20	282.4	n/a	4/9/2019	267	No	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-21	382	n/a	4/9/2019	167	No	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-22	324	n/a	4/9/2019	222	No	8	0	n/a	0.005912	NP Intra (normality) 1 of 3
Total Dissolved Solids (mg/L)	GWC-23	329.5	n/a	4/8/2019	191	No	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-5	541.9	n/a	4/9/2019	371	No	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-6	363.9	n/a	4/8/2019	353	No	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-7	376.4	n/a	4/8/2019	295	No	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-8	267.8	n/a	4/8/2019	438	Yes	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-9	317.7	n/a	4/8/2019	264	No	8	0	No	0.0006269	Param Intra 1 of 3

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=0.03254, Std. Dev.=0.003986, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9167, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit





Intrawell Parametric

Background Data Summary: Mean=0.1281, Std. Dev.=0.007396, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9219, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Boron Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.1824, Std. Dev.=0.01047, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8922, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. 12.5% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3).

#### Constituent: Boron Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

#### Constituent: Boron Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=0.05138, Std. Dev.=0.03774, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7901, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





ng/L

Prediction Limit



Background Data Summary: Mean=0.0697, Std. Dev.=0.006467, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9302, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Boron Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Prediction Limit Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=0.1953, Std. Dev.=0.08395, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7837, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.05936, Std. Dev.=0.005866, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9222, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=0.03909, Std. Dev.=0.001526, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9715, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.









Background Data Summary: Mean=0.05915, Std. Dev.=0.005823, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8225, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Boron Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.02386, Std. Dev.=0.001977, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8792, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. 12.5% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3).

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=37.3, Std. Dev.=5.68, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9724, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





mg/L



Prediction Limit

Intrawell Parametric

Background Data Summary: Mean=39.25, Std. Dev.=2.13, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9468, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Constituent: Calcium Analysis Run 8/15/2019 5:07 PM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=44.1, Std. Dev.=2.647, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9374, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

#### Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=51.25, Std. Dev.=4.268, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8875, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

54

36

18

0

Within Limit

mg/L

0.0006269.



GWC-21 compliance

Limit = 82.74

Sanitas<sup>w</sup> v.9.8.05 Software licensed to Geosyntec Consultants. UG
Within Limit
Prediction Limit



mg/L



Intrawell Parametric

Background Data Summary: Mean=47.65, Std. Dev.=2.199, n=8. Normality test: Shapiro Wik @alpha = 0.01, calculated = 0.8626, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Background Data Summary: Mean=44.08, Std. Dev.=16.79, n=8. Normality test: Shapiro Wilk @alpha = 0.01,

calculated = 0.9397, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha =

4/9/19

3/24/16 11/1/16 6/11/17 1/19/18 8/29/18



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=34.84, Std. Dev.=3.14, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8714, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary: Mean=73.53, Std. Dev.=8.061, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9594, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=60.46, Std. Dev.=3.342, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.885, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit





Intrawell Parametric

Background Data Summary: Mean=36.41, Std. Dev.=16.11, n=8. Normality test: Shapiro Wik @alpha = 0.01, calculated = 0.8805, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Calcium Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=57.26, Std. Dev.=8.234, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9712, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=34.48, Std. Dev.=1.707, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9806, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=1.479, Std. Dev.=0.1879, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.905, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.







Background Data Summary: Mean=1.383, Std. Dev.=0.1702, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8642, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Constituent: Chloride Analysis Run 8/15/2019 5:07 PM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=1.986, Std. Dev.=0.2134, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9418, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



ng/L

Prediction Limit



Background Data Summary: Mean=1.687, Std. Dev=0.1858, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9678, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=2.609, Std. Dev.=0.3777, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8943, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit





Background Data Summary: Mean=1.514, Std. Dev.=0.1923, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9263, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=1.621, Std. Dev.=0.1915, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8932, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary: Mean=2.972, Std. Dev =0.4504, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9251, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=1.965, Std. Dev.=0.144, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8186, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit





Background Data Summary: Mean=1.601, Std. Dev.=0.3045, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9476, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Chloride Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Exceeds Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=1.568, Std. Dev.=0.2437, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8207, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary: Mean=1.204, Std. Dev.=0.2334, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9085, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.1033, Std. Dev.=0.03457, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9949, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.







Prediction Limit

Intrawell Parametric

Background Data Summary: Mean=0.1508, Std. Dev.=0.02645, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.937, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Fluoride Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.1639, Std. Dev.=0.04797, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.688, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



mg/L

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.08961, Std. Dev.=0.03548, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.929, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=0.1003, Std. Dev.=0.06796, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9239, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit

Intrawell Parametric





Background Data Summary: Mean=0.08531, Std. Dev.=0.01758, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9214, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Fluoride Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=0.1137, Std. Dev.=0.01648, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9409, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary (based on natural log transformation): Mean=-2.307, Std. Dev.=0.7186, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7513, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Within Limit







Background Data Summary: Mean=0.1238, Std. Dev.=0.08827, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8035, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit





Background Data Summary: Mean=0.2871, Std. Dev.=0.1186, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8416, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Fluoride Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary (based on natural log transformation): Mean=-1.839, Std. Dev.=0.3546, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7907, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.09036, Std. Dev.=0.0207, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8685, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limits





Background Data Summary: Mean=7.345, Std. Dev.=0.1566, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.965, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit



Background Data Summary: Mean=7.594, Std. Dev.=0.07577, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9844, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: pH Analysis Run 8/15/2019 5:07 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limits

Prediction Limit



Background Data Summary: Mean=7.484, Std. Dev.=0.1107, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.2485, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limits

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=7.366, Std. Dev.=0.08366, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8403, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limits





Background Data Summary: Mean=6.735, Std. Dev.=0.4235, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9073, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit



Background Data Summary: Mean=7.705, Std. Dev.=0.09813, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9627, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: pH Analysis Run 8/15/2019 5:08 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Exceeds Limits

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=7.224, Std. Dev.=0.1239, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8984, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=6.843, Std. Dev.=0.1602, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9708, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limits





Background Data Summary: Mean=7.018, Std. Dev.=0.1505, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9585, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit





Background Data Summary: Mean=6.058, Std. Dev.=0.2629, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8574, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: pH Analysis Run 8/15/2019 5:08 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Exceeds Limits

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=7.398, Std. Dev.=0.08362, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8888, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=6.83, Std. Dev.=0.2193, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9497, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3).





Prediction Limit





Background Data Summary: Mean=10.96, Std. Dev.=1.789, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8254, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Sulfate Analysis Run 8/15/2019 5:08 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=16.53, Std. Dev.=2.112, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9272, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary: Mean=27.27, Std. Dev.=4.416, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9113, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=30.75, Std. Dev.=9.665, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8455, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Within Limit



Prediction Limit

Background Data Summary: Mean=8.3, Std. Dev.=1.59, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8881, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Sulfate Analysis Run 8/15/2019 5:08 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Non-parametric



Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=91.9, Std. Dev.=32.1, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8252, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3).

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=104.4, Std. Dev.=10.06, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9561, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Within Limit

Prediction Limit





Background Data Summary: Mean=108.7, Std. Dev.=30.15, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8613, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Sulfate Analysis Run 8/15/2019 5:08 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=41.88, Std. Dev.=9.305, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8754, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary: Mean=68.14, Std. Dev.=4.115, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8933, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=172.4, Std. Dev.=41.51, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9555, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Within Limit





Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3).

Constituent: Total Dissolved Solids Analysis Run 8/15/2019 5:08 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Constituent: Total Dissolved Solids Analysis Run 8/15/2019 5:08 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Prediction Limit Within Limit Intrawell Parametric 400 GWC-19 background 320 GWC-19 compliance 240 ng/L Limit = 396.3 160 80 0 3/24/16 11/1/16 6/11/17 1/19/18 8/29/18 4/9/19

Background Data Summary (based on square root transformation): Mean=16.05, Std. Dev.=1.675, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7504, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.00132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit





Intrawell Parametric

Background Data Summary: Mean=219.3, Std. Dev.=27.43, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8899, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=186.4, Std. Dev.=84.97, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8904, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3).



Constituent: Total Dissolved Solids Analysis Run 8/15/2019 5:08 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=200, Std. Dev.=56.25, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8454, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit





Intrawell Parametric

Background Data Summary: Mean=406.3, Std. Dev.=58.92, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8846, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=304.8, Std. Dev.=25.71, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8867, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



mg/L

Prediction Limit



3/23/16 10/31/16 6/10/17 1/18/18 8/28/18 4/8/19

Background Data Summary: Mean=268.5, Std. Dev.=46.86, n=8. Normality test: Shapiro Wik @alpha = 0.01, calculated = 0.7717, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Total Dissolved Solids Analysis Run 8/15/2019 5:08 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG

Exceeds Limit

Prediction Limit



Background Data Summary: Mean=224.4, Std. Dev.=18.86, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9445, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=229.6, Std. Dev.=38.28, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7689, critical = 0.749. Kappa = 2.302 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

## Trend Test - Significant Results

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Printed 8/15/2019, 6:15 PM

Constituent	Well	Slope	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	Method
рН (s.u.)	GWC-8	-0.1429	-49	-48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GWC-20	6.912	86	58	Yes	16	0	n/a	n/a	0.01	NP

## Trend Test - All Results

	Plant Hamr	mond Client: Georgia Po	wer Company	Data: Huffake	er Road L	andfill F	Printed 8/15	/2019, 6:15 PM			
Constituent	Well	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	Method
pH (s.u.)	GWA-1 (bg)	-0.09363	-23	-38	No	12	0	n/a	n/a	0.01	NP
pH (s.u.)	GWA-11 (bg)	-0.07656	-27	-38	No	12	0	n/a	n/a	0.01	NP
pH (s.u.)	GWA-2 (bg)	-0.1072	-26	-38	No	12	0	n/a	n/a	0.01	NP
pH (s.u.)	GWA-3 (bg)	-0.0371	-13	-38	No	12	0	n/a	n/a	0.01	NP
pH (s.u.)	GWA-4 (bg)	0.03756	9	38	No	12	0	n/a	n/a	0.01	NP
pH (s.u.)	GWC-8	-0.1429	-49	-48	Yes	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GWA-1 (bg)	0.2702	33	38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GWA-11 (bg)	0.5058	35	38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GWA-2 (bg)	0.5451	5	38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GWA-3 (bg)	7.374	19	38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GWA-4 (bg)	-18.44	-13	-38	No	12	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GWC-20	6.912	86	58	Yes	16	0	n/a	n/a	0.01	NP



Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: pH Analysis Run 8/15/2019 6:13 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: pH Analysis Run 8/15/2019 6:13 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 8/15/2019 6:14 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 8/15/2019 6:14 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Constituent: Sulfate Analysis Run 8/15/2019 6:14 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 8/15/2019 6:14 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 8/15/2019 6:14 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill D&O Parameters Statistical Analysis Package (SW Program) D01

			Plant Hammon	d Client: Georgia	Power Company	er Company Data: Huffaker Road Landfill		Printed 8/13/2019, 8:04 AM		
	GWC-8 Antimony (r	ng/L) GWC-7 Arsenic (m	g/L) GWC-7 Beryllium (	mg/L) GWC-7 Cadmium (	mg/L) GWC-7 Chromiu	m (mg/L) GWC-7 Cobalt (mg	/L) GWC-7 Copper	(mg/L) GWC-7 Nicke	l (mg/L) GWC-7 Zinc (mg/L)	
5/9/2007		0.038 (o)	0.28 (o)	0.023 (o)	0.11 (o)	6.5 (o)	0.44 (o)	18 (o)	45 (o)	
7/6/2007						2.1 (o)		5.9 (o)	16 (o)	
8/28/2007						1.4 (o)			11 (o)	
11/6/2007	0.0064 (o)					1.1 (o)				

Outlier Summary - Huffaker Road Landfill

### **Date Ranges**

Barium (mg/L)

v.9.6.05

GWA-2 background:4/13/2010-10/4/2018 GWC-19 background:4/13/2010-10/4/2018 GWC-22 background:4/13/2010-10/4/2018 GWC-6 background:3/23/2016-10/4/2018 GWC-7 background:4/3/2012-10/4/2018 GWC-9 background:10/4/2011-10/5/2018

Cobalt (mg/L)

GWC-7 background:3/12/2013-10/4/2018 Nickel (mg/L)

GWC-7 background:3/12/2013-10/4/2018 Zinc (mg/L)

GWC-7 background:3/12/2013-10/4/2018
# Prediction Limit - Significant Results

		Plant H	lammond Clie	Client: Georgia Power Company			Huffaker Ro	ad Landfill	Printed 8/16/2		
<u>Constituent</u>	Well	<u>Upper Lim.</u>	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Barium (mg/L)	GWC-8	0.1227	n/a	6/18/2019	0.17	Yes	31	0	sqrt(x)	0.0002926	Param Intra 1 of 2

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Printed 8/16/2019, 8:44 AM

			ammond Cher	it. Georgia Po	wer Company	Dala. N			Filitieu 6/10/20	19, 0.44 AM	
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	Transform	<u>Alpha</u>	Method
Antimony (mg/L)	GWC-10	0.003	n/a	4/9/2019	0.003ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-18	0.003	n/a	4/9/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-19	0.003	n/a	4/9/2019	0.003ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-20	0.003	n/a	4/9/2019	0.003ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-21	0.003	n/a	4/9/2019	0.003ND	No	30	100	n/a	0.002008	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-22	0.003	n/a	4/9/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-23	0.003	n/a	4/8/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-5	0.003	n/a	4/9/2019	0.003ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-6	0.003	n/a	4/8/2019	0.003ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-7	0.003	n/a	4/8/2019	0.003ND	No	31	96.77	n/a	0.001905	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-8	0.003	n/a	4/8/2019	0.003ND	No	30	96.67	n/a	0.002008	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-9	0.003	n/a	4/8/2019	0.003ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-10	0.005	n/a	4/9/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-18	0.005	n/a	4/9/2019	0.00063	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-19	0.005	n/a	4/9/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-20	0.005	n/a	4/9/2019	0.005ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-21	0.005	n/a	4/9/2019	0.0018	No	30	86.67	n/a	0.002008	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-22	0.005	n/a	4/9/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-23	0.005	n/a	4/8/2019	0.00034	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-5	0.005	n/a	4/9/2019	0.005ND	No	32	93.75	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-6	0.005	n/a	4/8/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-7	0.0088	n/a	4/8/2019	0.0057	No	30	46.67	n/a	0.002008	NP Intra (normality) 1 of 2
Arsenic (mg/L)	GWC-8	0.005	n/a	4/8/2019	0.0015	No	31	87.1	n/a	0.001905	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-9	0.005	n/a	4/8/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Barium (mg/L)	GWC-10	0.1912	n/a	4/9/2019	0.17	No	33	0	No	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-18	0.08974	n/a	4/9/2019	0.081	No	32	0	No	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-19	0.1697	n/a	4/9/2019	0.15	No	23	0	x^4	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-20	0.1358	n/a	4/9/2019	0.13	No	31	0	x^3	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-21	0.2404	n/a	4/9/2019	0.05	No	30	0	ln(x)	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-22	0.121	n/a	4/9/2019	0.094	No	23	0	n/a	0.003415	NP Intra (normality) 1 of 2
Barium (mg/L)	GWC-23	0.08464	n/a	4/8/2019	0.059	No	32	0	No	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-5	0.1274	n/a	4/9/2019	0.067	No	32	0	No	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-6	0.1978	n/a	4/8/2019	0.15	No	11	0	No	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-7	0.4063	n/a	4/8/2019	0.24	No	19	0	sqrt(x)	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-8	0.1227	n/a	6/18/2019	0.17	Yes	31	0	sqrt(x)	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-9	0.07338	n/a	4/8/2019	0.058	No	20	0	No	0.0002926	Param Intra 1 of 2
Beryllium (mg/L)	GWC-10	0.003	n/a	4/9/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-18	0.003	n/a	4/9/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-19	0.003	n/a	4/9/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-20	0.003	n/a	4/9/2019	0.003ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-21	0.003	n/a	4/9/2019	0.003ND	No	30	100	n/a	0.002008	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-22	0.003	n/a	4/9/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-23	0.003	n/a	4/8/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-5	0.003	n/a	4/9/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-6	0.003	n/a	4/8/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-7	0.137	n/a	4/8/2019	0.000058	No	30	23.33	ln(x)	0.0002926	Param Intra 1 of 2
Beryllium (mg/L)	GWC-8	0.003	n/a	4/8/2019	0.003ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-9	0.003	n/a	4/8/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-10	0.001	n/a	4/9/2019	0.001ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-18	0.001	n/a	4/9/2019	0.001ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2

		Plant Ha	Plant Hammond Client: Georg			Data: Huffaker Road Landfill			Printed 8/16/2019, 8:44 AM			
<u>Constituent</u>	Well	Upper Lim.	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	Transform	<u>Alpha</u>	Method	
Cadmium (mg/L)	GWC-19	0.001	n/a	4/9/2019	0.001ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cadmium (mg/L)	GWC-20	0.001	n/a	4/9/2019	0.001ND	No	31	96.77	n/a	0.001905	NP Intra	(NDs) 1 of 2
Cadmium (mg/L)	GWC-21	0.001	n/a	4/9/2019	0.001ND	No	30	93.33	n/a	0.002008	NP Intra	(NDs) 1 of 2
Cadmium (mg/L)	GWC-22	0.001	n/a	4/9/2019	0.001ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cadmium (mg/L)	GWC-23	0.001	n/a	4/8/2019	0.001ND	No	32	96.88	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cadmium (mg/L)	GWC-5	0.0015	n/a	4/9/2019	0.001ND	No	32	96.88	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cadmium (mg/L)	GWC-6	0.001	n/a	4/8/2019	0.001ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cadmium (mg/L)	GWC-7	0.0081	n/a	4/8/2019	0.001ND	No	30	80	n/a	0.002008	NP Intra	(NDs) 1 of 2
Cadmium (mg/L)	GWC-8	0.001	n/a	4/8/2019	0.001ND	No	31	96.77	n/a	0.001905	NP Intra	(NDs) 1 of 2
Cadmium (mg/L)	GWC-9	0.001	n/a	4/8/2019	0.001ND	No	32	93.75	n/a	0.001803	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-10	0.01	n/a	4/9/2019	0.01ND	No	32	90.63	n/a	0.001803	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-18	0.01	n/a	4/9/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-19	0.01	n/a	4/9/2019	0.01ND	No	32	96.88	n/a	0.001803	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-20	0.01	n/a	4/9/2019	0.01ND	No	31	90.32	n/a	0.001905	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-21	0.01	n/a	4/9/2019	0.01ND	No	30	96.67	n/a	0.002008	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-22	0.01	n/a	4/9/2019	0.0023	No	32	93.75	n/a	0.001803	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-23	0.01	n/a	4/8/2019	0.01ND	No	32	96.88	n/a	0.001803	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-5	0.01	n/a	4/9/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-6	0.01	n/a	4/8/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-7	0.01	n/a	4/8/2019	0.01ND	No	30	83.33	n/a	0.002008	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-8	0.01	n/a	4/8/2019	0.01ND	No	31	90.32	n/a	0.001905	NP Intra	(NDs) 1 of 2
Chromium (mg/L)	GWC-9	0.01	n/a	4/8/2019	0.01ND	No	32	90.63	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-10	0.01	n/a	4/9/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-18	0.01	n/a	4/9/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-19	0.01	n/a	4/9/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-20	0.01	n/a	4/9/2019	0.01ND	No	31	100	n/a	0.001905	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-21	0.01	n/a	4/9/2019	0.0023	No	30	63.33	n/a	0.002008	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-22	0.01	n/a	4/9/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-23	0.01	n/a	4/8/2019	0.00046	No	32	96.88	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-5	0.01	n/a	4/9/2019	0.01ND	No	32	96.88	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-6	0.01	n/a	4/8/2019	0.00022	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-7	0.08032	n/a	4/8/2019	0.0086	No	17	0	No	0.0002926	Param Ir	ntra 1 of 2
Cobalt (mg/L)	GWC-8	0.01	n/a	4/8/2019	0.0017	No	31	96.77	n/a	0.001905	NP Intra	(NDs) 1 of 2
Cobalt (mg/L)	GWC-9	0.01	n/a	4/8/2019	0.00041	No	32	93.75	n/a	0.001803	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-10	0.025	n/a	4/9/2019	0.025ND	No	27	96.3	n/a	0.002502	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-18	0.025	n/a	4/9/2019	0.025ND	No	27	92.59	n/a	0.002502	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-19	0.025	n/a	4/9/2019	0.0014	No	27	88.89	n/a	0.002502	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-20	0.025	n/a	4/9/2019	0.025ND	No	26	96.15	n/a	0.002667	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-21	0.025	n/a	4/9/2019	0.025ND	No	25	76	n/a	0.002832	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-22	0.025	n/a	4/9/2019	0.025ND	No	27	96.3	n/a	0.002502	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-23	0.025	n/a	4/8/2019	0.0005	No	27	85.19	n/a	0.002502	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-5	0.025	n/a	4/9/2019	0.025ND	No	27	88.89	n/a	0.002502	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-6	0.025	n/a	4/8/2019	0.025ND	No	27	100	n/a	0.002502	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-7	0.025	n/a	4/8/2019	0.00025	No	25	80	n/a	0.002832	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-8	0.025	n/a	4/8/2019	0.025ND	No	26	100	n/a	0.002667	NP Intra	(NDs) 1 of 2
Copper (mg/L)	GWC-9	0.025	n/a	4/8/2019	0.025ND	No	27	96.3	n/a	0.002502	NP Intra	(NDs) 1 of 2
Lead (mg/L)	GWC-10	0.005	n/a	4/9/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Lead (mg/L)	GWC-18	0.005	n/a	4/9/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra	(NDs) 1 of 2
Lead (mg/L)	GWC-19	0.005	n/a	4/9/2019	0.005ND	No	32	96.88	n/a	0.001803	NP Intra	(NDs) 1 of 2
Lead (mg/L)	GWC-20	0.005	n/a	4/9/2019	0.005ND	No	31	96.77	n/a	0.001905	NP Intra	(NDs) 1 of 2

		Plant	Hammond C	lient: Georgia Power Company		y Data	Data: Huffaker Road Landfill			Printed 8/16/2019, 8:44 AM			
Constituent	Well	<u>Upper Lim.</u>	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	Transform	<u>Alpha</u>	Method		
Lead (mg/L)	GWC-21	0.005	n/a	4/9/2019	0.005ND	No	30	96.67	n/a	0.002008	NP Intra (NDs) 1 of 2		
Lead (mg/L)	GWC-22	0.005	n/a	4/9/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2		
Lead (mg/L)	GWC-23	0.005	n/a	4/8/2019	0.00018	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2		
Lead (mg/L)	GWC-5	0.005	n/a	4/9/2019	0.00039	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2		
Lead (mg/L)	GWC-6	0.005	n/a	4/8/2019	0.005ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2		
Lead (mg/L)	GWC-7	0.005	n/a	4/8/2019	0.005ND	No	31	83.87	n/a	0.001905	NP Intra (NDs) 1 of 2		
Lead (mg/L)	GWC-8	0.005	n/a	4/8/2019	0.005ND	No	31	96.77	n/a	0.001905	NP Intra (NDs) 1 of 2		
Lead (mg/L)	GWC-9	0.005	n/a	4/8/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2		
Nickel (mg/L)	GWC-10	0.01	n/a	4/9/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2		
Nickel (mg/L)	GWC-18	0.01	n/a	4/9/2019	0.01ND	No	27	85.19	n/a	0.002502	NP Intra (NDs) 1 of 2		
Nickel (mg/L)	GWC-19	0.01	n/a	4/9/2019	0.01ND	No	27	88.89	n/a	0.002502	NP Intra (NDs) 1 of 2		
Nickel (mg/L)	GWC-20	0.01	n/a	4/9/2019	0.01ND	No	26	92.31	n/a	0.002667	NP Intra (NDs) 1 of 2		
Nickel (mg/L)	GWC-21	0.0104	n/a	4/9/2019	0.0048	No	25	24	x^(1/3)	0.0002926	Param Intra 1 of 2		
Nickel (mg/L)	GWC-22	0.01	n/a	4/9/2019	0.01ND	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2		
Nickel (mg/L)	GWC-23	0.01	n/a	4/8/2019	0.0011	No	27	81.48	n/a	0.002502	NP Intra (NDs) 1 of 2		
Nickel (mg/L)	GWC-5	0.01	n/a	4/9/2019	0.00098	No	27	92.59	n/a	0.002502	NP Intra (NDs) 1 of 2		
Nickel (mg/L)	GWC-6	0.01	n/a	4/8/2019	0.00032	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2		
Nickel (mg/L)	GWC-7	0.3321	n/a	4/8/2019	0.03	No	12	0	No	0.0002926	Param Intra 1 of 2		
Nickel (mg/L)	GWC-8	0.01	n/a	4/8/2019	0.00064	No	26	96.15	n/a	0.002667	NP Intra (NDs) 1 of 2		
Nickel (mg/L)	GWC-9	0.01	n/a	4/8/2019	0.0021	No	27	66.67	n/a	0.002502	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-10	0.01	n/a	4/9/2019	0.01ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-18	0.01	n/a	4/9/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-19	0.01	n/a	4/9/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-20	0.01	n/a	4/9/2019	0.01ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-21	0.01	n/a	4/9/2019	0.01ND	No	30	93.33	n/a	0.002008	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-22	0.01	n/a	4/9/2019	0.01ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-23	0.01	n/a	4/8/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-5	0.01	n/a	4/9/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-6	0.01	n/a	4/8/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-7	0.01	n/a	4/8/2019	0.01ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-8	0.01	n/a	4/8/2019	0.01ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2		
Selenium (mg/L)	GWC-9	0.01	n/a	4/8/2019	0.01ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-10	0.01	n/a	4/9/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-18	0.01	n/a	4/9/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-19	0.01	n/a	4/9/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-20	0.01	n/a	4/9/2019	0.01ND	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-21	0.01	n/a	4/9/2019	0.01ND	No	25	96	n/a	0.002832	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-22	0.01	n/a	4/9/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-23	0.01	n/a	4/8/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-5	0.01	n/a	4/9/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-6	0.01	n/a	4/8/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-7	0.01	n/a	4/8/2019	0.01ND	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-8	0.01	n/a	4/8/2019	0.01ND	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2		
Silver (mg/L)	GWC-9	0.01	n/a	4/8/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2		
Thallium (mg/L)	GWC-10	0.001	n/a	4/9/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2		
Thallium (mg/L)	GWC-18	0.001	n/a	4/9/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2		
Thallium (mg/L)	GWC-19	0.001	n/a	4/9/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2		
Thallium (mg/L)	GWC-20	0.001	n/a	4/9/2019	0.001ND	No	30	100	n/a	0.002008	NP Intra (NDs) 1 of 2		
Thallium (mg/L)	GWC-21	0.001	n/a	4/9/2019	0.001ND	No	29	100	n/a	0.002172	NP Intra (NDs) 1 of 2		
Thallium (mg/L)	GWC-22	0.001	n/a	4/9/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2		

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Printed 8/16/2019, 8:44 AM

		Tiant		ont. Oborgia i	onor compar	ly Data	. Hanakor R	oud Lundiii	1 111100 0/10/	2010, 0.117 40	
<u>Constituent</u>	Well	Upper Lim.	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	Transform	<u>Alpha</u>	Method
Thallium (mg/L)	GWC-23	0.001	n/a	4/8/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-5	0.001	n/a	4/9/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-6	0.001	n/a	4/8/2019	0.001ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-7	0.001	n/a	4/8/2019	0.001ND	No	30	96.67	n/a	0.002008	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-8	0.001	n/a	4/8/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-9	0.001	n/a	4/8/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-10	0.01	n/a	4/9/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-18	0.01	n/a	4/9/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-19	0.01	n/a	4/9/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-20	0.01	n/a	4/9/2019	0.01ND	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-21	0.01	n/a	4/9/2019	0.01ND	No	25	92	n/a	0.002832	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-22	0.01	n/a	4/9/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-23	0.01	n/a	4/8/2019	0.00017	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-5	0.01	n/a	4/9/2019	0.01ND	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-6	0.01	n/a	4/8/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-7	0.01	n/a	4/8/2019	0.01ND	No	26	80.77	n/a	0.002667	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-8	0.01	n/a	4/8/2019	0.01ND	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-9	0.01	n/a	4/8/2019	0.01ND	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-10	0.01	n/a	4/9/2019	0.01ND	No	27	77.78	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-18	0.01	n/a	4/9/2019	0.0037	No	27	70.37	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-19	0.013	n/a	4/9/2019	0.01ND	No	27	59.26	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-20	0.01	n/a	4/9/2019	0.01ND	No	26	80.77	n/a	0.002667	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-21	0.00993	n/a	4/9/2019	0.0041	No	25	12	No	0.0002926	Param Intra 1 of 2
Zinc (mg/L)	GWC-22	0.01	n/a	4/9/2019	0.01ND	No	27	81.48	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-23	0.01	n/a	4/8/2019	0.0016	No	27	55.56	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-5	0.01	n/a	4/9/2019	0.01ND	No	27	55.56	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-6	0.01	n/a	4/8/2019	0.0013	No	27	74.07	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-7	0.6123	n/a	4/8/2019	0.051	No	12	0	No	0.0002926	Param Intra 1 of 2
Zinc (mg/L)	GWC-8	0.01	n/a	4/8/2019	0.0012	No	26	73.08	n/a	0.002667	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-9	0.01	n/a	4/8/2019	0.0016	No	27	66.67	n/a	0.002502	NP Intra (NDs) 1 of 2



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Antimony Analysis Run 8/16/2019 8:36 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Within Limit

ng/L





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 30) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Antimony Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Within Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

#### Constituent: Antimony Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

#### Constituent: Antimony Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Constituent: Antimony Analysis Run 8/16/2019 8:36 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 96.67% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.00208 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Arsenic Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Within Limit





GWC-19 compliance

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Prediction Limit Within Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



### Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 86.67% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Arsenic Analysis Run 8/16/2019 8:36 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



1/6/12

0

3/7/07

8/6/09

6/7/14 Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest

of 32 background values. 93.75% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

11/6/16 4/9/19

### Constituent: Arsenic Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

### Constituent: Arsenic Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 30 background values. 46.67% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).

Constituent: Arsenic Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 87.1% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=0.1255, Std. Dev.=0.02772, n=33. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9126, critical = 0.906. Kappa = 2.37 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.



Within Limit



Prediction Limit

Background Data Summary: Mean=0.07311, Std. Dev.=0.006987, n=32. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.946, critical = 0.904. Kappa = 2.38 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Constituent: Barium Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Limit = 0.1697

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG Within Limit



Prediction Limit Intrawell Parametric



Background Data Summary (based on cube transformation): Mean=0.001502, Std. Dev.=0.0004195, n=31. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9239, critical = 0.902. Kappa = 2.39 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Background Data Summary (based on x<sup>4</sup> transformation): Mean=0.0003879, Std. Dev.=0.000176, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9161, critical = 0.881. Kappa = 2.512 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary (based on natural log transformation): Mean=-2.722, Std. Dev.=0.5402, n=30. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9034, critical = 0.9. Kappa = 2.4 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.





**Prediction Limit** Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 23 background values. Well-constituent pair annual alpha = 0.006819. Individual comparison alpha = 0.003415 (1 of 2).



#### Constituent: Barium Analysis Run 8/16/2019 8:36 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



GWC-23 compliance

Limit = 0.08464

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.1019, Std. Dev.=0.01074, n=32. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9137, critical = 0.904. Kappa = 2.38 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Background Data Summary: Mean=0.06272, Std. Dev.=0.009212, n=32. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9573, critical = 0.904. Kappa = 2.38 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=0.1654, Std. Dev.=0.01034, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8754, critical = 0.792. Kappa = 3.135 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.002226.





mg/L





Background Data Summary (based on square root transformation): Mean=0.3226, Std. Dev.=0.1206, n=19. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9476, critical = 0.863. Kappa = 2.611 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.



Constituent: Barium Analysis Run 8/16/2019 8:36 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Exceeds Limit

ng/L

Prediction Limit





Background Data Summary (based on square root transformation): Mean=0.316, Std. Dev.=0.01439, n=31. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9173, critical = 0.902. Kappa = 2.39 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.002926. Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.06193, Std. Dev.=0.00445, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9577, critical = 0.868. Kappa = 2.575 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.



Within Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Beryllium Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Within Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

### Constituent: Beryllium Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Prediction Limit Within Limit Intrawell Non-parametric 0.013 GWC-21 background 0.01 GWC-21 compliance 0.008 ng/L Limit = 0.003 0.005 0.003 0 3/6/07 8/5/09 1/5/12 6/7/14 11/6/16 4/9/19

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 30) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Beryllium Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Within Limit







mg/L



GWC-5 background

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Hollow symbols indicate censored values.

Within Limit



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-6.771, Std. Dev.=1.993, n=30, 23.33% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9446, critical = 0.9. Kappa = 2.4 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Constituent: Beryllium Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Individual comparison alpha = 0.001905 (1 of 2).

Prediction Limit Intrawell Non-parametric



GWC-8 compliance

Limit = 0.003



1/6/12

0

3/7/07

8/6/09

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

6/7/14

11/6/16

4/8/19

#### Constituent: Beryllium Analysis Run 8/16/2019 8:36 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background

values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807.

Within Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Cadmium Analysis Run 8/16/2019 8:36 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Individual comparison alpha = 0.001803 (1 of 2).

Prediction Limit Intrawell Non-parametric



Limit = 0.001



mg/L



GWC-20 background

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background

values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603.

Within Limit

ng/L



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 93.33% NDs. Well-constituent pair annual alpha = 0.00208 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Within Limit

ng/L





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 80% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).

Constituent: Cadmium Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 93.75% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Sanitas  $^{\mbox{\tiny W}}$  v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Within Limit

#### Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 90.63% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 90.32% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

### Constituent: Chromium Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas  $^{\mbox{\tiny W}}$  v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Within Limit

Intrawell Non-parametric ammaaaa GWC-21 background 0.008 GWC-21 compliance 0.006 ng/L Limit = 0.010.004 0.002 0 3/6/07 8/5/09 1/5/12 6/7/14 11/6/16 4/9/19

Prediction Limit

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 96.67% NDs. Well-constituent pair annual alpha = 0.00208 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 93.75% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Constituent: Chromium Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).

Constituent: Chromium Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 90.32% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Hollow symbols indicate censored values. Prediction Limit Within Limit Intrawell Non-parametric 0.01 🕞 manana <del>anna aamm</del> GWC-9 background 0.008 0.006 mg/L 0.004

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

0.002

0

8/6/09 1/6/12 6/7/14 11/6/16 4/8/19 3/7/07

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 90.63% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

GWC-9 compliance

Limit = 0.01



Within Limit







Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Cobalt Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Constituent: Cobalt Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Within Limit

Prediction Limit Intrawell Non-parametric



Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Prediction Limit Within Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Prediction Limit

#### Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 63.33% NDs. Well-constituent pair annual alpha = 0.00208 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Cobalt Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Sanitar\* 9.9.6.05 Software licensed to Geosynte Consultants. UG Hollow symbols indicate censored values. Within Limit Prediction Limit Intrawell Non-parametric

mg/L



GWC-5 background

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Within Limit

Prediction Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



0

3/7/07

8/6/09

Within Limit

Prediction Limit





Background Data Summary: Mean=0.03376, Std. Dev.=0.01735, n=17. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9626, critical = 0.851. Kappa = 2.684 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Constituent: Cobalt Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



1/6/12

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 93.75% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

6/7/14

4/8/19

11/6/16

#### Constituent: Cobalt Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 92.59% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Copper Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 88.89% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 96.15% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 76% NDs. Well-constituent pair annual alpha = 0.005656. Individual comparison alpha = 0.002832 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Copper Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 85.19% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 88.89% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 80% NDs. Well-constituent pair annual alpha = 0.005656. Individual comparison alpha = 0.002832 (1 of 2).

Constituent: Copper Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Within Limit



Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Lead Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Constituent: Lead Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



1/6/12

8/6/09

3/7/07

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

6/7/14

11/6/16

4/9/19

#### Constituent: Lead Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

#### Constituent: Lead Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Within Limit

### Prediction Limit

#### Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 96.67% NDs. Well-constituent pair annual alpha = 0.00208 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Lead Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Within Limit Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).







Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 83.87% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Constituent: Lead Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

#### Constituent: Lead Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 85.19% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Nickel Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 88.89% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



1/6/12

0

3/7/07

8/6/09

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 92.31% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

6/7/14

11/6/16

4/9/19

#### Constituent: Nickel Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

#### Constituent: Nickel Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Within Limit

### Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation) (after Kaplan-Meier Adjustment): Mean=0.156, Std. Dev.=0.02523, n=25, 24% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8912, critical = 0.888. Kappa = 2.47 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Nickel Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 81.48% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



1/6/12

0.002

0

3/7/07

8/6/09

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 92.59% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

6/7/14

11/6/16

4/9/19

#### Constituent: Nickel Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

0

3/7/07

8/6/09

1/6/12



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

6/7/14

11/6/16

4/8/19



0

3/7/07

8/6/09

1/6/12

Within Limit

Prediction Limit





Background Data Summary: Mean=0.133, Std. Dev.=0.06625, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9771, critical = 0.805. Kappa = 3.005 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Constituent: Nickel Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 96.15% NDs. Well-constituent pair annual alpha = 0.002667 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

11/6/16

4/8/19

6/7/14

#### Constituent: Nickel Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

### Constituent: Nickel Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Within Limit

### Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Selenium Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Within Limit





1/5/12 6/7/14 11/6/16 4/9/19

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

#### Constituent: Selenium Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

#### Constituent: Selenium Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill


### Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 93.33% NDs. Well-constituent pair annual alpha = 0.00208 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Selenium Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill







Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

#### Constituent: Selenium Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

#### Constituent: Selenium Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill





Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Constituent: Selenium Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Prediction Limit Intrawell Non-parametric



Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Within Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).





Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Silver Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Within Limit

Prediction Limit Intrawell Non-parametric





Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



ng/L



Prediction Limit

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 96% NDs. Well-constituent pair annual alpha = 0.005656. Individual comparison alpha = 0.002832 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Silver Analysis Run 8/16/2019 8:37 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Within Limit

Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

#### Constituent: Silver Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

#### Constituent: Silver Analysis Run 8/16/2019 8:37 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill





Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

Constituent: Silver Analysis Run 8/16/2019 8:38 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Prediction Limit Intrawell Non-parametric





mg/L



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).







Prediction Limit

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Constituent: Thallium Analysis Run 8/16/2019 8:38 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill







Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



1/6/12

0

3/7/07

8/6/09

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 30) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).

6/7/14

11/6/16

4/9/19

#### Constituent: Thallium Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill





Prediction Limit

#### Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 29) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.00434. Individual comparison alpha = 0.002172 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Constituent: Thallium Analysis Run 8/16/2019 8:38 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Within Limit





GWC-23 compliance

Limit = 0.001



mg/L



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).







#### Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 96.67% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).

Constituent: Thallium Analysis Run 8/16/2019 8:38 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Individual comparison alpha = 0.001905 (1 of 2).

Prediction Limit Intrawell Non-parametric



Limit = 0.001



Limit = 0.001 0.002 0.001 0 1/6/12 11/6/16 4/8/19 3/7/07 8/6/09 6/7/14

GWC-9 background

GWC-9 compliance

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

#### Constituent: Thallium Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background

values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807.

#### Constituent: Thallium Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill





Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Vanadium Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Constituent: Vanadium Analysis Run 8/16/2019 8:38 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Prediction Limit Intrawell Non-parametric



GWC-19 compliance

Limit = 0.01





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

# Individual comparison alpha = 0.002502 (1 of 2).

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background

values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998.

#### Constituent: Vanadium Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas  $^{\mbox{\tiny W}}$  v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 92% NDs. Well-constituent pair annual alpha = 0.005656. Individual comparison alpha = 0.002832 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Vanadium Analysis Run 8/16/2019 8:38 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Constituent: Vanadium Analysis Run 8/16/2019 8:38 AM

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

#### Constituent: Vanadium Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

#### Constituent: Vanadium Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 80.77% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

Constituent: Vanadium Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Individual comparison alpha = 0.002667 (1 of 2).

Prediction Limit Intrawell Non-parametric



GWC-8 compliance

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Prediction Limit Within Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

#### Constituent: Vanadium Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background

values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327.

Sanitas  $^{\mbox{\tiny M}}$  v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 77.78% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 70.37% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Zinc Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



1/5/12

8/5/09

3/6/07

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 59.26% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

11/6/16

4/9/19

6/7/14



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 80.77% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

#### Constituent: Zinc Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

#### Constituent: Zinc Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas  $^{\rm w}$  v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



## Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.004727, Std. Dev.=0.002106, n=25, 12% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9426, critical = 0.888. Kappa = 2.47 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.002926.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 81.48% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Zinc Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 55.56% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



1/6/12

0

3/7/07

8/6/09

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 55.56% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

6/7/14

11/6/16

4/9/19

#### Constituent: Zinc Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

#### Constituent: Zinc Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Within Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 74.07% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).





Prediction Limit





Background Data Summary: Mean=0.2426, Std. Dev.=0.123, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9762, critical = 0.805. Kappa = 3.005 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Constituent: Zinc Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 73.08% NDs. Well-constituent pair annual alpha = 0.00267 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).

#### Constituent: Zinc Analysis Run 8/16/2019 8:38 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

## Trend Test - Significant Results

Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Printed 8/16/2019, 8:51 AM

Constituent	Well	Slope	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	Method
Barium (mg/L)	GWA-2 (bg)	0.004745	298	167	Yes	33	0	n/a	n/a	0.01	NP
Barium (mg/L)	GWA-3 (bg)	-0.004787	-286	-167	Yes	33	0	n/a	n/a	0.01	NP
Barium (mg/L)	GWA-4 (bg)	-0.004904	-227	-167	Yes	33	0	n/a	n/a	0.01	NP

## Trend Test - All Results

	Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Printed 8/16/2019, 8:52 AM										
<u>Constituent</u>	Well	Slope	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	Normality	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Barium (mg/L)	GWA-1 (bg)	-0.00005029	-22	-167	No	33	0	n/a	n/a	0.01	NP
Barium (mg/L)	GWA-11 (bg)	-0.00009779	-47	-167	No	33	0	n/a	n/a	0.01	NP
Barium (mg/L)	GWA-2 (bg)	0.004745	298	167	Yes	33	0	n/a	n/a	0.01	NP
Barium (mg/L)	GWA-3 (bg)	-0.004787	-286	-167	Yes	33	0	n/a	n/a	0.01	NP
Barium (mg/L)	GWA-4 (bg)	-0.004904	-227	-167	Yes	33	0	n/a	n/a	0.01	NP
Barium (mg/L)	GWC-8	0	-11	-167	No	33	0	n/a	n/a	0.01	NP

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Constituent: Barium Analysis Run 8/16/2019 8:50 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Barium Analysis Run 8/16/2019 8:50 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Constituent: Barium Analysis Run 8/16/2019 8:50 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants. UG

Sanitas<sup>™</sup> v.9.6.05 Software licensed to Geosyntec Consultants. UG



Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill



Constituent: Barium Analysis Run 8/16/2019 8:51 AM Plant Hammond Client: Georgia Power Company Data: Huffaker Road Landfill

# September-October 2019 event (D02)

Appendix III Parameters Statistical Analysis Package (CCR and SW Program) D02

## Outlier Summary (App. III) - Huffaker Rd. Landfill

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 12/26/2019, 3:28 PM

GWC-8 Calcium (mg/L)

264 (o)

10/5/2017 10/4/2018 GWC-20 Chloride (mg/L) 5.5 (o)

## Welch's t-test/Mann-Whitney (App. III) - Significant Results

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 11/24/2019, 11:03 PM

Constituent	Well	<u>Calc.</u>	<u>0.1</u>	<u>0.05</u>	<u>0.025</u>	<u>0.01</u>	<u>Alpha</u>	<u>Sig.</u>	Method
Calcium (mg/L)	GWC-10	2.517	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W
Chloride (mg/L) <sup>(1)</sup>	GWC-8	2.85	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W
pH (s.u.)	GWC-20	-3.105	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W
pH (s.u.)	GWC-22	-2.807	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W
Sulfate (mg/L) <sup>(1)</sup>	GWC-20	3.26	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W
Total Dissolved Solids (mg/L)	GWC-6	2.649	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W
Total Dissolved Solids (mg/L) <sup>(1)</sup>	GWC-8	3.037	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W

## Note:

(1) Well/constituent pair addressed with an Alternate Source Demonstration.

## Welch's t-test/Mann-Whitney (App. III) - All Results

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 11/24/2019, 11:03 PM

Constituent	Well	<u>Calc.</u>	<u>0.1</u>	<u>0.05</u>	<u>0.025</u>	<u>0.01</u>	<u>Alpha</u>	<u>Sig.</u>	Method
Boron (mg/L)	GWA-1 (bg)	-0.4268	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWA-11 (bg)	-0.9341	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWA-2 (bg)	-1.953	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWA-3 (bg)	-0.08492	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWA-4 (bg)	-1.444	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-10	1.106	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-18	-0.4276	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-19	-2.827	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-20	-2.212	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-21	-1.444	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-22	-0.7643	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-23	0.7643	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-5	-0.4246	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-6	0.07319	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-7	-2.463	No	No	No	No	0.01	No	Mann-W
Boron (mg/L)	GWC-8	2.297	Yes	Yes	Yes	No	0.01	No	Mann-W
Boron (mg/L)	GWC-9	-1.872	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWA-1 (bg)	-0.8537	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWA-11 (bg)	-0.08492	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWA-2 (bg)	-0.7643	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWA-3 (bg)	0.4246	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWA-4 (bg)	-1.953	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-10	2.517	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W
Calcium (mg/L)	GWC-18	1.537	Yes	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-19	-0.1704	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-20	1.444	Yes	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-21	-0.4246	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-22	0.515	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-23	1.957	Yes	Yes	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-5	-0.08492	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-6	2.123	Yes	Yes	Yes	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-7	0.2548	No	No	No	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-8	2.001	Yes	Yes	Yes	No	0.01	No	Mann-W
Calcium (mg/L)	GWC-9	1.444	Yes	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWA-1 (bg)	0.6084	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWA-11 (bg)	0.2584	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWA-2 (bg)	0.2575	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWA-3 (bg)	-1.361	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWA-4 (bg)	-1.531	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-10	2.079	Yes	Yes	Yes	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-18	1.147	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-19	-0.9596	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-20	1.191	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-21	1.173	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-22	1.483	Yes	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-23	-1.48	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-5	1.449	Yes	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-6	0.8839	No	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-7	1.459	Yes	No	No	No	0.01	No	Mann-W
Chloride (mg/L)	GWC-8	2.85	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W

## Welch's t-test/Mann-Whitney (App. III) - All Results

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 11/24/2019, 11:03 PM

Constituent	Well	<u>Calc.</u>	<u>0.1</u>	<u>0.05</u>	<u>0.025</u>	<u>0.01</u>	<u>Alpha</u>	<u>Sig.</u>	Method
Chloride (mg/L)	GWC-9	0.3439	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWA-1 (bg)	0.2548	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWA-11 (bg)	1.112	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWA-2 (bg)	0.2552	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWA-3 (bg)	1.106	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWA-4 (bg)	0.2557	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-10	0.6806	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-18	-0.4253	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-19	-0.5965	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-20	0.08492	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-21	1.278	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-22	0.4276	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-23	-0.08522	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-5	0.7656	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-6	0.2552	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-7	-1.449	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-8	0.8844	No	No	No	No	0.01	No	Mann-W
Fluoride (mg/L)	GWC-9	0.2552	No	No	No	No	0.01	No	Mann-W
pH (s.u.)	GWA-1 (ba)	-1.701	Yes	No	No	No	0.01	No	Mann-W
pH (s.u.)	GWA-11 (ba)	-1.191	No	No	No	No	0.01	No	Mann-W
pH (s.u.)	GWA-2 (ba)	-1.704	Yes	No	No	No	0.01	No	Mann-W
pH (s.u.)	GWA-3 (bg)	-0.3403	No	No	No	No	0.01	No	Mann-W
pH (s.u.)	GWA-4 (bg)	0.3403	No	No	No	No	0.01	No	Mann-W
nH (su)	GWC-10	-1 783	Yes	No	No	No	0.01	No	Mann-W
nH (su)	GWC-18	-0.9358	No	No	No	No	0.01	No	Mann-W
pH (s.u.)	GWC-19	-0 5944	No	No	No	No	0.01	No	Mann-W
pH (s.u.)	GWC 20	3 105	Voc	Voc	Voc	Voc	0.01	Voc	Mann W
pH (s.u.)	GWC 21	-3.105	No	No	No	No	0.01	No	Moon W
pri (s.u.)	GWC 22	2 807	Voc	Voc	Voc	Voc	0.01	Voc	Mann W
pH (s.u.)	GWC 23	1 704	Voc	No	No	No	0.01	No	Moon W
pir (s.u.)	GWC-23	-1.704	Ne	No	No	No	0.01	No	Mann W
p⊓ (s.u.)	GWC-5	-1.100	No	No	No	No	0.01	No	Mann W
$p \mapsto (s.u.)$	GWC-0	-0.0000	NO	INO N.a	INO N.a	NO No	0.01	NO No	
pH (s.u.)	GWC-7	0.08492	NO	NO	NO	NO	0.01	NO	iviann-vv
pH (s.u.)	GWC-8	-2.012	Yes	res	NO	NO	0.01	NO	iviann-vv
pH (s.u.)	GWC-9	-0.8507	NO	NO	NO	NO	0.01	NO	Mann-w
	GWA-1 (bg)	1.459	Yes	NO	NO	NO	0.01	NO	Mann-w
Sulfate (mg/L)	GVVA-11 (bg)	1.916	Yes	Yes	NO	NO	0.01	NO	Mann-w
Sulfate (mg/L)	GWA-2 (bg)	0.5122	No	No	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWA-3 (bg)	0.5955	No	No	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWA-4 (bg)	-0.3403	No	No	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWC-10	2.285	Yes	Yes	Yes	No	0.01	No	Mann-W
Sulfate (mg/L)	GWC-18	0.6806	No	No	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWC-19	-1.191	No	No	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWC-20	3.26	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W
Sulfate (mg/L)	GWC-21	-0.1704	No	No	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWC-22	-0.3409	No	No	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWC-23	1.106	No	No	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWC-5	0.08492	No	No	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWC-6	1.654	Yes	Yes	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWC-7	0.4261	No	No	No	No	0.01	No	Mann-W

## Welch's t-test/Mann-Whitney (App. III) - All Results

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 11/24/2019, 11:03 PM

Constituent	Well	<u>Calc.</u>	<u>0.1</u>	<u>0.05</u>	0.025	<u>0.01</u>	<u>Alpha</u>	<u>Sig.</u>	Method
Sulfate (mg/L)	GWC-8	-0.2548	No	No	No	No	0.01	No	Mann-W
Sulfate (mg/L)	GWC-9	1.253	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWA-1 (bg)	-0.08507	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWA-11 (bg)	0	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWA-2 (bg)	-1.191	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWA-3 (bg)	0.4246	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWA-4 (bg)	-2.293	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWC-10	1.444	Yes	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWC-18	1.104	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWC-19	-0.6818	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWC-20	1.276	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWC-21	-0.08492	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWC-22	0.2552	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWC-23	0.4246	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWC-5	-0.4253	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWC-6	2.649	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W
Total Dissolved Solids (mg/L)	GWC-7	1.104	No	No	No	No	0.01	No	Mann-W
Total Dissolved Solids (mg/L)	GWC-8	3.037	Yes	Yes	Yes	Yes	0.01	Yes	Mann-W
Total Dissolved Solids (mg/L)	GWC-9	0.7697	No	No	No	No	0.01	No	Mann-W

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Boron Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Boron Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Boron Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

┡╌┙

3/22/16 10/30/16

6/9/17

0.2

0.16

0.12

0.08

0.04

0

mg/L







8/28/18

4/8/19

1/18/18

Mann-Whitney (Wilcoxon Rank Sum)

GWA-4 (bg)

GWA-4 background

GWA-4 compliance

background median = 0.1005

compliance median = 0.0785

Table

1.282

1.645

2.326

1.96

Sig.

No

No

No

No

Z = -1.444

Alpha

0.025

0.01

0.1

Constituent: Boron Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG







Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Constituent: Boron Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Boron Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Mann-Whitney (Wilcoxon Rank Sum) GWC-6 0.05 GWC-6 background 0.04 GWC-6 compliance 0.03 background median = 0.0394 mg/L 0.02 compliance median = 0.0382 Z = 0.073190.01 Alpha Table Sig. 1.282 0.1 0.05 No 1.645 No 0.025 1.96 No 0 0.01 2.326 No 3/23/16 10/31/16 6/10/17 1/18/18 8/28/18 4/8/19





Constituent: Boron Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Boron Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Constituent: Boron Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Boron Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Calcium Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

6/8/17

90

72

54

36

18

0

3/22/16 10/29/16

mg/L







8/26/18

4/5/19

1/16/18

Mann-Whitney (Wilcoxon Rank Sum)

GWA-3 (bg)

GWA-3 background

GWA-3 compliance

background median = 77.2

compliance median = 77.65

Table

1.282

1.645

1.96

2.326

Sig.

No

No

No

No

Z = 0.4246

Alpha

0.025

0.01

0.1

Constituent: Calcium Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Calcium Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

40

30

20

10

0

3/24/16

11/1/16 6/11/17

mg/L



Constituent: Calcium Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

8/29/18

4/9/19

1/19/18

Mann-Whitney (Wilcoxon Rank Sum)

GWC-19

GWC-19 background

GWC-19 compliance

background median = 44.7

compliance median = 43.5

Table

1.282

1.645

1.96

2.326

Sig.

No

No

No

No

Z = -0.1704

Alpha

0.025

0.01

0.1

Constituent: Calcium Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Mann-Whitney (Wilcoxon Rank Sum)

GWC-22 background

GWC-22 compliance

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

mg/L



Constituent: Calcium Analysis Run 11/24/2019 10:37 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Calcium Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

3/23/16 10/31/16 6/10/17 1/18/18

50

40

30

20

10

0

mg/L





Constituent: Calcium Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

8/28/18

4/8/19

Mann-Whitney (Wilcoxon Rank Sum)

GWC-23

۵

GWC-23 background

GWC-23 compliance

background median = 34.1

compliance median = 39.8

Table 1.282

1.645

2.326

1.96

Sig.

Yes

Yes

No

No

Z = 1.957

Alpha

0.025

0.01

0.1

Constituent: Calcium Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG







Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

72

54

36

18

0

3/23/16 11/16/16 7/12/17

mg/L







10/31/18 6/27/19

3/7/18

Mann-Whitney (Wilcoxon Rank Sum)

GWC-8

4

GWC-8 background

GWC-8 compliance

background median = 56.65

compliance median = 70.1

Table

1.282

1.645

2.326

1.96

Sig.

Yes

Yes

Yes

No

Z = 2.001

Alpha

0.025

0.01

0.1

Constituent: Calcium Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

2.4

1.8

1.2

0.6

0

3/22/16 10/30/16

6/9/17

mg/L







8/28/18

4/8/19

1/18/18

Mann-Whitney (Wilcoxon Rank Sum)

GWA-2 (bg)

GWA-2 background

GWA-2 compliance

background median = 2.45

compliance median = 2.45

Table

1.282

1.645

1.96

2.326

Sig.

No

No

No

No

Z = 0.2575

Alpha

0.025

0.01

0.1

Constituent: Chloride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG







Constituent: Chloride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

mg/L



Constituent: Chloride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Chloride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Chloride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill
Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

1.6

1.2

0.8

0.4

0

3/23/16 10/31/16 6/10/17

mg/L







8/29/18

4/9/19

1/19/18

Mann-Whitney (Wilcoxon Rank Sum)

GWC-22

Constituent: Chloride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





GWC-22 background

GWC-22 compliance

background median = 1.5

compliance median = 1.7

Table 1.282

1.645

1.96

2.326

Sig.

Yes

No

No

No

Z = 1.483

Alpha

0.025

0.01

0.1

GWC-5 compliance

background median = 2.85

compliance median = 3.25

Z = 1.4	49	
Alpha	Table	Sig.
0.1	1.282	Yes
0.05	1.645	No
0.025	1.96	No
0.01	2.326	No





Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Constituent: Chloride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Chloride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Fluoride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Fluoride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Fluoride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Constituent: Fluoride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Fluoride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Fluoride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.





Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Fluoride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Fluoride Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

8

6.4

4.8

3.2

1.6

0

3/22/16 10/30/16

6/9/17

s.u.

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: pH Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

8/28/18

4/8/19

1/18/18

Mann-Whitney (Wilcoxon Rank Sum)

GWA-1 (bg)

GWA-1 background

GWA-1 compliance

background median = 6.99

compliance median = 6.845

Z = -1.701 (two-tail)

Table

1.282

1.645

2.326

2.576

1.96

Sig

Yes

Yes

No

No

No

Alpha

0.2

0.05

0.02

0.01

Constituent: pH Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



8

6.4

4.8

3.2

1.6

0

3/22/16 10/30/16

s.u.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: pH Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

8/28/18

4/8/19

1/18/18

Mann-Whitney (Wilcoxon Rank Sum)

GWA-4 (bg)

٠

6/9/17

GWA-4 background

GWA-4 compliance

background median = 6.71

compliance median = 6.77

Z = 0.3403 (two-tail)

Table

1.282

1.645

2.326

2.576

1.96

Sig

No

No

No

No

No

Alpha

0.2

0.05

0.02

0.01

Constituent: pH Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



GWC-18 background

background median = 7.59

compliance median = 7.54

Z = -0.9	9358 (two	-tail)
Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No





Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Constituent: pH Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: pH Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG







Constituent: pH Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Constituent: pH Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



background median = 6.055

Z = 0.0	8492 (two	-tail)
Alpha	Table	Sig.
0.2	1.282	No
0.1	1.645	No
0.05	1.96	No
0.02	2.326	No
0.01	2.576	No

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Mann-Whitney (Wilcoxon Rank Sum) GWA-1 (bg) 6 GWA-1 background 4.8 GWA-1 compliance 3.6 background median = 4.7 mg/L 2.4 compliance median = 5.05 Z = 1.4591.2 Alpha Table Sig. 1.282 Yes 0.1 0.05 1.645 No 0.025 1.96 No 0 0.01 2.326 No 1/18/18 8/28/18 4/8/19 3/22/16 10/30/16 6/9/17





Constituent: pH Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Sulfate Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG







240

180

120

60

0

3/22/16 10/29/16

mg/L

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

8/26/18

4/5/19

1/16/18

Mann-Whitney (Wilcoxon Rank Sum)

GWA-3 (bg)

٠

6/8/17

GWA-3 background

GWA-3 compliance

background median = 110

compliance median = 125

Table

1.282

1.645

2.326

1.96

Sig.

No

No

No

No

Z = 0.5955

Alpha

0.025

0.01

0.1

Constituent: Sulfate Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Sulfate Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Sulfate Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





40

30

20

10

0

3/23/16 10/31/16 6/10/17

mg/L







8/28/18

4/8/19

1/18/18

Mann-Whitney (Wilcoxon Rank Sum)

GWC-23

GWC-23 background

GWC-23 compliance

background median = 5.85

compliance median = 8.8

Table

1.282

1.645

2.326

1.96

Sig.

No

No

No

No

Z = 1.106

Alpha

0.025

0.01

0.1

Constituent: Sulfate Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG







Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

mg/L



Constituent: Sulfate Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Sulfate Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

240

180

120

60

0

3/22/16

mg/L



Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sig.

No

No

No

No

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

11/1/16 6/11/17

500

400

300

200

100

0

3/24/16

mg/L





Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

8/29/18

4/9/19

1/19/18

Mann-Whitney (Wilcoxon Rank Sum)

GWC-18

GWC-18 background

GWC-18 compliance

background median = 198.5

compliance median = 209.5

Table

1.282

1.645

2.326

1.96

Sig.

No

No

No

No

Z = 1.104

Alpha

0.025

0.01

0.1

Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

320

240

160

80

0

3/23/16 10/31/16 6/10/17

mg/L



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

mg/L



Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

8/29/18

4/9/19

1/19/18

Mann-Whitney (Wilcoxon Rank Sum)

GWC-22

GWC-22 background

GWC-22 compliance

background median = 211.5

compliance median = 217

Table

1.282

1.645

2.326

1.96

Sig.

No

No

No

No

Z = 0.2552

Alpha

0.025

0.01

0.1

Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:38 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:39 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:39 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

3/23/16 10/31/16 6/10/17 1/18/18

٠

400

320

240

160

80

0

mg/L





Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:39 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

8/28/18

4/8/19

Mann-Whitney (Wilcoxon Rank Sum)

GWC-7

GWC-7 background

GWC-7 compliance

background median = 250

compliance median = 275.5

Table 1.282

1.645

2.326

1.96

Sig.

No

No

No

No

Z = 1.104

Alpha

0.025

0.01

0.1

4

Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:39 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Total Dissolved Solids Analysis Run 11/24/2019 10:39 PM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

# Prediction Limit (App. III) - Significant Results

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 1/24/2020, 10:05 AM

Well	Upper Lim.	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N %NDs</u>	<b>Transform</b>	<u>Alpha</u>	Method
------	------------	------------	------	---------	-------------	------------------	------------------	--------------	--------

**Constituent** 

# Prediction Limit (App. III) - All Results

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 1/24/2020, 10:05 AM

Constituent	Well	Upper Lim.	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	Method
Boron (mg/L)	GWC-10	0.04104	n/a	10/1/2019	0.031	No	12	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-18	0.1465	n/a	10/1/2019	0.14	No	12	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-19	0.1982	n/a	10/1/2019	0.17	No	12	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-20	0.05	n/a	10/1/2019	0.019	No	12	8.333	n/a	0.002173	NP Intra (normality) 1 of 3
Boron (mg/L)	GWC-21	0.1072	n/a	10/1/2019	0.059	No	12	0	x^(1/3)	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-22	0.07933	n/a	10/1/2019	0.066	No	12	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-23	0.1058	n/a	10/1/2019	0.024	No	12	8.333	sqrt(x)	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-5	0.07251	n/a	10/1/2019	0.071	No	12	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-6	0.04345	n/a	10/1/2019	0.042	No	13	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-7	0.06857	n/a	10/1/2019	0.05	No	12	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-8	0.055	n/a	10/1/2019	0.046	No	12	0	n/a	0.002173	NP Intra (normality) 1 of 3
Boron (mg/L)	GWC-9	0.05	n/a	10/1/2019	0.018	No	12	8.333	n/a	0.002173	NP Intra (normality) 1 of 3
Calcium (mg/L)	GWC-10	55.76	n/a	10/1/2019	36.8	No	14	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-18	44.85	n/a	10/1/2019	38.7	No	13	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-19	48.26	n/a	10/1/2019	42.3	No	12	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-20	59.36	n/a	10/1/2019	59.1	No	12	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-21	73.75	n/a	11/26/2019	45.8	No	12	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-22	51.48	n/a	10/1/2019	46.9	No	12	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-23	43.36	n/a	10/1/2019	39.1	No	12	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-5	86.28	n/a	10/1/2019	70.6	No	12	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-6	69.34	n/a	10/1/2019	64.2	No	12	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-7	65.29	n/a	10/1/2019	28.5	No	12	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-8	83.84	n/a	10/1/2019	64	No	14	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-9	38.25	n/a	10/1/2019	37.2	No	12	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-10	2.121	n/a	10/1/2019	1.5	No	14	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-18	1.714	n/a	10/1/2019	0.94	No	12	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-19	2.298	n/a	10/1/2019	1.3	No	12	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-20	2.15	n/a	10/1/2019	1.1	No	13	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-21	3.621	n/a	10/1/2019	2	No	13	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-22	1.9	n/a	10/1/2019	1.4	No	12	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-23	1.908	n/a	10/1/2019	1.1	No	12	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-5	3.903	n/a	10/1/2019	2.2	No	12	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-6	2.3	n/a	10/1/2019	1.6	No	12	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-7	2.235	n/a	10/1/2019	1.2	No	12	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-8	2.972	n/a	10/1/2019	1.8	No	14	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-9	1.662	n/a	10/1/2019	0.91	No	12	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-10	0.1789	n/a	10/1/2019	0.07	No	12	8.333	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-18	0.211	n/a	10/1/2019	0.11	No	12	8.333	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-19	0.246	n/a	10/1/2019	0.11	No	12	8.333	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-20	0.1788	n/a	10/1/2019	0.069	No	12	8.333	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-21	0.2144	n/a	10/1/2019	0.094	No	12	16.67	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-22	0.1479	n/a	10/1/2019	0.079	No	12	8.333	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-23	0.1766	n/a	10/1/2019	0.079	No	12	8.333	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-5	0.3045	n/a	10/1/2019	0.064	No	12	16.67	sqrt(x)	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-6	0.2727	n/a	10/1/2019	0.063	No	12	16.67	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-7	0.4776	n/a	10/1/2019	0.16	No	12	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-8	0.4002	n/a	10/1/2019	0.13	No	13	0	sqrt(x)	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-9	0.17	n/a	10/1/2019	0.078	No	12	8.333	No	0.0006269	Param Intra 1 of 3
pH (s.u.)	GWC-10	7.586	6.989	10/1/2019	7.07	No	12	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-18	7.722	7.438	10/1/2019	7.65	No	12	0	No	0.0003135	Param Intra 1 of 3

# Prediction Limit (App. III) - All Results

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	Method
pH (s.u.)	GWC-19	7.658	7.277	10/1/2019	7.31	No	12	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-20	7.51	7.052	10/1/2019	7.16	No	14	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-21	7.457	5.818	10/1/2019	6.9	No	12	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-22	7.876	7.404	11/6/2019	7.66	No	12	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-23	7.462	6.861	10/1/2019	7	No	12	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-5	7.174	6.463	10/1/2019	6.81	No	12	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-6	7.281	6.726	10/1/2019	6.97	No	12	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-7	6.483	5.637	10/1/2019	6.09	No	12	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-8	7.678	6.897	10/1/2019	7.11	No	14	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-9	7.222	6.354	10/1/2019	6.77	No	12	0	No	0.0003135	Param Intra 1 of 3
Sulfate (mg/L)	GWC-10	36.22	n/a	10/1/2019	13.4	No	13	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-18	13.92	n/a	10/1/2019	8.9	No	12	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-19	19.66	n/a	10/1/2019	14.7	No	12	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-20	48.76	n/a	11/6/2019	47.3	No	16	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-21	47.33	n/a	10/1/2019	46.3	No	12	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-22	11.39	n/a	10/1/2019	1.9	No	12	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-23	43	n/a	10/1/2019	5.8	No	12	0	n/a	0.002173	NP Intra (normality) 1 of 3
Sulfate (mg/L)	GWC-5	139.4	n/a	10/1/2019	68.1	No	12	0	sqrt(x)	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-6	136.8	n/a	10/1/2019	71.7	No	16	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-7	170.9	n/a	10/1/2019	120	No	12	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-8	57.11	n/a	10/1/2019	47.1	No	12	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-9	81.41	n/a	10/1/2019	72.2	No	13	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-10	257.6	n/a	10/1/2019	186	No	12	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-18	427	n/a	10/1/2019	196	No	12	0	n/a	0.002173	NP Intra (normality) 1 of 3
Total Dissolved Solids (mg/L)	GWC-19	393	n/a	10/1/2019	229	No	12	0	n/a	0.002173	NP Intra (normality) 1 of 3
Total Dissolved Solids (mg/L)	GWC-20	278.3	n/a	10/1/2019	271	No	12	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-21	316.5	n/a	11/26/2019	236	No	12	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-22	324	n/a	10/1/2019	220	No	12	0	n/a	0.002173	NP Intra (normality) 1 of 3
Total Dissolved Solids (mg/L)	GWC-23	284.2	n/a	10/1/2019	203	No	12	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-5	491	n/a	10/1/2019	380	No	12	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-6	411.4	n/a	10/1/2019	348	No	14	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-7	344.5	n/a	10/1/2019	277	No	12	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-8	385.2	n/a	10/1/2019	305	No	14	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved Solids (mg/L)	GWC-9	303.7	n/a	10/1/2019	237	No	12	0	No	0.0006269	Param Intra 1 of 3



Background Data Summary: Mean=0.03339, Std. Dev.=0.004023, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9099, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Prediction Limit



Background Data Summary: Mean=0.1283, Std. Dev.=0.009547, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8732, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Boron Analysis Run 1/24/2020 9:57 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.1779, Std. Dev.=0.01069, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8612, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. 8.333% NDs. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

### Constituent: Boron Analysis Run 1/24/2020 9:57 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Background Data Summary (based on cube root transformation): Mean=0.3329, Std. Dev.=0.07476, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8314, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.06861, Std. Dev.=0.005637, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9573, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Boron Analysis Run 1/24/2020 9:57 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Boron Analysis Run 1/24/2020 9:57 AM

GWC-5 background

GWC-5 compliance

Limit = 0.07251

٠

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Background Data Summary: Mean=0.05848, Std. Dev.=0.007379, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.88, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

## Constituent: Boron Analysis Run 1/24/2020 9:57 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Background Data Summary (based on square root transformation): Mean=0.194, Std. Dev.=0.06906, n=12, 8.333%

NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8403, critical = 0.805. Kappa = 1.902 (c=7, w=12,

Constituent: Boron Analysis Run 1/24/2020 9:57 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=0.0393, Std. Dev.=0.002233, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.2557, critical = 0.814. Kappa = 1.861 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





0

3/23/16



Prediction Limit



Background Data Summary: Mean=0.05663, Std. Dev.=0.006282, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8994, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Boron Analysis Run 1/24/2020 9:57 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas  $^{\mbox{\tiny TM}}$  v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Sarias<sup>14</sup> 9.8.23 Sarias software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Within Limit Intrawell Non-parametric 0.06 0.048 0.036 0.024 0.025 0.02

12/5/16 8/19/17 5/4/18

Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. 8.333% NDs. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

1/16/19 10/1/19

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=41.74, Std. Dev.=7.713, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9357, critical = 0.825. Kappa = 1.819 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=40.19, Std. Dev.=2.504, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9471, critical = 0.814. Kappa = 1.861 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Calcium Analysis Run 1/24/2020 9:57 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=44.04, Std. Dev.=2.218, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9602, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=52.1, Std. Dev.=3.818, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9652, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=43.85, Std. Dev.=15.72, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9405, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=47.75, Std. Dev.=1.96, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8766, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

> Constituent: Calcium Analysis Run 1/24/2020 9:57 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=73.67, Std. Dev.=6.629, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9838, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Background Data Summary: Mean=36.55, Std. Dev.=3.58, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9074, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=62.13, Std. Dev.=3.794, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9346, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=37.28, Std. Dev.=14.72, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9012, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Calcium Analysis Run 1/24/2020 9:57 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=63.01, Std. Dev.=11.45, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9607, critical = 0.825. Kappa = 1.819 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

#### Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=34.99, Std. Dev.=1.714, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9795, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

0



Background Data Summary: Mean=1.616, Std. Dev.=0.2775, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.906, critical = 0.825. Kappa = 1.819 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=1.422, Std. Dev.=0.1536, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8326, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

> Constituent: Chloride Analysis Run 1/24/2020 9:58 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



3/24/16 12/6/16 8/20/17 5/4/18

Limit = 2.298

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=1.746, Std. Dev.=0.2172, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9526, critical = 0.814. Kappa = 1.861 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Background Data Summary: Mean=1.966, Std. Dev.=0.1748, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9548, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

1/16/19

10/1/19

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=2.767, Std. Dev.=0.4589, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9051, critical = 0.814. Kappa = 1.861 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG





Prediction Limit

Intrawell Parametric

Background Data Summary: Mean=1.567, Std. Dev.=0.1747, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8837, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Chloride Analysis Run 1/24/2020 9:58 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



0 3/23/16 12/5/16 8/19/17 5/4/18 1/16/19 10/1/19

Background Data Summary: Mean=1.589, Std. Dev.=0.1676, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9393, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



mg/L

Prediction Limit



Background Data Summary: Mean=3.098, Std. Dev.=0.4233, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9611, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Background Data Summary: Mean=1.985, Std. Dev.=0.1658, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8823, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit





Background Data Summary: Mean=1.692, Std. Dev.=0.2855, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8882, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Chloride Analysis Run 1/24/2020 9:58 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

 $\mathsf{Sanitas}^\mathsf{su}$  v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=1.946, Std. Dev.=0.5642, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8914, critical = 0.825. Kappa = 1.819 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=1.219, Std. Dev.=0.233, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8859, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas<sup>tw</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Background Data Summary: Mean=0.1094, Std. Dev.=0.03652, n=12, 8.333% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9536, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.005132). Report alpha = 0.0026269.





Background Data Summary: Mean=0.1497, Std. Dev.=0.03219, n=12, 8.333% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9448, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Fluoride Analysis Run 1/24/2020 9:58 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Prediction Limit

Intrawell Parametric



GWC-20 background
GWC-20 compliance
GWC-20 compliance
Limit = 0.1788

Background Data Summary: Mean=0.09524, Std. Dev.=0.04394, n=12, 8.333% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9073, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.002629.

Background Data Summary: Mean=0.1584, Std. Dev.=0.04602, n=12, 8.333% NDs. Normality test: Shapiro Wilk

@alpha = 0.01, calculated = 0.9401, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132).

Report alpha = 0.0006269.

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.09464, Std. Dev.=0.06295, n=12, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9534, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05123). Report alpha = 0.0050269.



Background Data Summary: Mean=0.09296, Std. Dev.=0.02886, n=12, 8.333% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9163, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Fluoride Analysis Run 1/24/2020 9:58 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Fluoride Analysis Run 1/24/2020 9:58 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Background Data Summary: Mean=0.1155, Std. Dev.=0.03213, n=12, 8.333% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9783, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.006269.



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.3288, Std. Dev.=0.1172, n=12, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8275, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269. Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Within Limit

mg/L



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.119, Std. Dev.=0.08077, n=12, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9156, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.







Prediction Limit Intrawell Parametric





Background Data Summary: Mean=0.2681, Std. Dev.=0.1102, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8255, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Fluoride Analysis Run 1/24/2020 9:58 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



GWC-8 compliance

Limit = 0.4002



Background Data Summary: Mean=0.09758, Std. Dev.=0.03806, n=12, 8.333% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9179, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Background Data Summary (based on square root transformation): Mean=0.436, Std. Dev.=0.1057, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8442, critical = 0.814. Kappa = 1.861 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=7.288, Std. Dev.=0.157, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9455, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Within Limits

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=7.58, Std. Dev.=0.07483, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9686, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: pH Analysis Run 1/24/2020 9:58 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Prediction Limit Intrawell Parametric 7.7 GWC-19 background GWC-19 compliance 6.16 Limit = 7.658 4.62 S.C. Limit = 7.277 3.08 1.54 0 3/24/16 12/6/16 8/20/17 5/4/18 1/16/19 10/1/19

Background Data Summary: Mean=7.468, Std. Dev.=0.1, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9223, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limits

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=7.281, Std. Dev.=0.126, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9663, critical = 0.825. Kappa = 1.819 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limits

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=6.638, Std. Dev.=0.4309, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.2925, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.





Within Limits

Prediction Limit



Background Data Summary: Mean=7.64, Std. Dev.=0.1242, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9335, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: pH Analysis Run 1/24/2020 9:58 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limits

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=7.162, Std. Dev.=0.158, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.2585, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limits

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=6.818, Std. Dev.=0.1867, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.958, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.
Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=7.003, Std. Dev.=0.1461, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9665, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limits

Prediction Limit



Background Data Summary: Mean=6.06, Std. Dev.=0.2225, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9216, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: pH Analysis Run 1/24/2020 9:58 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Prediction Limit Within Limits Intrawell Parametric 7.7 GWC-8 background -GWC-8 compliance 6.16 Limit = 7.678 4.62 S.C. Limit = 6.897 3.08 1.54 0 3/23/16 12/5/16 8/19/17 5/4/18 1/16/19 10/1/19

Background Data Summary: Mean=7.287, Std. Dev.=0.2147, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8813, critical = 0.825. Kappa = 1.819 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=6.788, Std. Dev.=0.2283, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8852, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

#### Constituent: pH Analysis Run 1/24/2020 9:58 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=18.68, Std. Dev.=9.426, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8184, critical = 0.814. Kappa = 1.861 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.







mg/L

Prediction Limit



Background Data Summary: Mean=11.11, Std. Dev.=1.478, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9247, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Sulfate Analysis Run 1/24/2020 9:58 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Background Data Summary: Mean=16.3, Std. Dev.=1.766, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9713, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary: Mean=34.02, Std. Dev.=8.488, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9803, critical = 0.844. Kappa = 1.736 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=29.68, Std. Dev.=9.277, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8983, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary: Mean=8.283, Std. Dev.=1.635, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8884, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Sulfate Analysis Run 1/24/2020 9:58 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Prediction Limit Within Limit Intrawell Non-parametric 50 GWC-23 background 40 GWC-23 compliance 30 mg/L Limit = 43 20 10 0 3/23/16 12/5/16 8/19/17 5/4/18 1/16/19 10/1/19

Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary (based on square root transformation): Mean=9.303, Std. Dev.=1.316, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8354, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.00132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=111.6, Std. Dev.=14.51, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9372, critical = 0.844. Kappa = 1.736 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.







mg/L

Prediction Limit



Background Data Summary: Mean=114.3, Std. Dev.=29.75, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9639, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Sulfate Analysis Run 1/24/2020 9:58 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Prediction Limit Intrawell Parametric 60 GWC-8 background 48 GWC-8 compliance 36 mg/L Limit = 57.11 24 12 0 3/23/16 12/5/16 8/19/17 5/4/18 1/16/19 10/1/19

Background Data Summary: Mean=42.1, Std. Dev.=7.892, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9112, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=69.69, Std. Dev.=6.302, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9723, critical = 0.814. Kappa = 1.861 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=183.9, Std. Dev.=38.73, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9848, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Constituent: Total Dissolved Solids Analysis Run 1/24/2020 9:58 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Sanitas  $^{\mbox{\tiny W}}$  v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=225.8, Std. Dev.=27.65, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9064, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=178.3, Std. Dev.=72.65, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.906, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Constituent: Total Dissolved Solids Analysis Run 1/24/2020 9:58 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=196.8, Std. Dev.=45.96, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8544, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit



Intrawell Parametric

Background Data Summary: Mean=396.3, Std. Dev.=49.81, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8349, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=332.4, Std. Dev.=43.41, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9174, critical = 0.825. Kappa = 1.819 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit



Prediction Limit

Background Data Summary: Mean=270.7, Std. Dev.=38.84, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8285, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

> Constituent: Total Dissolved Solids Analysis Run 1/24/2020 9:58 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Prediction Limit Within Limit Intrawell Parametric 500 GWC-8 background 400 GWC-8 compliance 300 mg/L Limit = 385.2 200 100 0 3/23/16 12/5/16 8/19/17 5/4/18 10/1/19 1/16/19

Background Data Summary: Mean=267.2, Std. Dev.=64.88, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.869, critical = 0.825. Kappa = 1.819 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.006269.

Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary: Mean=235 1, Std. Dev.=36.07, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8536, critical = 0.805. Kappa = 1.902 (c=7, w=12, 1 of 3, event alpha = 0.05132). Report alpha = 0.0006269.

Constituent: Total Dissolved Solids Analysis Run 1/24/2020 9:58 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

D&O Parameters Statistical Analysis Package (SW Program) D02

# Outlier Summary (D&O) - Huffaker Rd. Landfill

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 1/23/2020, 10:37 AM

	GWC-8 Antimony (	mg/L) GWC-7 Arsenic (mg	g/L) GWC-7 Beryllium (r	ng/L) GWC-7 Cadmium (	mg/L) GWC-7 Chromium	(mg/L) GWC-7 Cobalt (mg	L) GWC-7 Copper (mg	g/L) GWC-7 Nickel (mg/l	L) GWC-7 Zinc (mg/L)
5/9/2007		0.038 (o)	0.28 (o)	0.023 (o)	0.11 (o)	6.5 (o)	0.44 (o)	18 (o)	45 (o)
7/6/2007						2.1 (o)		5.9 (o)	16 (o)
8/28/2007						1.4 (o)			11 (o)
11/6/2007	0.0064 (o)					1.1 (o)			

#### **Date Ranges**

Barium (mg/L)

GWA-2 background:4/13/2010-10/4/2018 GWC-19 background:4/13/2010-10/4/2018 GWC-22 background:4/13/2010-10/4/2018 GWC-6 background:3/23/2016-10/4/2018 GWC-7 background:4/3/2012-10/4/2018 GWC-9 background:10/4/2011-10/5/2018

Cobalt (mg/L)

GWC-7 background:3/12/2013-10/4/2018 Nickel (mg/L)

GWC-7 background:3/12/2013-10/4/2018 Zinc (mg/L)

GWC-7 background:3/12/2013-10/4/2018

### Prediction Limit (D&O) - Significant Results

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 11/26/2019, 10:02 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	Transform	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	GWC-7	0.0088	n/a	10/1/2019	0.01	Yes	30	46.67	n/a	0.002008	NP Intra (normality) 1 of 2
Barium (mg/L)	GWC-20	0.1358	n/a	10/1/2019	0.14	Yes	31	0	x^3	0.0002926	Param Intra 1 of 2

Note:

(1) The Barium UPL and the October result values at GWC-20 are equal with two significant digits; therefore, barium is not considered an SSI.

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 11/26/2019, 10:02 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	Method
Antimony (mg/L)	GWC-10	0.003	n/a	10/1/2019	0.003ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-18	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-19	0.003	n/a	10/1/2019	0.003ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-20	0.003	n/a	10/1/2019	0.003ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-21	0.003	n/a	10/1/2019	0.003ND	No	30	100	n/a	0.002008	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-22	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-23	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-5	0.003	n/a	10/1/2019	0.003ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-6	0.003	n/a	10/1/2019	0.003ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-7	0.003	n/a	10/1/2019	0.003ND	No	31	96.77	n/a	0.001905	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-8	0.003	n/a	10/1/2019	0.003ND	No	30	96.67	n/a	0.002008	NP Intra (NDs) 1 of 2
Antimony (mg/L)	GWC-9	0.003	n/a	10/1/2019	0.003ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-10	0.005	n/a	10/1/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-18	0.005	n/a	10/1/2019	0.005ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-19	0.005	n/a	10/1/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-20	0.005	n/a	10/1/2019	0.005ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-21	0.005	n/a	10/1/2019	0.005ND	No	30	86.67	n/a	0.002008	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-22	0.005	n/a	10/1/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-23	0.005	n/a	10/1/2019	0.00082	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-5	0.005	n/a	10/1/2019	0.005ND	No	32	93.75	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-6	0.005	n/a	10/1/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-7	0.0088	n/a	10/1/2019	0.01	Yes	30	46.67	n/a	0.002008	NP Intra (normality) 1 of 2
Arsenic (mg/L)	GWC-8	0.005	n/a	10/1/2019	0.0028	No	31	87.1	n/a	0.001905	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GWC-9	0.005	n/a	10/1/2019	0.00071	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Barium (mg/L)	GWC-10	0.1912	n/a	10/1/2019	0.12	No	33	0	No	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-18	0.08974	n/a	10/1/2019	0.082	No	32	0	No	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-19	0.1697	n/a	10/1/2019	0.15	No	23	0	x^4	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-20	0.1358	n/a	10/1/2019	0.14	Yes	31	0	x^3	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-21	0.2404	n/a	10/1/2019	0.18	No	30	0	ln(x)	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-22	0.121	n/a	10/1/2019	0.1	No	23	0	n/a	0.003415	NP Intra (normality) 1 of 2
Barium (mg/L)	GWC-23	0.08464	n/a	10/1/2019	0.082	No	32	0	No	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-5	0.1274	n/a	10/1/2019	0.09	No	32	0	No	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-6	0.1978	n/a	10/1/2019	0.18	No	11	0	No	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-7	0.4063	n/a	10/1/2019	0.085	No	19	0	sqrt(x)	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-8	0.1227	n/a	10/1/2019	0.12	No	31	0	sqrt(x)	0.0002926	Param Intra 1 of 2
Barium (mg/L)	GWC-9	0.07338	n/a	10/1/2019	0.071	No	20	0	No	0.0002926	Param Intra 1 of 2
Beryllium (mg/L)	GWC-10	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-18	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-19	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-20	0.003	n/a	10/1/2019	0.003ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-21	0.003	n/a	10/1/2019	0.003ND	No	30	100	n/a	0.002008	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-22	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-23	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-5	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-6	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-7	0.137	n/a	10/1/2019	0.0001	No	30	23.33	ln(x)	0.0002926	Param Intra 1 of 2
Beryllium (mg/L)	GWC-8	0.003	n/a	10/1/2019	0.003ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	GWC-9	0.003	n/a	10/1/2019	0.003ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-10	0.001	n/a	10/1/2019	0.001ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-18	0.001	n/a	10/1/2019	0.001ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2

Constituent	Well	Upper Lim.	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cadmium (mg/L)	GWC-19	0.001	n/a	10/1/2019	0.001ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-20	0.001	n/a	10/1/2019	0.001ND	No	31	96.77	n/a	0.001905	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-21	0.001	n/a	10/1/2019	0.001ND	No	30	93.33	n/a	0.002008	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-22	0.001	n/a	10/1/2019	0.001ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-23	0.001	n/a	10/1/2019	0.001ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-5	0.0015	n/a	10/1/2019	0.001ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-6	0.001	n/a	10/1/2019	0.001ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-7	0.0081	n/a	10/1/2019	0.001ND	No	30	80	n/a	0.002008	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-8	0.001	n/a	10/1/2019	0.001ND	No	31	96.77	n/a	0.001905	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GWC-9	0.001	n/a	10/1/2019	0.001ND	No	32	93.75	n/a	0.001803	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-10	0.01	n/a	10/1/2019	0.01ND	No	32	90.63	n/a	0.001803	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-18	0.01	n/a	10/1/2019	0.00086	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-19	0.01	n/a	10/1/2019	0.01ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-20	0.01	n/a	10/1/2019	0.01ND	No	31	90.32	n/a	0.001905	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-21	0.01	n/a	10/1/2019	0.01ND	No	30	96.67	n/a	0.002008	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-22	0.01	n/a	10/1/2019	0.01ND	No	32	93.75	n/a	0.001803	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-23	0.01	n/a	10/1/2019	0.0051	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-5	0.01	n/a	10/1/2019	0.0012	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-6	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-7	0.01	n/a	10/1/2019	0.01ND	No	30	83.33	n/a	0.002008	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-8	0.01	n/a	10/1/2019	0.0005	No	31	90.32	n/a	0.001905	NP Intra (NDs) 1 of 2
Chromium (mg/L)	GWC-9	0.01	n/a	10/1/2019	0.01ND	No	32	90.63	n/a	0.001803	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-10	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-18	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-19	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-20	0.01	n/a	10/1/2019	0.01ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-21	0.01	n/a	10/1/2019	0.00046	No	30	63.33	n/a	0.002008	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-22	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-23	0.01	n/a	10/1/2019	0.00033	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-5	0.01	n/a	10/1/2019	0.01ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-6	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-7	0.08032	n/a	10/1/2019	0.017	No	17	0	No	0.0002926	Param Intra 1 of 2
Cobalt (mg/L)	GWC-8	0.01	n/a	10/1/2019	0.00081	No	31	96.77	n/a	0.001905	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GWC-9	0.01	n/a	10/1/2019	0.00041	No	32	93.75	n/a	0.001803	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-10	0.025	n/a	10/1/2019	0.025ND	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-18	0.025	n/a	10/1/2019	0.00037	No	27	92.59	n/a	0.002502	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-19	0.025	n/a	10/1/2019	0.00019	No	27	88.89	n/a	0.002502	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-20	0.025	n/a	10/1/2019	0.00023	No	26	96.15	n/a	0.002667	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-21	0.025	n/a	10/1/2019	0.00084	No	25	76	n/a	0.002832	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-22	0.025	n/a	10/1/2019	0.00031	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-23	0.025	n/a	10/1/2019	0.00083	No	27	85.19	n/a	0.002502	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-5	0.025	n/a	10/1/2019	0.00031	No	27	88.89	n/a	0.002502	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-6	0.025	n/a	10/1/2019	0.00023	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-7	0.025	n/a	10/1/2019	0.00034	No	25	80	n/a	0.002832	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-8	0.025	n/a	10/1/2019	0.00036	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2
Copper (mg/L)	GWC-9	0.025	n/a	10/1/2019	0.025ND	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-10	0.005	n/a	10/1/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-18	0.005	n/a	10/1/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-19	0.005	n/a	10/1/2019	0.005ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-20	0.005	n/a	10/1/2019	0.005ND	No	31	96.77	n/a	0.001905	NP Intra (NDs) 1 of 2

Constituent	Well	<u>Upper Lim.</u>	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	Method
Lead (mg/L)	GWC-21	0.005	n/a	10/1/2019	0.000075	No	30	96.67	n/a	0.002008	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-22	0.005	n/a	10/1/2019	0.00012	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-23	0.005	n/a	10/1/2019	0.00022	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-5	0.005	n/a	10/1/2019	0.000065	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-6	0.005	n/a	10/1/2019	0.005ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-7	0.005	n/a	10/1/2019	0.00005	No	31	83.87	n/a	0.001905	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-8	0.005	n/a	10/1/2019	0.005ND	No	31	96.77	n/a	0.001905	NP Intra (NDs) 1 of 2
Lead (mg/L)	GWC-9	0.005	n/a	10/1/2019	0.005ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Nickel (mg/L)	GWC-10	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Nickel (mg/L)	GWC-18	0.01	n/a	10/1/2019	0.0015	No	27	85.19	n/a	0.002502	NP Intra (NDs) 1 of 2
Nickel (mg/L)	GWC-19	0.01	n/a	10/1/2019	0.01ND	No	27	88.89	n/a	0.002502	NP Intra (NDs) 1 of 2
Nickel (mg/L)	GWC-20	0.01	n/a	10/1/2019	0.01ND	No	26	92.31	n/a	0.002667	NP Intra (NDs) 1 of 2
Nickel (mg/L)	GWC-21	0.0104	n/a	10/1/2019	0.0031	No	25	24	x^(1/3)	0.0002926	Param Intra 1 of 2
Nickel (mg/L)	GWC-22	0.01	n/a	10/1/2019	0.01ND	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2
Nickel (mg/L)	GWC-23	0.01	n/a	10/1/2019	0.0035	No	27	81.48	n/a	0.002502	NP Intra (NDs) 1 of 2
Nickel (mg/L)	GWC-5	0.01	n/a	10/1/2019	0.00088	No	27	92.59	n/a	0.002502	NP Intra (NDs) 1 of 2
Nickel (mg/L)	GWC-6	0.01	n/a	10/1/2019	0.00042	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2
Nickel (mg/L)	GWC-7	0.3321	n/a	10/1/2019	0.07	No	12	0	No	0.0002926	Param Intra 1 of 2
Nickel (mg/L)	GWC-8	0.01	n/a	10/1/2019	0.00063	No	26	96.15	n/a	0.002667	NP Intra (NDs) 1 of 2
Nickel (mg/L)	GWC-9	0.01	n/a	10/1/2019	0.0022	No	27	66.67	n/a	0.002502	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-10	0.01	n/a	10/1/2019	0.01ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-18	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-19	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-20	0.01	n/a	10/1/2019	0.01ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-21	0.01	n/a	10/1/2019	0.01ND	No	30	93.33	n/a	0.002008	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-22	0.01	n/a	10/1/2019	0.0014	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-23	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-5	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-6	0.01	n/a	10/1/2019	0.01ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-7	0.01	n/a	10/1/2019	0.01ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-8	0.01	n/a	10/1/2019	0.01ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Selenium (mg/L)	GWC-9	0.01	n/a	10/1/2019	0.01ND	No	32	96.88	n/a	0.001803	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-10	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-18	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-19	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-20	0.01	n/a	10/1/2019	0.01ND	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-21	0.01	n/a	10/1/2019	0.01ND	No	25	96	n/a	0.002832	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-22	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-23	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-5	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-6	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-7	0.01	n/a	10/1/2019	0.01ND	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-8	0.01	n/a	10/1/2019	0.01ND	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2
Silver (mg/L)	GWC-9	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-10	0.001	n/a	10/1/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-18	0.001	n/a	10/1/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-19	0.001	n/a	10/1/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-20	0.001	n/a	10/1/2019	0.001ND	No	30	100	n/a	0.002008	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-21	0.001	n/a	10/1/2019	0.001ND	No	29	100	n/a	0.002172	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-22	0.001	n/a	10/1/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 11/26/2019, 10:02 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	Transform	<u>Alpha</u>	Method
Thallium (mg/L)	GWC-23	0.001	n/a	10/1/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-5	0.001	n/a	10/1/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-6	0.001	n/a	10/1/2019	0.001ND	No	32	100	n/a	0.001803	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-7	0.001	n/a	10/1/2019	0.001ND	No	30	96.67	n/a	0.002008	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-8	0.001	n/a	10/1/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GWC-9	0.001	n/a	10/1/2019	0.001ND	No	31	100	n/a	0.001905	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-10	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-18	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-19	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-20	0.01	n/a	10/1/2019	0.01ND	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-21	0.01	n/a	10/1/2019	0.01ND	No	25	92	n/a	0.002832	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-22	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-23	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-5	0.01	n/a	10/1/2019	0.01ND	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-6	0.01	n/a	10/1/2019	0.01ND	No	27	100	n/a	0.002502	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-7	0.01	n/a	10/1/2019	0.01ND	No	26	80.77	n/a	0.002667	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-8	0.01	n/a	10/1/2019	0.01ND	No	26	100	n/a	0.002667	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GWC-9	0.01	n/a	10/1/2019	0.01ND	No	27	96.3	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-10	0.01	n/a	10/1/2019	0.0049	No	27	77.78	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-18	0.01	n/a	10/1/2019	0.006	No	27	70.37	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-19	0.013	n/a	10/1/2019	0.0049	No	27	59.26	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-20	0.01	n/a	10/1/2019	0.0063	No	26	80.77	n/a	0.002667	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-21	0.009513	n/a	10/1/2019	0.0078	No	25	12	No	0.0002926	Param Intra 1 of 2
Zinc (mg/L)	GWC-22	0.01	n/a	10/1/2019	0.0054	No	27	81.48	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-23	0.01	n/a	10/1/2019	0.0057	No	27	55.56	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-5	0.01	n/a	10/1/2019	0.0053	No	27	55.56	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-6	0.01	n/a	10/1/2019	0.0056	No	27	74.07	n/a	0.002502	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-7	0.6123	n/a	10/1/2019	0.12	No	12	0	No	0.0002926	Param Intra 1 of 2
Zinc (mg/L)	GWC-8	0.01	n/a	10/1/2019	0.0055	No	26	73.08	n/a	0.002667	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GWC-9	0.01	n/a	10/1/2019	0.0052	No	27	66.67	n/a	0.002502	NP Intra (NDs) 1 of 2





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Antimony Analysis Run 11/26/2019 9:59 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



nonow symbols indicate censored values.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 30) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Antimony Analysis Run 11/26/2019 9:59 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2). Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

**Prediction Limit** Within Limit Intrawell Non-parametric 0.005 GWC-6 background 0.004 GWC-6 compliance 0.003 ng/L hino e Limit = 0.0030.002 0.001 0 9/10/09 3/16/12 9/20/14 3/26/17 10/1/19 3/7/07

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Constituent: Antimony Analysis Run 11/26/2019 9:59 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 96.67% NDs. Well-constituent pair annual alpha = 0.00208 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Arsenic Analysis Run 11/26/2019 9:59 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2). Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Within Limit

Intrawell Non-parametric 0.005 GWC-21 background 0.004 GWC-21 background 0.002 0.002 0.001 GWC-21 background 0.004 GWC-21 compliance Limit = 0.005

Prediction Limit

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 86.67% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.00208 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Arsenic Analysis Run 11/26/2019 9:59 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Arsenic Analysis Run 11/26/2019 9:59 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 93.75% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 30 background values. 46.67% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).

Constituent: Arsenic Analysis Run 11/26/2019 9:59 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 87.1% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=0.1255, Std. Dev.=0.02772, n=33. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.2166, critical = 0.906. Kappa = 2.37 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit



Prediction Limit

Background Data Summary: Mean=0.07311, Std. Dev.=0.006987, n=32. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.946, critical = 0.904. Kappa = 2.38 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Constituent: Barium Analysis Run 11/26/2019 9:59 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Background Data Summary (based on x\*4 transformation): Mean=0.0003879, Std. Dev.=0.000176, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9161, critical = 0.881. Kappa = 2.512 (c=15, w=12, 1 of 2, event alpha = 0.0002926.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit



Background Data Summary (based on cube transformation): Mean=0.001502, Std. Dev.=0.0004195, n=31. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9239, critical = 0.902. Kappa = 2.39 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.002926.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary (based on natural log transformation): Mean=-2.722, Std. Dev.=0.5402, n=30. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9034, critical = 0.9. Kappa = 2.4 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.



Within Limit

Prediction Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 23 background values. Well-constituent pair annual alpha = 0.006819. Individual comparison alpha = 0.003415 (1 of 2).



Constituent: Barium Analysis Run 11/26/2019 9:59 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Limit = 0.08464

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.1019, Std. Dev.=0.01074, n=32. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9137, critical = 0.904. Kappa = 2.38 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Background Data Summary: Mean=0.06272, Std. Dev.=0.009212, n=32. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9573, critical = 0.904. Kappa = 2.38 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Background Data Summary: Mean=0.1654, Std. Dev.=0.01034, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8754, critical = 0.792. Kappa = 3.135 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.





mg/L

Prediction Limit Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=0.3226, Std. Dev.=0.1206, n=19. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9476, critical = 0.863. Kappa = 2.611 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.





Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=0.316, Std. Dev.=0.01439, n=31.

Limit = 0.1227

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.06193, Std. Dev.=0.00445, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9577, critical = 0.868. Kappa = 2.575 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9173, critical = 0.902. Kappa = 2.39 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.



Hollow symbols indicate censored value



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Beryllium Analysis Run 11/26/2019 9:59 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored, limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

#### Constituent: Beryllium Analysis Run 11/26/2019 9:59 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 30) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Beryllium Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored, limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Tioliow symbols indicate censored values



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-6.771, Std. Dev.=1.993, n=30, 23.33% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9446, critical = 0.9. Kappa = 2.4 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Constituent: Beryllium Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Cadmium Analysis Run 11/26/2019 10:00 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 93.33% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Cadmium Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



0.0018

0

ጉ

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 80% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).

7/6/07 12/16/09 5/28/12 11/8/14 4/20/17 10/1/19

Constituent: Cadmium Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 93.75% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Within Limit



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 90.63% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Constituent: Chromium Analysis Run 11/26/2019 10:00 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 90.32% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Within Limit



Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 96.67% NDs. Well-constituent pair annual alpha = 0.00208 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 93.75% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Chromium Analysis Run 11/26/2019 10:00 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).

Constituent: Chromium Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 90.32% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 90.63% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Cobalt Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2). Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Within Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 63.33% NDs. Well-constituent pair annual alpha = 0.00208 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2). Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



mg/L

Prediction Limit



Background Data Summary: Mean=0.03376, Std. Dev.=0.01735, n=17. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9626, critical = 0.851. Kappa = 2.684 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Constituent: Cobalt Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 93.75% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 92.59% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Copper Analysis Run 11/26/2019 10:00 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 88.89% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 96.15% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 76% NDs. Well-constituent pair annual alpha = 0.005656. Individual comparison alpha = 0.002832 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Copper Analysis Run 11/26/2019 10:00 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 85.19% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 88.89% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

0

5/9/07

Individual comparison alpha = 0.002667 (1 of 2).

**Prediction Limit** Within Limit Intrawell Non-parametric 0.03 GWC-6 background 0.024 GWC-6 compliance 0.018 ng/L Limit = 0.0250.012 0.006 0 3/7/07 9/10/09 3/16/12 9/20/14 3/26/17 10/1/19

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Hollow symbols indicate censored values. Prediction Limit Within Limit Intrawell Non-parametric 0.03 GWC-7 background 0.024 GWC-7 compliance ٠ 0.018 mg/L Limit = 0.025 0.012 0.006 0 12/16/09 5/28/12 11/8/14 4/20/17 10/1/19 7/6/07

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 80% NDs. Well-constituent pair annual alpha = 0.005656. Individual comparison alpha = 0.002832 (1 of 2).

Constituent: Copper Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Copper Analysis Run 11/26/2019 10:00 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Hollow symbols indicate censored values. Within Limit Prediction Limit Intrawell Non-parametric 0.03 0.024 0.012 0.012 0.006

10/30/09 4/23/12 10/15/14 4/8/17



10/1/19

Hollow symbols indicate censored values. Prediction Limit Within Limit Intrawell Non-parametric 0.03 GWC-9 background 0.024 GWC-9 compliance ٠ 0.018 mg/L Limit = 0.025 0.012 0.006 0 9/10/09 3/16/12 9/20/14 3/26/17 10/1/19 3/7/07

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Copper Analysis Run 11/26/2019 10:00 AM

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background

values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327.

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Constituent: Copper Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Lead Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Within Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 96.67% NDs. Well-constituent pair annual alpha = 0.00208 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Within Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 83.87% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Constituent: Lead Analysis Run 11/26/2019 10:00 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 31 background values. 96.77% NDs. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 85.19% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Nickel Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 88.89% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2). 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 92.31% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

Prediction Limit Within Limit Intrawell Parametric 0.02 GWC-21 background 0.016 GWC-21 compliance 0.012 mg/L Limit = 0.01040.008 0.004 0 3/6/07 9/9/09 3/15/12 9/20/14 3/26/17 10/1/19

Background Data Summary (based on cube root transformation) (after Kaplan-Meier Adjustment): Mean=0.156, Std. Dev.=0.02523, n=25, 24% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8912, critical = 0.888. Kappa = 2.47 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Nickel Analysis Run 11/26/2019 10:00 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 81.48% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



0

3/7/07 9/10/09 3/16/12 9/20/14 3/26/17 10/1/19 Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 92.59% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

3/7/07

 Within Limit
 Prediction Limit

 0.01
 Intrawell Non-parametric

 0.008
 GWC-6 background

 0.006
 GWC-6 compliance

 0.004
 Intrawell Non-parametric

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

9/10/09 3/16/12 9/20/14 3/26/17 10/1/19



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit





Background Data Summary: Mean=0.133, Std. Dev.=0.06625, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9771, critical = 0.805. Kappa = 3.005 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Constituent: Nickel Analysis Run 11/26/2019 10:00 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 96.15% NDs. Well-constituent pair annual alpha = 0.00267 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Within Limit



Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Selenium Analysis Run 11/26/2019 10:00 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Selenium Analysis Run 11/26/2019 10:00 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

3/6/07

9/9/09

Within Limit



Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 93.33% NDs. Well-constituent pair annual alpha = 0.00208 (1 of 2).





Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Hollow symbols indicate censored values.

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

Constituent: Selenium Analysis Run 11/26/2019 10:01 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Hollow symbols indicate censored values. Within Limit Prediction Limit Intrawell Non-parametric

GWC-23 background

GWC-23 background

GWC-23 compliance
Limit = 0.01

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).

3/15/12 9/20/14 3/26/17 10/1/19



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Constituent: Selenium Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

ng/L



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 32 background values. 96.88% NDs. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Silver Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored, limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.02502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 96% NDs. Well-constituent pair annual alpha = 0.005656. Individual comparison alpha = 0.002832 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Silver Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Silver Analysis Run 11/26/2019 10:01 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

## Constituent: Silver Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

## Constituent: Silver Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

Constituent: Silver Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Hollow symbols indicate censored values.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Constituent: Thallium Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 30) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).



Hollow symbols indicate censored values.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 29) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.00434. Individual comparison alpha = 0.002172 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).

Constituent: Thallium Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 32) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003603. Individual comparison alpha = 0.001803 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 30 background values. 96.67% NDs. Well-constituent pair annual alpha = 0.004011. Individual comparison alpha = 0.002008 (1 of 2).

Constituent: Thallium Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 31) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003807. Individual comparison alpha = 0.001905 (1 of 2).



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

0

3/6/07

9/9/09



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Vanadium Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



GWC-19 background
 GWC-19 compliance

Limit = 0.01

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.

Within Limit





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

3/15/12 9/20/14 3/26/17 10/1/19

**Prediction Limit** Within Limit Intrawell Non-parametric 10000 GWC-21 background 0.008 GWC-21 compliance 0.006 ng/L Limit = 0.010.004 0.002 0 3/6/07 9/9/09 3/15/12 9/20/14 3/26/17 10/1/19

Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 92% NDs. Well-constituent pair annual alpha = 0.005656. Individual comparison alpha = 0.002832 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Vanadium Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Constituent: Vanadium Analysis Run 11/26/2019 10:01 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanita<sup>+\*</sup> v 9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values. Within Limit Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 27) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 80.77% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

Constituent: Vanadium Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 26) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 96.3% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 77.78% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 70.37% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Zinc Analysis Run 11/26/2019 10:01 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 59.26% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 80.77% NDs. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2).

Prediction Limit Within Limit Intrawell Parametric 0.02 GWC-21 background 0.016 GWC-21 compliance 0.012 mg/L Limit = 0.009513 0.008 0.004 0 3/6/07 9/9/09 3/15/12 9/20/14 3/26/17 10/1/19

Background Data Summary: Mean=0.004877, Std. Dev.=0.001877, n=25, 12% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.908, critical = 0.888. Kappa = 2.47 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.002926.





Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 81.48% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

Constituent: Zinc Analysis Run 11/26/2019 10:01 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 55.56% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 55.56% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 74.07% NDs. Well-constituent pair annual alpha = 0.002502 (1 of 2).



Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG

Within Limit

Prediction Limit





Background Data Summary: Mean=0.2426, Std. Dev.=0.123, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9762, critical = 0.805. Kappa = 3.005 (c=15, w=12, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002926.

Constituent: Zinc Analysis Run 11/26/2019 10:01 AM

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 26 background values. 73.08% NDs. Well-constituent pair annual alpha = 0.00267 (1 of 2).



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 27 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.004998. Individual comparison alpha = 0.002502 (1 of 2).

## Trend Test (D&O) - Significant Results

	Ha	ammond AP	Client: Georgia Power	Data: Huffaker Road Landfill			Printed 11/26/20	19, 10:57 AM			
Constituent	Well	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	Normality	<u>Xform</u>	<u>Alpha</u>	Method
Arsenic (mg/L)	GWA-3 (bg)	0	-235	-176	Yes	34	67.65	n/a	n/a	0.01	NP

## Trend Test (D&O) - All Results

Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Printed 11/26/2019, 10:57 AM

<u>Constituent</u>	Well	Slope	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	Method
Arsenic (mg/L)	GWA-1 (bg)	0	0	176	No	34	100	n/a	n/a	0.01	NP
Arsenic (mg/L)	GWA-11 (bg)	0	-31	-176	No	34	97.06	n/a	n/a	0.01	NP
Arsenic (mg/L)	GWA-2 (bg)	0	0	176	No	34	100	n/a	n/a	0.01	NP
Arsenic (mg/L)	GWA-3 (bg)	0	-235	-176	Yes	34	67.65	n/a	n/a	0.01	NP
Arsenic (mg/L)	GWA-4 (bg)	0	-96	-176	No	34	88.24	n/a	n/a	0.01	NP
Arsenic (mg/L)	GWC-7	0.00005987	127	167	No	33	42.42	n/a	n/a	0.01	NP



Constituent: Arsenic Analysis Run 11/26/2019 10:56 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Arsenic Analysis Run 11/26/2019 10:56 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill

Sanitas™ v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG



Constituent: Arsenic Analysis Run 11/26/2019 10:56 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill





Constituent: Arsenic Analysis Run 11/26/2019 10:56 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill



Constituent: Arsenic Analysis Run 11/26/2019 10:56 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill Sanitas<sup>™</sup> v.9.6.23f Sanitas software licensed to Geosyntec Consultants. UG Hollow symbols indicate censored values.



Constituent: Arsenic Analysis Run 11/26/2019 10:56 AM Hammond AP Client: Georgia Power Data: Huffaker Road Landfill