Prepared for



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

2018 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 2019

Geosyntec[>]

CERTIFICATION STATEMENT

This 2018 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] and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10 under the supervision of a licensed professional engineer with Geosyntec Consultants.

i

	/	GEORG
	(*	No. PE036641 PROFESSIONAL
UBLaw .		C. Contractor
Whitney Law	Ń	2 HIGINE IN
Georgia Professional Eng	ginee	r 10. 556

<u>1/31/2019</u> Date

GW6581B/GA180562_Huffaker_2018CCRAnnualRpt

Geosyntec[>]

TABLE OF CONTENTS

1.0	INT	RODUCTION	. 1
	1.1	Site Description and Background	. 1
	1.2	Regional Geology and Hydrogeologic Setting	. 1
	1.3	Groundwater Monitoring Well Network	. 2
2.0	GRO	OUNDWATER MONITORING ACTIVITIES	3
	2.1	Monitoring Well Installation and Maintenance	. 3
	2.2	Alternate Source Demonstrations	. 3
	2.3	Detection Monitoring	. 3
3.0	SAN	APLE METHODOLOGY & ANALYSIS	4
	3.1	Groundwater Level Measurement	. 4
	3.2	Groundwater Gradient and Flow Velocity	. 4
	3.3	Groundwater Sampling	. 5
	3.4	Laboratory Analyses	. 6
	3.5	Quality Assurance and Quality Control	. 6
4.0	STA	TISTICAL ANALYSES	. 8
	4.1	Statistical Methods	. 8
	4.2	Statistical Analysis Results	. 9
5.0	MO	NITORING PROGRAM STATUS	10
6.0	CON	NCLUSIONS AND FUTURE ACTIONS	11
7.0	REF	ERENCES	12

LIST OF TABLES

Table 1	Monitoring Well Network Summary
Table 2	Groundwater Sampling Event Summary for 2018
Table 3	Summary of Groundwater Elevations
Table 4	Groundwater Flow Velocity Calculations - 2018

Table 5Summary of Groundwater Analytical Data



LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Well Location Map
Figure 3	Potentiometric Surface Contour Map – March 2018
Figure 4	Potentiometric Surface Contour Map – October 2018

LIST OF APPENDICES

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



LIST OF ACRONYMS

ASD	Alternate Source Demonstration
cm/sec	centimeters per second
CCR	coal combustion residual
CFR	Code of Federal Regulations
DO	dissolved oxygen
EPD	Georgia Environmental Protection Division
ft	feet
ft AMSL	feet above mean sea level
ft/ft	feet per foot
ft/day	feet per day
ft/year	feet per year
GPC	Georgia Power Company
mg/L	milligrams per liter
NELAP	National Environmental Laboratory Accreditation Program
NTU	Nephelometric Turbidity Unit
ORP	Oxidation/Reduction Potential
PE	professional engineer
PL	prediction limit
PQL	practical quantitation limit
QA/QC	quality assurance/quality control
ROS	regression on order statistics
SAR	Site Acceptability Report
SCS	Southern Company Services
SSI	statistically significant increase
SM	standard method
TDS	total dissolved solids
USEPA	United States Environmental Protection Agency



1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual rule (CCR Rule) [40 Code of Federal Regulations (CFR) 257 Subpart D] and the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management 391-3-4-.10, Geosyntec Consultants has prepared this *2018 Annual Groundwater Monitoring and Corrective Action Report* to document groundwater monitoring activities conducted during the 2018 calendar year at the Georgia Power Company (GPC) Plant Hammond, Huffaker Road Landfill (the landfill or the site) and satisfies the requirements of 40 CFR §257.90(e). Groundwater monitoring and reporting for the site is performed in accordance with the requirements of 40 CFR §257.90 through §257.94. This report documents the activities completed to establish the groundwater monitoring program and actions through the 2018 calendar year.

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 on the property between 2005 and 2007 over a closed surface clay mine, previously owned by Boral Bricks, Inc. Based on review of historical aerial photos, clay mining operations occurred at the property from the early 1990s to 2005. It is comprised of active Parcels A and B, active Parcel E, and future Parcels C and D.

GPC's Solid Waste permit number 057-022D (LI) for the landfill was approved by Georgia EPD on May 26, 2006. Disposal at the landfill was approved by Georgia EPD on April 23, 2008, and disposal commenced on May 5, 2008. No ash or gypsum was stored in the landfill prior to this date.

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. 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 Groundwater Monitoring Well Network

In accordance with 40 CFR §257.91, a groundwater monitoring system was installed that (1) consists of a sufficient number of wells, (2) is installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer, and (3) represents the groundwater quality both upgradient of the 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. 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. The location of the compliance well network is presented on **Figure 2**; well construction details are listed in **Table 1**.



2.0 GROUNDWATER MONITORING ACTIVITIES

In accordance with 40 CFR §257.90(e), the following describes monitoring-related activities performed during the preceding year and discusses any change in status of the monitoring program. All groundwater sampling was performed in accordance with 40 CFR §257.93.

2.1 Monitoring Well Installation and Maintenance

The monitoring well network at the site remained unchanged from 2017 as no additional monitoring wells were installed in 2018. Similarly, no maintenance activities were required for the monitoring well network during 2018.

2.2 <u>Alternate Source Demonstrations</u>

A statistically significant increase (SSI) of total dissolved solids (TDS) in compliance wells GWC-6 and GWC-8 was reported in the 2017 Annual Groundwater Monitoring Report [Environmental Resources Management (ERM), 2018]. Pursuant to 40 CFR §257.94(e)(2), an Alternate Source Demonstration (ASD) was prepared. The ASD used multiple lines of evidence and concluded that the TDS SSIs reported for wells GWC-6 and GWC-8 are not associated with a release from the landfill, but instead associated with historical clay mining operations located upgradient of these wells. The completed ASD report is provided in **Appendix A**.

2.3 <u>Detection Monitoring</u>

With the completion of a successful ASD, the detection groundwater monitoring program continues at the site in accordance with CCR Rule regulations [40 CFR §257.94(e)(2)]. The sequence of detection monitoring events conducted at the site in 2018 is summarized in **Table 2**. Details of these events are discussed in Section 3.

Groundwater samples were collected from each compliance monitoring well shown on **Figure 2** and analyzed for Appendix III constituents in accordance with 40 CFR §257.94(a). The first detection monitoring event was conducted in March 2018, followed by a verification event for select monitoring wells in May 2018. The second detection monitoring event was completed in October 2018, with successive verification sampling events conducted in December 2018 and January 2019. 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 in 2018.

3.1 Groundwater Level Measurement

Prior to each sampling event, a synoptic round of depth to groundwater level measurements were recorded from the monitoring well network and used to calculate the corresponding groundwater elevation. The calculated groundwater elevations for the March and October 2018 sampling events are presented in **Table 3**. The groundwater elevations observed during the two monitoring events were averaged; the averaged values ranged from 691.06 feet above mean sea level (ft AMSL) in background assessment monitoring well GWA-1 to 613.62 ft AMSL in compliance well GWC-21. The seasonal variability of the groundwater elevations per well averaged 1.20 ft higher in March 2018.

The groundwater elevation data were used to prepare potentiometric surface maps for the March and October 2018 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 March and October 2018 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. The hydraulic gradient underneath Parcels A and B was calculated along a flow path line interpreted between the 690 ft AMSL potentiometric elevation line and well GWC-7. The gradient equals 0.022 feet per foot (ft/ft). The hydraulic gradient underneath Parcel E was calculated along a flow path line interpreted between well GWC-9 and the 625 ft AMSL potentiometric elevation line. The gradient equals 0.019 ft/ft. These hydraulic gradients represent the calculated average for the March and October 2018 events. The supporting calculations are presented in **Table 4**; the locations and potentiometric contour lines are shown on **Figures 3** and **4**.

4

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 [8.74 x 10^{-5} cm/sec = 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 0.2 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 averaged hydraulic gradient discussed above, the groundwater flow velocity underneath Parcels A and B was calculated to be 0.027 ft/day, or approximately 10 feet per year (ft/year). Similarly, the flow velocity underneath Parcel E was calculated to be 0.023 ft/day, or approximately 8 ft/year. 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) 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:

- ± 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. (Pace) in Norcross, Georgia following chain-of-custody protocol. The field sampling forms generated during the 2018 monitoring events are provided in **Appendix B**.

3.4 Laboratory Analyses

Laboratory analyses were performed by Pace. Pace is accredited by National Environmental Laboratory Accreditation Program (NELAP). Pace maintains a NELAP certification for the Appendix III parameters analyzed for this project. Boron and calcium were analyzed using USEPA Method 6020B; TDS was analyzed using Standard Method (SM) 2540C; and anions were analyzed by USEPA Method 300.0.

The groundwater analytical results from the March and October 2018 detection monitoring events and the corresponding May, December, and January verification events, are summarized in **Table 5**. The Pace laboratory reports associated with these results are provided in **Appendix B**. 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

6



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

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 and site-specific guidance documents (SCS, 2017; USEPA, 2011; USEPA, 2017). Where necessary, the data were qualified with supporting documentation and justifications. The associated data validation report is provided in **Appendix B** with the laboratory reports.



4.0 STATISTICAL ANALYSES

The following section presents a summary of the statistical approach applied to assess the 2018 groundwater analytical data for potential SSIs of Appendix III parameters reported in downgradient compliance wells relative to the available historical dataset. Statistical analysis of the 2018 groundwater data was performed pursuant to 40 CFR §257.93 and in accordance with the PE-certified statistical method.

4.1 <u>Statistical Methods</u>

The statistical approach used to evaluate the groundwater data was 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. An "initial exceedance" occurs when any data from the well exceeds the PL.

If data from a sampling event exhibited an initial exceedance of the PL, resampling may 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 all resamples exceed the PL, the initial exceedance is verified, and an SSI 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.

The following guidance is also applicable to the statistical analysis method:

- 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.

8

• Nonparametric PLs are used on data containing greater than 50% non-detects.

The SanitasTM groundwater statistical software was used to perform the statistical analyses. SanitasTM is a decision-support software package, that incorporates the statistical tests required of Subtitle C and D facilities by USEPA regulations and guidance as recommended in the USEPA document *Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance* (Unified Guidance) (USEPA, 2009).

4.2 <u>Statistical Analysis Results</u>

A summary of the SanitasTM outputs for the March and October 2018 sampling events, and the associated verification resampling events, is provided in **Appendix C**. **Table C-1** of Appendix C compares the 2018 groundwater quality data to relevant PLs with the SSI values shaded in grey.

Based on the statistical results presented in Appendix C, PL exceedances were identified for TDS in GWC-6 and GWC-8 and chloride in GWC-8. The source for elevated TDS concentrations was previously addressed with the April 2018 ASD (**Appendix A**). As such GWC-6 and GWC-8 were not resampled.

Verification resampling for chloride in GWC-8 was conducted in December 2018 and January 2019 and confirmed the chloride SSI reported for the October 2018 data set. An ASD was prepared for the chloride SSI. The SSI is associated with historical clay mining operations located upgradient of these wells and not associated with a release from the landfill. The ASD is provided in **Appendix A**.

9



5.0 MONITORING PROGRAM STATUS

Pursuant to 40 CFR §257.94(e)(2) and the preparation of the successful ASDs discussed in Sections 2.2 and 4.2, the site remains in detection monitoring in accordance with 40 CFR §257.94.



6.0 CONCLUSIONS AND FUTURE ACTIONS

Semiannual detection monitoring events were conducted in March and October 2018 at Plant Hammond, Huffaker Road Landfill, pursuant to the CCR Rule 40 CFR §257.94. Seventeen monitoring wells, consisting of five upgradient wells and 12 downgradient wells, were sampled for the Appendix III parameters as stipulated by 40 CFR §257.93. Data from the monitoring wells were statistically evaluated in accordance with the PE-certified statistical method. ASDs were prepared for SSIs observed in GWC-6 and GWC-8, and the site remains in detection monitoring.

The next semiannual detection monitoring event is planned for March 2019.

7.0 **REFERENCES**

- Cressler, C.W., 1970. *Geology and Ground-water Resources of Floyd and Polk Counties, Georgia*. Atlanta: Geological Survey of Georgia. 1970.
- Environmental Resources Management (ERM), 2017. Field Sampling Plan. October 2017.
- ERM, 2018. 2017 Annual Groundwater Monitoring and Corrective Action Report Plant Hammond Huffaker Road Landfill. Atlanta, Georgia. January 2018.
- Freeze, R. Allan & Cherry, John A. (1979). *Groundwater*. Englewood Cliffs, Prentice-Hall, Inc. Print.
- SanitasTM: Groundwater Statistical Software, v. 9.6.05 (2018). Sanitas Technologies©, 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.
- SCS, 2017. Standard Operating Procedure for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft. November 2017.
- 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.

12

TABLES

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

Well ID	Hydraulic Location	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Top of Casing Elevation (ft AMSL)	Top of Screen Elevation (ft AMSL)	Bottom of Screen Elevation (ft AMSL)	Well Depth (ft bgs) ⁽²⁾	Screen Interval Length
GWA-1	Upgradient	9/11/2001	1565643.23	1952068.06	702.05	672.52	662.52	35.99	10
GWA-2	Upgradient	2/5/2007	1565589.74	1952641.00	681.46	665.84	655.84	23.26	10
GWA-3	Upgradient	2/6/2007	1565519.19	1953199.71	659.25	648.10	638.10	18.20	10
GWA-4	Upgradient	2/6/2007	1565518.65	1953686.93	656.87	645.66	635.66	18.44	10
GWA-11	Upgradient	7/21/2006	1564945.85	1952008.14	682.48	656.57	646.57	33.11	10
GWC-5	Downgradient	2/7/2007	1565158.40	1953566.09	649.46	638.22	628.22	18.43	10
GWC-6	Downgradient	7/20/2006	1564396.99	1953919.43	656.37	623.77	613.77	40.09	10
GWC-7	Downgradient	7/19/2006	1564078.74	1953595.62	657.05	635.23	625.23	28.99	10
GWC-8	Downgradient	7/18/2006	1564000.11	1953095.59	656.63	639.53	629.53	24.45	10
GWC-9	Downgradient	7/18/2006	1563875.99	1952393.22	659.41	617.36	607.36	49.60	10
GWC-10	Downgradient	7/20/2006	1564307.60	1951975.60	667.52	643.53	633.53	30.48	10
GWC-18	Downgradient	7/12/2006	1563319.48	1953391.01	641.30	594.65	584.65	54.16	10
GWC-19	Downgradient	7/11/2006	1562842.42	1952979.50	642.93	595.72	585.72	54.76	10
GWC-20	Downgradient	7/17/2006	1562472.09	1952332.09	625.65	601.59	591.59	31.51	10
GWC-21	Downgradient	7/12/2006	1562098.80	1951612.93	618.36	610.43	600.43	13.91	10
GWC-22	Downgradient	7/13/2006	1562778.11	1951618.87	624.92	593.17	583.17	38.73	10
GWC-23	Downgradient	7/19/2006	1563557.96	1951605.45	654.87	615.15	605.15	47.01	10

Notes:

ft = feet

AMSL = above mean sea level

bgs = below ground surface

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

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

Table 2Groundwater Sampling Event Summary for 2018Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

Well ID	Hydraulic Location	Mar 14-16, 2018	May 15-16, 2018	Oct 3-5, 2018	Dec 11, 2018	Jan 11, 2019	Status of Monitoring Well
Purpose of S	Sampling Event:	Detection	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	V01		Detection
GWC-7	Downgradient	D01		D02			Detection
GWC-8	Downgradient	D01	V01	D02	V01	V02	Detection
GWC-9	Downgradient	D01		D02	V01		Detection
GWC-10	Downgradient	D01	V01	D02	V01		Detection
GWC-18	Downgradient	D01	V01	D02			Detection
GWC-19	Downgradient	D01		D02			Detection
GWC-20	Downgradient	D01	V01	D02	V01		Detection
GWC-21	Downgradient	D01	V01	D02			Detection
GWC-22	Downgradient	D01		D02			Detection
GWC-23	Downgradient	D01		D02			Detection

Notes:

DXX = Detection monitoring event number

VXX = Verification monitoring event number for the given detection monitoring event.

-- = Not sampled

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

	Top of Cosing	Mar 1	4, 2018	Oct 3, 2018		
Well ID	Elevation (ft AMSL)	Depth to Water (ft)	Groundwater Elevations (ft AMSL)	Depth to Water (ft)	Groundwater Elevations (ft AMSL)	
GWA-1	702.05	10.59	691.46	11.39	690.66	
GWA-2	681.46	6.05	675.41	6.11	675.35	
GWA-3	659.25	4.62	654.63	5.02	654.23	
GWA-4	656.87	8.65	648.22	10.48	646.39	
GWA-11	682.48	15.67	666.81	15.79	666.69	
GWC-5	649.46	4.55	644.91	5.26	644.20	
GWC-6	656.37	14.78	641.59	15.65	640.72	
GWC-7	657.05	13.80	643.25	14.92	642.13	
GWC-8	656.63	10.45	646.18	12.27	644.36	
GWC-9	659.41	12.75	646.66	14.51	644.90	
GWC-10	667.52	12.60	654.92	14.17	653.35	
GWC-18	641.30	12.42	628.88	13.36	627.94	
GWC-19	642.93	18.16	624.77	19.80	623.13	
GWC-20	625.65	3.01	622.64	4.25	621.40	
GWC-21	618.36	4.11	614.25	5.38	612.98	
GWC-22	624.92	1.18	623.74	3.12	621.80	
GWC-23	654.87	7.75	647.12	10.08	644.79	

Notes:

ft = feet

ft AMSL = feet above mean sea level

Table 4Groundwater Flow Velocity Calculations - 2018Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

Measuring Points	Affiliated Landfill Parcels	$\mathbf{h}_{1}\left(\mathbf{ft} ight)$	h ₂ (ft)	Δh (ft)	Δl (ft)	Δh/Δl (ft/ft)
March 14, 2018 Groundwater						
690 PCL and GWC-7	A & B	690	643.25	46.75	2,164	0.022
GWC-9 and 625 PCL	Е	646.66	625	21.66	1,172	0.018
October 3, 2018 Groundwater						
690 PCL and GWC-7	A & B	690	642.13	47.87	2,186	0.022
GWC-9 and 625 PCL	Е	644.90	625	19.90	1,061	0.019

		Averaged for 2018				
Measuring Points Affiliated Landfill Parcel		K (ft/day)	n	Δh/Δl (ft/ft)	V (ft/day)	V (ft/year)
690 PCL and GWC-7	A & B	0.248	0.2	0.022	0.027	9.8
GWC-9 and 625 PCL	E	0.248	0.2	0.019	0.023	8.4

Notes:

PCL = potentiometric contour line

 h_1 and h_2 = groundwater elevation at designated measuring points

 Δl = distance between measuring points 1 and 2

ft = feet

 $\Delta h/\Delta l =$ hydraulic gradient [feet per foot (ft/ft)]

 K_h = horizontal hydraulic conductivity

n = effective porosity

V = groundwater flow velocity

ft/day = feet per day

ft/year = feet per year

Well ID:	GWA-1	GWA-1	GWA-2	GWA-2	GWA-3	GWA-3	GWA-4	GWA-4	GWA-11	GWA-11
Sample Date:	3/14/2018	10/4/2018	3/14/2018	10/4/2018	3/15/2018	10/4/2018	3/15/2018	10/4/2018	3/15/2018	10/4/2018
Parameter (1,2)	r ^(1,2)									
Boron	ND (0.019 J)	ND (0.021 J)	0.075	0.082	0.14	0.16	0.043	0.10	ND (0.037 J)	ND (0.035 J)
Calcium	ND	ND (15.9 J)	39.5	41.7	83.5	75.2	69.9	77.8	ND	ND (21.3 J)
Chloride	1.2	1.4	2.4	2.5	3.8	3.4	1.7	6.1	1.6	1.8
Fluoride	ND	ND (0.17 J)	ND	ND (0.25 J)	ND	ND (0.24 J)	0.4	ND (0.24 J)	ND	ND (0.15 J)
рН ⁽³⁾	6.66	6.92	6.76	6.62	6.88	6.62	7.11	6.72	6.48	6.66
Sulfate	5.1	5.2	13.9	17.4	119	117	167	209	12.2	15.6
TDS	99	112	204	233	448	472	381	490	115	135

Notes:

-- = Parameter was not analyzed

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

ND = Indicates the parameter was not detected above the MDL

TDS = total dissolved solids

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

(2) Boron and calcium were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, and TDS was analyzed by SM2540C.

(3) The pH value presented was recorded at the time of sample collection in the field.

Well ID:	GWC-5	GWC-5	GWC-6	GWC-6	GWC-6	GWC-6	GWC-7	GWC-7	GWC-7
Sample Date:	3/16/2018	10/4/2018	3/16/2018	5/16/2018	10/4/2018	12/11/2018	3/15/2018	5/16/2018	10/4/2018
Parameter (1,2)									
Boron	0.047	0.066	0.044	0.042	ND (0.038 J)		0.053		0.048
Calcium	78.1	73.0	66.9		65.5		43.4		26.1
Chloride	3.2	3.2	2.1		2.2		1.9		2
Fluoride	ND	ND (0.16 J)	ND		ND (0.17 J)		0.37		ND (0.19 J)
рН ⁽³⁾	6.72	6.52	6.8	7.07	6.93		6.05	5.88	5.92
Sulfate	77.4	90.3	93.6		137	110 J	118		167
TDS	390	385	317		371		254		287

Well ID:	GWC-8	GWC-8	GWC-8	GWC-8	GWC-8	GWC-9	GWC-9	GWC-9
Sample Date:	3/14/2018	5/16/2018	10/4/2018	12/11/2018	1/11/2019	3/15/2018	10/5/2018	12/11/2018
Parameter (1,2)			-		-			
Boron	ND (0.024 J)		ND (0.047 J)			ND (0.013 J)	ND (0.017 J)	
Calcium	58.8		264	64.3		35.3	37.8	
Chloride	2.1		2.3	2.3	2.8	1.3	1.6	
Fluoride	0.4	0.32	ND (0.28 J)			ND	ND (0.18 J)	
рН ⁽³⁾	7.28	7.3	7.22			6.66	6.41	
Sulfate	36.8		45.4			57.8	81.9	73.6 J
TDS	263		292			280	236	

Well ID:	GWC-10	GWC-10	GWC-10	GWC-10	GWC-18	GWC-18	GWC-18	GWC-19	GWC-19	GWC-19
Sample Date:	3/15/2018	5/15/2018	10/4/2018	12/11/2018	3/16/2018	5/16/2018	10/5/2018	3/15/2018	5/15/2018	10/4/2018
Parameter (1,2)	2)				· · · · ·					
Boron	ND (0.038 J)		ND (0.038 J)		0.12		0.15	0.17	-	0.17
Calcium	52.4	48.4	51.2	49.3	45.9	40	39.6	43.3		43.7
Chloride	2	1.4	2.1	1.9	1.5		1.5	1.9		2.0
Fluoride	ND		ND (0.16 J)		ND		ND (0.21 J)	ND		ND (0.21 J)
рН ⁽³⁾	7.08	7.41	7.26		7.51	7.54	7.57	7.54	7.44	7.44
Sulfate	33.9	29.1	29.5		11.7		10.6	14.8		15.9
TDS	216		222		199		235	213		231

Well ID:	GWC-20	GWC-20	GWC-20	GWC-20	GWC-21	GWC-21	GWC-21	GWC-22	GWC-22	GWC-22
Sample Date:	3/16/2018	5/15/2018	10/5/2018	12/11/2018	3/15/2018	5/15/2018	10/4/2018	3/15/2018	5/15/2018	10/4/2018
Parameter (1,2)			•						-	
Boron	ND		ND (0.017 J)		ND (0.025 J)		ND (0.029 J)	0.07		0.065
Calcium	53.4		52.7		62.8		48.6	46.8		50.4
Chloride	1.9		2.2	1.8	3.6	3.2	2.4	1.7		1.7
Fluoride	ND		ND (0.17 J)		ND		ND (0.15 J)	ND		ND (0.14 J)
рН ⁽³⁾	7.13	7.18	7.07	7.2	7.01	6.18	6.33	7.5	7.52	7.52
Sulfate	37.5	41	38.9	41.8 J	38		19.3	8.2		6.4
TDS	216		256		219		152	190		215

Table 5

Well ID:	GWC-23	GWC-23			
Sample Date:	3/15/2018	10/5/2018			
Parameter (1,2)					
Boron	0.051	ND (0.039 J)			
Calcium	39.8	39.3			
Chloride	1.6	1.6			
Fluoride	ND	ND (0.18 J)			
pH ⁽³⁾	7.05	6.97			
Sulfate	14	9.3			
TDS	169	210			

FIGURES









APPENDIX A

Prepared Alternate Source Demonstrations

Appendix A1: TDS ASD Appendix A2: Chloride ASD

APPENDIX A1 TDS ASD

Prepared for



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

ALTERNATE SOURCE DEMONSTRATION PLANT HAMMOND HUFFAKER ROAD LANDFILL

Prepared by



engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200 Kennesaw, Georgia 30144

Project Number GW6581

April 2018


ALTERNATE SOURCE DEMONSTRATION

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

April 13, 2018

His goldund

Herwig Goldemund, Ph.D. Senior Scientist

Whitney & Law

Whitney Law, P.E. Project Manager

Certification Statement

Alternate Source Demonstration Plant Hammond Huffaker Road Landfill Permit No. 057-022D (LI) April 13, 2018

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).





TABLE OF CONTENTS

1.	INTRODUCTION1		
	1.1	Purpose	. 1
	1.2	Site Setting and Operational History	. 2
	1.3	Groundwater Monitoring	. 3
	1.4	Basis of the Statistically Significantly Increase	. 3
2.	ALT	TERNATE SOURCE DEMONSTRATION	. 5
	2.1	Upgradient Conditions	. 5
	2.2	Onsite Historical Operations	. 7
3.0	CON	NCLUSIONS	. 8
4.0	REFERENCES 10		10

LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Site Layout & Monitoring Well Locations
Figure 3	Time Series Chart - TDS at Upgradient and Select Downgradient Wells
Figure 4	TDS Concentrations and Groundwater Levels at Select Wells

LIST OF APPENDICES

Appendix A October 2017 Potentiometric Surface Contour Map from 2017 Annual Report Appendix B Historical Aerial Photographs

i



LIST OF ACRONYMS

ASD	Alternate Source Demonstration
В	boron
Ca	calcium
CCR	Coal Combustion Residual
CFR	Code of Federal Regulations
cm/sec	centimeter per second
D&O	Design & Operation
EPA	United States Environmental Protection Agency
EPD	Georgia Environmental Protection Division
ERM	Environmental Resources Management
GPC	Georgia Power Company
HDPE	high-density polyethylene
SSI	statistically significant increase
P.E.	professional engineer
PL	prediction limit
SAR	Site Acceptability Report
SCS	Southern Company Services, Inc.
SO_4	sulfate
TDS	total dissolved solids

04/16/2018

ii

Geosyntec consultants

1. INTRODUCTION

1.1 <u>Purpose</u>

This document presents an alternate source demonstration (ASD) for the statistically significant increase (SSI) of total dissolved solids (TDS) detected in compliance wells GWC-6 and GWC-8 located at Georgia Power Company's (GPC's) Plant Hammond Huffaker Road Landfill (the landfill). The TDS SSIs were identified based on groundwater samples collected during the initial detection monitoring event, conducted in October 2017, and then subsequently confirmed with verification sampling events conducted in December 2017 and January 2018. This ASD has been prepared pursuant to regulations promulgated in Title 40 Code of Federal Regulations (CFR) Part 257 Subpart D [the Federal Coal Combustion Residuals (CCR) Rule], specifically 40 CFR 257.94(e)(2), which states that "the owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality."

Based on review of available site data, the TDS SSIs reported for wells GWC-6 and GWC-8 are not associated with a release from the landfill, but instead associated with historical clay mining operations (i.e., alternative source) located upgradient of these wells. This ASD provides the following information supporting this conclusion:

- Monitoring wells GWA-3 and GWA-4, located upgradient of both the lined landfill and compliance wells GWC-6 and GWC-8, exhibit higher concentrations of TDS, as well as other Appendix III parameters, compared to the downgradient compliance wells, suggesting an upgradient source other than the CCR unit. The probable source of the elevated TDS concentrations is the historical clay mining operation located immediately upgradient of wells GWA-3 and GWA-4. Surface water drains from the mining operations via a buried culvert beneath Huffaker Road, and discharges in close proximity to GWA-3 and GWA-4; and
- In addition to the apparent upgradient source to GWA-3 and GWA-4, historical clay mining operations also occurred at the subject site prior to landfill construction. The land disturbances appear to have influenced the TDS and other Appendix III parameter concentrations observed in wells installed within or

1

downgradient of historically disturbed areas. Wells installed within undisturbed areas (e.g., GWA-1, GWA-11, GWC-10) do not present similarly elevated concentrations compared to the wells installed within the historically disturbed areas.

1.2 Site Setting and Operational History

As summarized in the Site Acceptability Report (SAR) submitted to the Georgia Environmental Protection Division (EPD) by Southern Company Services, Inc., (SCS) on behalf of GPC, 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 active Cells A & B, which were permitted and constructed with a composite liner system consisting of a minimum 24-inch compacted clay layer with a maximum hydraulic conductivity of 1 x 10^{-7} centimeters per second (cm/sec) and a 60-mil high-density polyethylene (HDPE) geomembrane overlaying the clay, and active Cell E, which is located downgradient from Cells A & B and was permitted and constructed with a minimum 24-inch compacted clay liner with a maximum hydraulic conductivity of 1 x 10^{-6} cm/sec (GPC, 2016). The EPD approved Solid Waste Permit No. 057-022D (LI) in a letter dated May 26, 2006, and initiation of disposal operations at the landfill was approved in a letter dated April 23, 2008, with disposal into the permitted unit commencing on May 5, 2008. No CCRs were stored in the landfill prior to that date (ERM, 2018).

Under the Federal CCR Rule issued by the United States Environmental Protection Agency (EPA) in 2015, the landfill was determined to be a regulated CCR unit. SCS 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 (EPA, 2015).

1.3 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.

Pursuant to the Federal CCR Rule 40 CFR 257.91, the groundwater monitoring system was certified by a professional engineer (P.E.) in October 2017 that (i) consists of a sufficient number of wells to meet the performance standards of 40 CFR 257.91(a) and (ii) is installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer.

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. The eight rounds of baseline samples were analyzed for Appendix III and Appendix IV constituents, and the ninth round of samples was analyzed for Appendix III constituents according to 40 CFR 257.94(a). Two verification sampling events were conducted in December 2017 and January 2018 to confirm the TDS concentrations reported for wells GWC-6 and GWC-8 during the October 2017 detection monitoring event.

1.4 Basis of the Statistically Significantly Increase

As summarized in the 2017 Annual Groundwater Monitoring and Corrective Action *Report* (2017 Annual Report) (ERM, 2018), statistical analysis of Appendix III groundwater monitoring data was performed pursuant to 40 CFR 257.93. The statistical test used to evaluate the groundwater monitoring data was the intrawell prediction limit (PL) method combined with a 1-of-3 resample plan in accordance with the P.E.-certified statistical analysis plan prepared for the landfill's groundwater monitoring program.

Analytical data from the initial detection monitoring program event in October 2017 were statistically analyzed, and a SSI of TDS was identified for wells GWC-6 and GWC-8.



The initial concentrations were verified through subsequent resampling and analysis conducted in December 2017 and January 2018. The statistical analysis and comparison to PLs were included as Appendix B in the 2017 Annual Report (ERM, 2018).

2. ALTERNATE SOURCE DEMONSTRATION

Based on review of site information, the SSIs for TDS at compliance wells GWC-6 and GWC-8 are not related to a release from lined Cells A & B at the landfill, but associated with historical clay mining operations (i.e., alternative source) located upgradient of the wells. The following section presents information supporting this conclusion.

- Upgradient wells GWA-3 and GWA-4 have higher concentrations of TDS compared to the downgradient wells GWC-6 and GWC-8; this also holds true for a number of other Appendix III parameters, which suggests a source other than the CCR unit; and
- Historical clay mining operations occurred at the subject site prior to landfill construction. Based on comparison of groundwater quality data between wells installed upgradient verses downgradient of historically undisturbed areas, the data suggest historical operations have a lingering effect on the concentrations of Appendix III constituents reported in the wells installed downgradient of the historically disturbed areas. This is most likely due to increased dissolution of these constituents as water infiltrates through the vadose zone of the disturbed areas and migrate overtime into the downgradient wells.

2.1 Upgradient Conditions

Groundwater quality conditions within upgradient assessment wells GWA-3 and GWA-4 are characterized by higher TDS concentrations and greater variability among Appendix III parameters relative to both the three other upgradient assessment wells (i.e., GWA-1, GWA-2, and GWA-11) and the downgradient compliance wells. This suggests two distinct zones of upgradient groundwater, one area northeast of landfill Cells A & B (i.e., GWA-3 and GWA-4) affected by an upgradient historical mining operation, and a second area located northwest of the landfill cells (i.e., GWA-1, GWA-2, and GWA-11) and unaffected by historical clay mining operations. The degree of spatial and temporal variability observed for TDS concentrations in GWA-3 and GWA-4 relative to the other three assessment wells and GWC-6 and GWC-8 is presented on **Figure 3**; the data set includes sampling events conducted between March 2016 and January 2018.

Note that compliance wells GWC-6 and GWC-8 are located downgradient of Cells A & B, which were constructed with a composite liner system, but upgradient from Cell E. A

potentiometric surface map developed from water levels recorded during the October 2017 detection monitoring event, and submitted as part of the 2017 Annual Report, is included as **Appendix A**.

An explanation for the higher TDS 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 close proximity of these two wells. In contrast, the northwestern part of the upgradient area appears to be unaffected by mining operations to the north, and the wells representing this area were installed in locations that appear to have been relatively undisturbed during historical clay mining operations at the subject site itself prior to landfill construction. 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 a number of Appendix III parameters such as TDS, calcium (Ca), and sulfate (SO₄). There appears to be a positive correlation between groundwater levels and TDS concentrations in these wells. This relationship is depicted on **Figure 4** for the two upgradient wells GWA-3 and GWA-4 and the downgradient wells GWC-6 and GWC-8. TDS concentrations rise concurrent with rising water levels in these wells. This is likely due to increased dissolution of naturally-occurring constituents from disturbed surfaces as recharge from precipitation dissolves constituents as it 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 TDS data. The eight baseline sampling events conducted within one year may not have fully captured this variability at downgradient wells GWC-6 and GWC-8. The degree of variation in groundwater quality is observed in both upgradient and downgradient locations, though it is more pronounced in upgradient wells GWA-3 and GWA-4. The degree of variation of TDS in these two wells might subsequently be observed in downgradient locations, given an adequate amount of time for those solutes to migrate to the downgradient compliance wells.



2.2 <u>Onsite Historical Operations</u>

In addition to the upgradient source discussed in Section 2.1, the historical land disturbance activities still appear to show a lingering effect on groundwater conditions within the footprint of historical mining operations at the subject site prior to landfill construction. Similar to 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 elevated constituent concentrations relative to wells screened within undisturbed areas that have also not been affected by potential upgradient sources and operations (e.g., GWA-1, GWA-11, and GWC-10).

Comparing a number of Appendix III parameters between wells installed within the historically disturbed and undisturbed areas (both upgradient as well as downgradient) supports this conclusion. This can be observed in time series plots presented in the statistical analysis section of the 2017 Annual Report (ERM, 2018). These plots have been included in **Appendix C** of this ASD.

3.0 CONCLUSIONS

TDS concentrations were reported in excess of its associated PL in downgradient compliance wells GWC-6 and GWC-8 during the first groundwater detection monitoring program event conducted in October 2017. Two subsequent sampling events in December 2017 and January 2018 confirmed the elevated concentrations, which resulted in the identification of an SSI for TDS in wells GWC-6 and GWC-8. However, the TDS concentrations in these two wells were lower than in upgradient assessment wells GWA-3 and GWA-4. The following lines of evidence have been provided to demonstrate that the TDS SSIs reported for wells GWC-6 and GWC-8 are due to an alternative source (i.e., historical mining operations) and not due to a release of CCR leachate from the landfill.

- Upgradient Conditions:
 - Upgradient wells GWA-3 and GWA-4 have higher concentrations of TDS compared to the downgradient wells GWC-6 and GWC-8. The historical mining operation located upgradient of the landfill has been identified as the alternative source of TDS.
 - o The fluctuations in TDS concentrations, as reported in both upgradient and downgradient wells, suggest a degree of spatial and temporal variability throughout the initial baseline monitoring period. The full extent of the variation may not have been captured at wells GWC-6 and GWC-8 during the eight baseline monitoring events completed within one year. This is supported by the fact that fluctuations in groundwater levels appear to be positively correlated with TDS concentrations in wells installed within disturbed areas (both upgradient and downgradient); and
- Onsite Historical Operations:
 - In addition to the upgradient conditions due to the historical clay mining operations, 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 verses downgradient of historically undisturbed areas, the data suggest historical operations have a lingering effect on the concentrations of Appendix III constituents reported in the wells installed downgradient of the historically disturbed



areas. This is most likely due to increased dissolution of these constituents as water infiltrates through the vadose zone of the disturbed areas and migrate overtime into the downgradient wells.



4.0 **REFERENCES**

- EPA (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
- 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). Initial Written Closure Plan; 40 C.F.R. Part 257.102. Huffaker Road (Plant Hammond) Private Industrial Landfill (Huffaker Road Landfill). Georgia Power Company.
- 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.

FIGURES



Note: 1. Aerial Photograph Google Earth, Feb 2017.

Georgia Power Company Huffaker Road Landfill Rome, Floyd County, Georgia

Geosyntec▷ consultants

Figure

1

April 2018

Kennesaw, GA

2,600

Feet



Note: 1. Aerial Photograph Google Earth, February 2017.

125 250

500

Geosyntec[▷] consultants

Figu	ure
------	-----

2

Kennesaw, GA

April 2018



N:\GA Power\Plant Hammond GW Services\2018\GIS\mxd\Huffaker\ASD\GWC-6,8_TDS\Figure3_TimeTrends_TDS.mxd 3/26/2018 11:59:35 AM



N:\GA Power\Plant Hammond GW Services\2018\GIS\mxd\Huffaker\ASD\GWC-6,8_TDS\Figure5_TDS_and_WL_portrait.mxd 3/26/2018 12:46:11 PM

APPENDIX A

October 2017 Potentiometric Surface Contour Map from 2017 Annual Report



APPENDIX B

Historical Aerial Photographs



Note: 1. Aerial Photograph from Google Earth

N:\GA Power\Plant Hammond GW Services\2018\GIS\mxd\Huffaker\ASD\GWC-6,8_TDS\AppB_Historical_Aerial_Photos_rev1.mxd 3/26/2018 12:51:50 PM







APPENDIX C

Time Series from 2017 Annual Report

Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG Hollow symbols indicate censored values.



Constituent: Boron Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125





Constituent: Boron Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG Hollow symbols indicate censored values.



Constituent: Boron Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125



Constituent: Boron Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: Calcium Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125



Constituent: Calcium Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas™ v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: Calcium Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: Calcium Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125 Sanitas™ v.9.5.32 Sanitas software licensed to ERM. UG Hollow symbols indicate censored values.



Constituent: Chloride Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125



Constituent: Chloride Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG Hollow symbols indicate censored values.



Constituent: Chloride Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125



Constituent: Chloride Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125 Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG Hollow symbols indicate censored values.



Constituent: Fluoride Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125



Constituent: Fluoride Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG Hollow symbols indicate censored values.



Constituent: Fluoride Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: Fluoride Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: pH Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125



Constituent: pH Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas™ v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: pH Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125 Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: pH Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas™ v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: Sulfate Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125





Constituent: Sulfate Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas™ v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: Sulfate Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: Sulfate Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: Total Dissolved Solids Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125



Constituent: Total Dissolved Solids Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Sanitas™ v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: Total Dissolved Solids Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125 Sanitas[™] v.9.5.32 Sanitas software licensed to ERM. UG



Constituent: Total Dissolved Solids Analysis Run 1/25/2018 9:43 PM View: 1. Time Series - All Wells Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

APPENDIX A2 Chloride ASD

Prepared for



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

ALTERNATE SOURCE DEMONSTRATION - CHLORIDE

PLANT HAMMOND HUFFAKER ROAD LANDFILL

Prepared by



engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200 Kennesaw, Georgia 30144

Project Number GW6581B

January 2019



ALTERNATE SOURCE DEMONSTRATION

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

January 31, 2019

Hing Goldend

Herwig Goldemund, Ph.D. Senior Scientist

Whitney B Law-

Whitney Law, P.E. Project Manager

Certification Statement

Alternate Source Demonstration Plant Hammond Huffaker Road Landfill Permit No. 057-022D (LI) January 31, 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).



Geosyntec^D

TABLE OF CONTENTS

1.	INT	INTRODUCTION		
	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)	7	
3.	CO	NCLUSIONS	8	
4.	REF	FERENCES	10	

LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Well Location Map
Figure 3	Time Series Chart – Boron and Chloride at Upgradient Wells
	and GWC-8

LIST OF APPENDICES

Appendix A	Time Series from 2018 Annual Report
Appendix B	October 2018 Potentiometric Surface Contour Map from 2018
	Annual Report
Appendix C	Historical Aerial Photographs

LIST OF ACRONYMS

ASD	Alternate Source Demonstration
В	boron
CCR	Coal Combustion Residual
CFR	Code of Federal Regulations
Cl	chloride
cm/sec	centimeter per second
D&O	Design & Operation
EPD	Environmental Protection Division
ERM	Environmental Resources Management
GPC	Georgia Power Company
HDPE	high-density polyethylene
SSI	statistically significant increase
PE	professional engineer
PL	prediction limit
SCS	Southern Company Services, Inc.
USEPA	United States Environmental Protection Agency

Geosyntec Consultants

1. INTRODUCTION

1.1 <u>Purpose</u>

This document presents an alternate source demonstration (ASD) for the statistically significant increase (SSI) of chloride (Cl) detected in compliance well GWC-8 located at Georgia Power Company's (GPC's) Plant Hammond Huffaker Road Landfill (the landfill). The Cl SSI was identified based on statistical evaluation of the groundwater quality data set obtained from the October 2018 sampling event. The SSI was subsequently confirmed with verification sampling events conducted in December 2018 and January 2019. This ASD has been prepared pursuant to regulations promulgated in Title 40 Code of Federal Regulations (CFR) Part 257 Subpart D [the Federal Coal Combustion Residuals (CCR) Rule], specifically 40 CFR §257.94(e)(2), which states that "the owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality."

1.2 <u>Summary of ASD</u>

Based on review of available site data, the Cl SSI reported for well GWC-8 is not associated with a release from the landfill but is instead associated with historical clay mining operations (i.e., the alternative source) located upgradient of the landfill and the landfill monitoring network. 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 lined landfill reported higher concentrations of Cl, as well as 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 Cl concentrations is the historical clay mining operation located immediately upgradient of wells GWA-3 and GWA-4. The clay mining operations have likely created conditions for increased dissolution of naturally-occurring constituents from disturbed surfaces. Precipitation dissolves constituents of the disturbed surfaces as it either permeates

through the vadose zone into groundwater or is conveyed via surface water runoff. Surface water drains from the mining operations via a buried culvert beneath Huffaker Road, and discharges in close proximity to GWA-3 and GWA-4; and

• Historical clay mining operations occurred at the subject site, and upgradient of it, prior to landfill construction. The groundwater quality data suggest these historical operations have influenced spatial and temporal fluctuations of Cl concentrations reported for samples collected from wells installed within or downgradient of historically disturbed areas. The natural variation of Cl concentrations within groundwater may not have been fully captured within the relatively short period of Cl 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.

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 active Parcels A, B, and E. Parcels A and B were permitted and constructed with a leachate collection system underlain by a composite liner system consisting of a minimum 24-inch compacted clay layer with a maximum hydraulic conductivity of 1×10^{-7} centimeters per second (cm/sec) and a 60-mil high-density polyethylene (HDPE) geomembrane overlaying the clay. Parcel E is located downgradient from Parcels A and B and was permitted and constructed with a minimum 24-inch compacted clay liner with a maximum hydraulic conductivity of 1×10^{-6} cm/sec (GPC, 2016). Georgia EPD approved Solid Waste Permit No. 057-022D (LI) in a letter dated May 26, 2006, and initiation of disposal operations commenced on May 5, 2008. No CCRs were stored in the landfill prior to May 2008 (ERM, 2018).

Under the Federal CCR Rule issued by the United States Environmental Protection Agency (USEPA) in 2015, the landfill was determined to be a regulated CCR unit. SCS

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 (USEPA, 2015).

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 chloride as a monitoring constituent, commenced in March 2016.

Pursuant to 40 CFR §257.91, the groundwater monitoring system was certified by a professional engineer (PE) in October 2017 that (i) consists of a sufficient number of wells to meet the performance standards of 40 CFR 257.91(a) and (ii) is installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer.

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. During 2018, groundwater samples were collected semi-annually pursuant to 40 CFR §257.94(b) and §257.94(e)(2) and analyzed for Appendix III parameters. The semi-annual sampling events were conducted in March 2018 and October 2018. Two verification sampling events were conducted in December 2018 and January 2019 to confirm the October 2018 Cl groundwater concentration reported in well GWC-8.



1.5 <u>Basis of the Statistically Significantly Increase</u>

Statistical analysis of Appendix III groundwater monitoring data was performed pursuant to 40 CFR §257.93. The statistical test used to evaluate the groundwater monitoring data was the intra-well prediction limit (PL) method combined with a 1-of-3 resample plan.

Statistical analysis of the October 2018 data identified an SSI of Cl for well GWC-8. The initial concentration of 2.3 milligrams per liter (mg/L) was verified through subsequent resampling and analysis conducted in December 2018 and January 2019. This concentration exceeded the PL of 2.1 mg/L for Cl in well GWC-8. The statistical analysis and comparison to PLs are discussed in further detail in the *2018 Annual Groundwater Monitoring and Corrective Action Report* (2018 Annual Report) (Geosyntec, 2019).

2. ALTERNATE SOURCE DEMONSTRATION

Based on review of site information, the SSI for Cl at compliance well GWC-8 is not related to a release from lined Parcels A and B at the landfill, but is associated with historical clay mining operations (i.e. an alternate source) located upgradient of the wells. The following section presents information supporting this conclusion.

- Upgradient wells GWA-3 and GWA-4 have higher concentrations of Cl compared to the downgradient well GWC-8; this also holds true for a number of other Appendix III parameters, which indicate a source other than the CCR unit; and
- Historical clay mining operations occurred at the subject site, and upgradient of it, prior to landfill construction. Based on comparison of groundwater quality data between wells installed upgradient versus downgradient of historically undisturbed areas, the data indicate historical operations have a lingering effect on the concentrations of Appendix III constituents reported in the wells installed downgradient of the historically disturbed areas (Geosyntec, 2018). 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 into the downgradient wells. The natural variation of Cl concentrations within groundwater may not have been fully captured within the relatively short period of Cl monitoring during baseline data collection at the site (i.e., March 2016 to March 2017).

2.1 Upgradient Conditions

Groundwater quality conditions within upgradient assessment wells GWA-3 and GWA-4 are characterized by higher Cl concentrations and greater variability among Appendix III parameters relative to both the three other upgradient assessment wells (i.e., GWA-1, GWA-2, and GWA-11) and downgradient compliance well GWC-8. This indicates two distinct zones of upgradient groundwater, one area northeast of landfill Parcels A and B (i.e., GWA-3 and GWA-4) affected by an upgradient source, and a second area located northwest of the landfill cells (i.e., GWA-1, GWA-2, and GWA-11) and unaffected by an upgradient source. This variability between these two zones can be seen on time series plots included as **Appendix A**

The degree of spatial and temporal variability detected for Cl concentrations in GWA-3 and GWA-4 relative to well GWC-8 is presented on **Figure 3**; the data set includes

5

sampling events conducted between March 2016 and January 2019 (where applicable). Other Appendix III parameters, including boron (B), sulfate (SO₄) and total dissolved solids (TDS), were included on this figure to illustrate these parameters' similar concentration trends relative to Cl. The low concentrations of Appendix III parameters in downgradient well GWC-8 relative to upgradient wells supports the conclusion the Cl source is not associated with the regulated landfill.

Note that compliance well GWC-8 is located downgradient of Parcels A and B, which were constructed with a composite liner system overlain by a leachate collection system, but upgradient from Parcel E. A potentiometric surface map developed from water levels recorded during the October 2018 detection monitoring event, and submitted as part of the 2018 Annual Report, is included as **Appendix B**.

An explanation for the higher Cl 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 close proximity of these two wells. In contrast, the northwestern part of the upgradient area appears to be unaffected by mining operations to the north, and the wells representing this area were installed in locations that appear to have been relatively undisturbed during historical clay mining operations at the subject site itself prior to landfill construction. Aerial photographs provided in **Appendix C** 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 a number of 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 Cl (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-8. 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 Cl in these two wells might subsequently be



observed in downgradient locations, 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. Similar to 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 a number of 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 2018 Annual Report (Geosyntec, 2019). These plots have been included in **Appendix A** of this ASD.

3. CONCLUSIONS

Chloride concentrations were reported in excess of its associated PL in downgradient compliance well GWC-8 during the second semi-annual 2018 groundwater detection monitoring event conducted in October 2018. Two subsequent verification sampling events conducted in December 2018 and January 2019 confirmed the PL exceedance, which resulted in the identification of an SSI for Cl in well GWC-8. However, the Cl concentrations in this well were lower than in upgradient wells GWA-3 and GWA-4. The following lines of evidence have been provided to demonstrate that the Cl SSI reported for well GWC-8 is not due to a release from the landfill, but rather (i) associated with historical clay mining operations (i.e. an alternate source) located upgradient of the wells and/or (ii) natural variation.

- Upgradient Conditions:
 - Upgradient wells GWA-3 and GWA-4 have higher concentrations of Cl compared to the downgradient well GWC-8. The historical mining operation located upgradient of the landfill is likely an alternative source of Cl (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 Cl 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

Geosyntec consultants

on the concentrations of Appendix III constituents reported in the wells installed 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.

4. **REFERENCES**

- 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). Initial Written Closure Plan; 40 C.F.R. Part 257.102. Huffaker Road (Plant Hammond) Private Industrial Landfill (Huffaker Road Landfill). Georgia Power Company.
- Geosyntec Consultants (2018). Alternate Source Demonstration, Plant Hammond Huffaker Road Landfill. April 2018.
- Geosyntec Consultants (2019). 2018 Annual Groundwater Monitoring and Corrective Action Report, Plant Hammond Huffaker Road Landfill. January 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



Note: 1. Aerial Photograph Google Earth, Feb 2017.

Georgia Power Company Huffaker Road Landfill Rome, Floyd County, Georgia



1

consult

Kennesaw, GA

Ν

2,600

Feet

January 2019



Approximate Landfill Boundary

Monitoring Well

Note: 1. Aerial Photograph Google Earth, February 2017.

N	Site La
Ĩ	C
50 500 Feet	Kennesaw

Georgia Power Company Huffaker Road Landfill Rome, Floyd County, Georgia

Geosyntec[>]

Figure

, GA

January 2019

2









Time Series

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants

Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants.





APPENDIX A

Time Series from 2018 Annual Report

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



Constituent: Boron Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill ${\rm Sanitas^{\rm nu}}$ v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.



Time Series

Constituent: Boron Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

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



Constituent: Boron Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.





Constituent: Boron Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.



Constituent: Calcium Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: Calcium Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: Calcium Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.





Constituent: Calcium Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.

Time Series



Constituent: Chloride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill



Constituent: Chloride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: Chloride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.





Constituent: Chloride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.

0.6 GWA-1 (bg) ٠ 0.48 GWA-11 (bg) GWA-2 (bg) 0.36 mg/L GWA-3 (bg) 0.24 • GWA-4 (bg) 0.12 Ω 3/22/16 3/27/17 10/4/18 9/23/16 9/28/17 4/1/18

Time Series

Constituent: Fluoride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas $^{\rm IN}$ v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.



Time Series

Constituent: Fluoride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

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



Constituent: Fluoride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.

Time Series



Constituent: Fluoride Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: pH Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill



Time Series

Constituent: pH Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: pH Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants.





Constituent: pH Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants.

400 GWA-1 (bg) ٠ 320 GWA-11 (bg) GWA-2 (bg) 240 mg/L GWA-3 (bg) 160 • GWA-4 (bg) 80 0 💺 3/22/16 9/23/16 3/27/17 9/28/17 4/1/18 10/4/18

Time Series

Constituent: Sulfate Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill



Constituent: Sulfate Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: Sulfate Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.

Time Series



Constituent: Sulfate Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill



Time Series



Constituent: Total Dissolved Solids Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill



Constituent: Total Dissolved Solids Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: Total Dissolved Solids Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants.





Constituent: Total Dissolved Solids Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

APPENDIX B

October 2018 Potentiometric Surface Contour Map from 2018 Annual Report



APPENDIX C

Historical Aerial Photographs



Legend

Monitoring Well

Area of Historical Mining Operations

Note: 1. Aerial Photograph from Google Earth









APPENDIX B Laboratory Analytical and Field Sampling Reports

Appendix B1: Laboratory Analytical Data Packages and Data Validation Reports

Appendix B2: Field Sampling Reports

APPENDIX B1 Laboratory Analytical Data Packages and Data Validation Reports

Laboratory Reports



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

March 23, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 262895

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 15, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc.





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 262895

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204

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



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262895

Lab ID	Sample ID	Matrix	Date Collected	Date Received		
262895001	GWA-1	Water	03/14/18 18:30	03/15/18 12:05		



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:262895

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
262895001	GWA-1	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA



ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262895

Sample: GWA-1	Lab ID:	262895001	Collecte	ed: 03/14/1	8 18:30	Received: 03/15/18 12:05 Matrix: Water			
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/19/18 09:50	03/19/18 19:55	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/19/18 09:50	03/19/18 19:55	7440-38-2	
Barium	0.039	mg/L	0.010	0.00078	1	03/19/18 09:50	03/19/18 19:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/19/18 09:50	03/19/18 19:55	7440-41-7	
Boron	0.019J	mg/L	0.040	0.0039	1	03/19/18 09:50	03/19/18 19:55	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/19/18 09:50	03/19/18 19:55	7440-43-9	
Calcium	ND	mg/L	25.0	0.69	50	03/19/18 09:50	03/19/18 20:00	7440-70-2	D3
Chromium	0.016	mg/L	0.010	0.0016	1	03/19/18 09:50	03/19/18 19:55	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/19/18 09:50	03/19/18 19:55	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/19/18 09:50	03/19/18 19:55	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/19/18 09:50	03/19/18 19:55	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/19/18 09:50	03/19/18 19:55	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/19/18 09:50	03/19/18 19:55	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/19/18 09:50	03/19/18 19:55	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/19/18 09:50	03/19/18 19:55	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/19/18 09:50	03/19/18 19:55	7440-62-2	
Zinc	0.0032J	mg/L	0.010	0.0021	1	03/19/18 09:50	03/19/18 19:55	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Me	thod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/17/18 14:40	03/18/18 14:28	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	99.0	mg/L	25.0	25.0	1		03/20/18 17:42		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.2	mg/L	0.25	0.024	1		03/17/18 07:10	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/17/18 07:10	16984-48-8	
Sulfate	5.1	mg/L	1.0	0.017	1		03/17/18 07:10	14808-79-8	



QUALITY CONTROL DATA

Project:	Plant Hamr	nond - Huffa	ker Road										
Pace Project No.:	262895												
QC Batch: 2725			Analys	Analysis Method:		EPA 7470A							
QC Batch Method:	EPA 7470	A		Analys	Analysis Description:		7470 Mercury	/					
Associated Lab Sam	nples: 262	2895001											
METHOD BLANK: 14428 Matrix: Water													
Associated Lab Sam	nples: 262	2895001											
				Blank		Reporting							
Param	neter		Units	Result	t 	Limit	MDL		Analyzed	Qua	Jualifiers		
Mercury			mg/L		ND	0.00020	0.00	0036 03	8/18/18 14:0	09			
LABORATORY CON	NTROL SAM	PLE: 144	29										
				Spike	LC	CS	LCS	% Re	ec				
Param	neter		Units	Conc.	Re	sult	% Rec	Limit	ts C	Qualifiers	_		
Mercury			mg/L	.0025		0.0024	94	8	80-120				
MATRIX SPIKE & M	IATRIX SPIK		TE: 14475			14476							
				MS	MSD								
_			262928001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury		mg/L	ND	.0025	.002	5 0.0020	0.0020	81	8	1 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 - Huffaker Road

Pace Project No.: 262895

Pace Project No.: 262695								
QC Batch: 2745		Analysis Met	hod: EF	PA 6020B				
QC Batch Method: EPA 3005A		Analysis Des	cription: 60	6020B MET				
Associated Lab Samples: 262895001								
METHOD BLANK: 14542		Matrix:	Water					
Associated Lab Samples: 262895001								
		Blank	Reporting					
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers		
Antimony	mg/L	ND	0.0030	0.00078	03/19/18 18:40			
Arsenic	mg/L	ND	0.0050	0.00057	03/19/18 18:40			
Barium	mg/L	ND	0.010	0.00078	03/19/18 18:40			
Beryllium	mg/L	ND	0.0030	0.000050	03/19/18 18:40			
Boron	mg/L	ND	0.040	0.0039	03/19/18 18:40			
Cadmium	mg/L	ND	0.0010	0.000093	03/19/18 18:40			
Calcium	mg/L	ND	0.50	0.014	03/19/18 18:40			
Chromium	mg/L	ND	0.010	0.0016	03/19/18 18:40			
Cobalt	mg/L	ND	0.010	0.00052	03/19/18 18:40			
Copper	mg/L	ND	0.0050	0.0013	03/19/18 18:40			
Lead	mg/L	ND	0.0050	0.00027	03/19/18 18:40			
Nickel	mg/L	ND	0.0050	0.00095	03/19/18 18:40			
Selenium	mg/L	ND	0.010	0.0014	03/19/18 18:40			
Silver	mg/L	ND	0.0050	0.00095	03/19/18 18:40			
Thallium	mg/L	ND	0.0010	0.00014	03/19/18 18:40			
Vanadium	mg/L	ND	0.010	0.0019	03/19/18 18:40			
Zinc	ma/L	ND	0.010	0.0021	03/19/18 18:40			

LABORATORY CONTROL SAMPLE: 14543

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ma/L		0.11	108	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	101	80-120	
Beryllium	mg/L	.1	0.11	111	80-120	
Boron	mg/L	1	1.1	112	80-120	
Cadmium	mg/L	.1	0.11	108	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Chromium	mg/L	.1	0.11	109	80-120	
Cobalt	mg/L	.1	0.11	106	80-120	
Copper	mg/L	.1	0.10	104	80-120	
Lead	mg/L	.1	0.10	103	80-120	
Nickel	mg/L	.1	0.11	108	80-120	
Selenium	mg/L	.1	0.10	104	80-120	
Silver	mg/L	.1	0.10	100	80-120	
Thallium	mg/L	.1	0.10	102	80-120	
Vanadium	mg/L	.1	0.11	108	80-120	
Zinc	mg/L	.1	0.11	112	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 - Huffaker Road

Pace Project No.: 262895

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 14544 14545												
			MS	MSD								
		262928001	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	.1	.1	0.11	0.11	106	108	75-125	2	20	
Arsenic	mg/L	0.0014J	.1	.1	0.11	0.11	110	110	75-125	0	20	
Barium	mg/L	ND	.1	.1	0.13	0.13	106	109	75-125	2	20	
Beryllium	mg/L	ND	.1	.1	0.087	0.087	85	84	75-125	1	20	
Boron	mg/L	0.32	1	1	1.2	1.2	87	89	75-125	2	20	
Cadmium	mg/L	ND	.1	.1	0.15	0.14	109	104	75-125	4	20	
Calcium	mg/L	ND	1	1	248	246	1460	1260	75-125	1	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.11	111	110	75-125	1	20	
Cobalt	mg/L	ND	.1	.1	1.5	1.5	240	255	75-125	1	20	M1
Copper	mg/L	0.010	.1	.1	0.11	0.11	99	99	75-125	0	20	
Lead	mg/L	ND	.1	.1	0.097	0.095	96	95	75-125	1	20	
Nickel	mg/L	0.53	.1	.1	0.66	0.66	124	128	75-125	1	20	M1
Selenium	mg/L	ND	.1	.1	0.12	0.12	118	116	75-125	2	20	
Silver	mg/L	ND	.1	.1	0.088	0.088	88	88	75-125	1	20	
Thallium	mg/L	ND	.1	.1	0.098	0.098	98	98	75-125	0	20	
Vanadium	mg/L	ND	.1	.1	0.12	0.11	116	112	75-125	3	20	
Zinc	mg/L	0.72	.1	.1	0.84	0.86	124	145	75-125	3	20	M1

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

REPORT OF LABORATORY ANALYSIS

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



Project:	Plant Hammond -	Huffaker Road						
Pace Project No.:	262895							
QC Batch:	402761		Analysis M	Method:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis [Description:	2540C Total [Dissolved Solids		
Associated Lab San	nples: 26289500	1						
METHOD BLANK:	2234065		Mati	rix: Water				
Associated Lab San	nples: 26289500	1						
Paran	neter	Units	Blank Result	Reporting Limit) MDL	Analyz	ed Qualifiers	
Total Dissolved Soli	ds	mg/L	N	ID 2	5.0	25.0 03/20/18	17:42	
LABORATORY COM	NTROL SAMPLE:	2234066						
Paran	neter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
Total Dissolved Solid	ds	mg/L	250	226	90	90-110		
SAMPLE DUPLICA	TE: 2234067							
			9237699300	2 Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Solid	ds	mg/L	35	51 :	347	1	5	
SAMPLE DUPLICA	TE: 2234068							
_			262896003	Dup	_	Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Solie	ds	mg/L	26	63 2	210	22	5 D6	

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 - Huffaker Road

Pace Pro

ject No.:	262895

QC Batch: 2695			Analys	is Method	: E	PA 300.0						
QC Batch Method: EPA 3	00.0		Analys	is Descrip	tion: 3	00.0 IC Anio	ns					
Associated Lab Samples:	262895001											
METHOD BLANK: 14190			N	latrix: Wa	ter							
Associated Lab Samples:	262895001											
			Blank	R	eporting							
Parameter		Units	Result	t	Limit	MDL		Analyzed	Qua	alifiers		
Chloride		mg/L		ND	0.25	0	.024 0)3/17/18 02:27	,			
Fluoride		mg/L		ND	0.30	0	.029 0)3/17/18 02:27	,			
Sulfate		mg/L		ND	1.0	0 0	.017 ()3/17/18 02:27				
LABORATORY CONTROL S	AMPLE: 141	91 Units	Spike	LCS	6 ult	LCS % Rec	% F	Rec	alifiers			
Chlorido					10.4	101						
Elucrido		mg/L	10		10.4	104		90-110				
Sulfate		mg/L	10		10.6	106		90-110				
MATRIX SPIKE & MATRIX S	PIKE DUPLICA	TE: 14192	MS	MSD	14193							
		262779001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	: % Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.1	10	10	11.3	11.3	1(02 102	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.3	10.2	10	03 102	90-110	0	15	
Sulfate	mg/L	ND	10	10	10.3	10.4	ę	99 100	90-110	0	15	

MATRIX SPIKE SAMPLE:	14194						
		262779002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	3.2	10	12.9	97	90-110	
Fluoride	mg/L	ND	10	10.3	103	90-110	
Sulfate	mg/L	8.2	10	17.5	93	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 - Huffaker Road

Pace Project No.: 262895

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.

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

- D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:Plant Hammond - Huffaker RoadPace Project No.:262895

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
262895001	GWA-1	EPA 3005A	2745	EPA 6020B	2801
262895001	GWA-1	EPA 7470A	2725	EPA 7470A	2735
262895001	GWA-1	SM 2540C	402761		
262895001	GWA-1	EPA 300.0	2695		

Parce Analytical

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

Панин Геду Карантинан Карантинан Карантинан Карантинан Соврему Мите Соврему Мите Соврему Мите Соврему Мите Соврему Мите Карантин Санана Разо Роцоно Карантинан Карантинан Карантинан Карантинан Панин Санана Разо Роцоно Матан Карантинан Карантинан Карантинан Панин Санана Совреми Санана Совреми Санана Карантинан Совение Совение Панин Санана Совреми Санана Совреми Санана Совение Совение Совение Панин Санана	Normality Residual Chlorine (YMN) Normality Company Line Normality Contextor	. A Edient tuformation:		Section B Required Project Information:	Section C Invoice Information: Associate	Page: { Of
Дабиевся Расо Поснов	Address: Address: Address: 10346600 Pace Outlin: Pace Outlin: Regulater Road Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Outlin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printin: Pace Printi: Pace Print:	Try Georgia Power - Coal Combustion Residuals Report 10: Joju x 2480 Manuer Road	Report Io: Joju Copy To: Geo	Abraham / Lauren Petty syntec	Auterwon: SCSIIIVOICES@SOULINETIDO.COTII Company Name:	
Display Coll	Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение Палании и проведение	Atlanta, GA 30339			Address:	a the second state of Agency a second to the second
Pare Pare <th< td=""><td>Pace Profile # State Collection State State<th>iabraham@southernco.com Prurchase Urder #: /ana/scs.773a IFax Project Name: Plax</th><td>Project Name: Plar</td><td>SCS10348606 1t Hammond - Huffaker Road</td><td>race cuore. Pace Projed Marager: betsy modaniel@pacelabs.com, 222</td><td>a des selectes State / Locadon / Africa & Arra</td></td></th<>	Pace Profile # State Collection State State <th>iabraham@southernco.com Prurchase Urder #: /ana/scs.773a IFax Project Name: Plax</th> <td>Project Name: Plar</td> <td>SCS10348606 1t Hammond - Huffaker Road</td> <td>race cuore. Pace Projed Marager: betsy modaniel@pacelabs.com, 222</td> <td>a des selectes State / Locadon / Africa & Arra</td>	iabraham@southernco.com Prurchase Urder #: /ana/scs.773a IFax Project Name: Plax	Project Name: Plar	SCS10348606 1t Hammond - Huffaker Road	race cuore. Pace Projed Marager: betsy modaniel@pacelabs.com, 222	a des selectes State / Locadon / Africa & Arra
Зай ни Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонстание Сонст	Сонстануе Сонстанов <	ted Dus Date: STANDAKO TAT Project #:	Project #:		Pace Profile #: 328.3	GA
Общи Зами на солородина солороди солородина солородина солородина солородина солородина со	Сопесити и и и и и и и и и и и и и и и и и и				- 1.4 Million Requested Analysis Fittered	
Зами на солоние с соличиение с соличие соличие с соличие	Заличности Заличности Заличности </td <th>RATTER RATTER RATTER</th> <td>60MP) 8 to (eff) 6</td> <td>COLLECTED</td> <td>₹ Preservatives</td> <td></td>	RATTER RATTER RATTER	60MP) 8 to (eff) 6	COLLECTED	₹ Preservatives	
Image: The correct time is $\vec{u} \in \vec{b}$ Image: Section is $\vec{c} \in \vec{b}$ Image: Section is $\vec{c} \in \vec{c}$ Image: Section is $\vec{c} = \vec{c} = \vec{c}$ Image: Section is $\vec{c} = \vec{c}$ Image: Section is $\vec{c} = \vec{c}$ Image: Section is $\vec{c} = \vec{c} = \vec{c}$ Image: Section is $\vec{c} =$	The DATE TIME $\overrightarrow{G} \overrightarrow{E} \overrightarrow{E} \overrightarrow{E} \overrightarrow{E} \overrightarrow{E} \overrightarrow{E} \overrightarrow{E} E$	Sample tarmet the unique frame of the original sector per local sector per	· 16 179년 (GeGRAB Cer IX CODE (see velid code IX CODE (see velid code	START EN	LE TEMP AT COLLECTIO SONTAINERS Defred by 2540C rde,Fluoride,Suitate rde,Fluoride,Suitate	(VIV) enitoino (VIV)
$\frac{1}{10} 16.3c \frac{3}{2} \frac{3}{2} \frac{1}{2} \frac{1}{$	1/18 18:36 1/2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	24 B	ATAM 91AA	ATE TIME DATE	<u> </u>	
		15 2 6 WAT 6 WA-1 11 11 10 311	WTG 3/	1/18 18:30 \$14/16 1	30 13 2 1 1 1 1 1 X X X 3 2	2
					and a second sec	
				451 -		262895
ACT 1 262895	AND TO THE PART OF			L.L		
			7			
		Internet and a second and a second and a second	ICHANONEA	NOLVICEN I	DIE THE CONTRACTION OF	
		Trif 1/	Try 1/		14/18 20:00 1 Mouli a M/malus 03/14/18 < 20:02	20:02
AST <td>ALT TO BE 202395 ALT TO BE 262895 ALT TO BE 262895</td> <th>w olian</th> <td>wolia m</td> <td>ting cing cin</td> <td>3/14/18 21:10 297 Law 3/14/18</td> <td>21:10</td>	ALT TO BE 202395 ALT TO BE 262895 ALT TO BE 262895	w olian	wolia m	ting cing cin	3/14/18 21:10 297 Law 3/14/18	21:10
Ast Field Model Second Ast Field Model Model Second Ast Field Model Model Second Model Second Second Second Second	Ast <th>1 million</th> <td>J. W. K.</td> <td></td> <td>4/5/18 10:43 M : 40 Abolivieran/ Pare 3/15/13</td> <td>i 0 43</td>	1 million	J. W. K.		4/5/18 10:43 M : 40 Abolivieran/ Pare 3/15/13	i 0 43
Art F MO#:262895 Art Art Art Art Art Art Art Art Art Art	AST T T BAN T AST T T BAN T AST T T T T T T T T T T T T T T T T T T				MARTIN MARTIN	A & A h. e soer
AC AC<	Art Art Art MO#:262895 Art MO#:262895 MO#:262895 Art MO#:262895 Scass Art MO#:26181 Scass Art Mo Mo			SAMPLER NAME A		
ALT FL PL PL ALT FL PL WO#:262895 ALT FL PL PL ALT FL PL <	Art Free Mail Ecosos Art Free Mail Mail Lot 262895 Art Free Mail Lot 262895 Lot Art Free Mail Lot 262895 Lot L			PRINT Name	SAMPLER: 35	1) 2000 2000 2000 2000 2000 2000 2000 20
AST AST <td>Act Act Act<th></th><td></td><td>SIGNATURE O</td><td>SAMPLERC DATESIGNAT:</td><td>(7/1 500 (7/1 (7/1 (7/1 (7/1 (7/1 (7/1 (7/1 (7/1</td></td>	Act Act <th></th> <td></td> <td>SIGNATURE O</td> <td>SAMPLERC DATESIGNAT:</td> <td>(7/1 500 (7/1 (7/1 (7/1 (7/1 (7/1 (7/1 (7/1 (7/1</td>			SIGNATURE O	SAMPLERC DATESIGNAT:	(7/1 500 (7/1 (7/1 (7/1 (7/1 (7/1 (7/1 (7/1 (7/1
AST TCRN WOH::262895 AST MOH::262895 AST MOH::27895 AST MOH::2795 AST MOH::2795 AST	Art Free RN Moth::262895 Art Free RN Woth::262895 Art Free RN Moth::262895 Art Free RN Moth::262895 Art Free RN Moth::262895 Art Free RN Moth::262895 Billillin Billin Billin Billin Art Free RN Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin Billin <			ſ		

Sar	npie C	ond	lition	Upon Receipt		المنتعر -
Those Applied	6		Da	1.702	Droigot #	
Client Name	: 01	A	10	wel		
	. 🗖 -			Tomas Other	WO#:262895	
	nt ⊡C	omme	ercial		PM: BM Due Date: 03	/22/18
Custody Seal on Cooler/Box Present:		n	Seals	intact: Ves	CLIENT: GAPower-CCR	
	Rees		1000	C Other		
	Bags				Samples on ice, cooling process has begun	
Thermometer Used	type o	rice:		is Frozen: Yes No	Date and Initials of person examining	7
Cooler Temperature	Βισιοί	lical	19996	Comments:	contents: (7/15/18/19)	
Chain of Custody Present:				1.		
Chain of Custody Filled Out:	, El Yes			2.		
Chain of Custedy Relinquished:	Lives	□No		3.		
Sampler Name & Signature on COC:	ETYes			4.		
Samples Arrived within Hold Time:	.ETTes	□No		5.		
Short Hold Time Analysis (<72hr):	□Yes		⊡n/a	6.		
Rush Turn Around Time Requested:	⊡Yes			7.		
Sufficient Volume:	-UYes			8.		
Correct Containers Used:	.ElYes			9.		
-Pace Containers Used:	" Æ Yes		⊡n/A			
Containers Intact:	-TYes		□n/A	10.	· ·	-
Filtered volume received for Dissolved tests	□Yes			11.		
Sample Labels match COC:	Yes	2No	⊡n/A	12.		
-Includes date/time/ID/Analysis Matrix:	u	<u> </u>			•	
All containers needing preservation have been checked.			⊡n/A	13.		
All containers needing preservation are found to be in	- Tes		□n/A			
compliance with EPA recommendation.	_			Initial when	Lot # of added	
exceptions: VOA, caliform, TOC, O&G, WI-DRO (water)	⊡Yes ————————————————————————————————————	Tio		completed	preservative	
Samples checked for dechlorination:	□Yas	□No	ENIA	14.		_
Headspace in VOA Vials (>6mm):	□Y e s	⊡No	2N/A	15		-
Trip Blank Present:	CYes	⊡No	2MA	16.		
Trip Blank Custody Seals Present	□Yes		L MIA		•	
Pace Trip Blank Lot # (if purchased):						
Client Notification/ Resolution:					Field Data Required? Y / N	
Person Contacted:			_Oate/	Time.		
Comments/ Resolution:						-
						_
						- · . -
						-
				MALE I		-
· · ·						
Project Manager Review:					Date:	
•		I				Γ

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

March 23, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 262896

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 15, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc.





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 262896

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204

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



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262896

Lab ID	Sample ID	Matrix	Date Collected	Date Received
262896001	GWA-2	Water	03/14/18 17:10	03/15/18 12:05
262896002	FD-01	Water	03/14/18 00:00	03/15/18 12:05
262896003	GWC-8	Water	03/14/18 19:35	03/15/18 12:05



SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262896

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
262896001	GWA-2	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262896002	FD-01	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262896003	GWC-8	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262896

Sample: GWA-2	Lab ID:	262896001	Collecte	ed: 03/14/1	8 17:10	Received: 03/	/15/18 12:05 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/19/18 09:50	03/19/18 20:06	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/19/18 09:50	03/19/18 20:06	7440-38-2	
Barium	0.17	mg/L	0.010	0.00078	1	03/19/18 09:50	03/19/18 20:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/19/18 09:50	03/19/18 20:06	7440-41-7	
Boron	0.075	mg/L	0.040	0.0039	1	03/19/18 09:50	03/19/18 20:06	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/19/18 09:50	03/19/18 20:06	7440-43-9	
Calcium	39.5	mg/L	25.0	0.69	50	03/19/18 09:50	03/19/18 20:12	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/19/18 09:50	03/19/18 20:06	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/19/18 09:50	03/19/18 20:06	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/19/18 09:50	03/19/18 20:06	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/19/18 09:50	03/19/18 20:06	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/19/18 09:50	03/19/18 20:06	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/19/18 09:50	03/19/18 20:06	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/19/18 09:50	03/19/18 20:06	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/19/18 09:50	03/19/18 20:06	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/19/18 09:50	03/19/18 20:06	7440-62-2	
Zinc	0.0023J	mg/L	0.010	0.0021	1	03/19/18 09:50	03/19/18 20:06	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Me	thod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/17/18 14:40	03/18/18 14:31	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	204	mg/L	25.0	25.0	1		03/20/18 17:42		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.4	mg/L	0.25	0.024	1		03/17/18 08:59	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/17/18 08:59	16984-48-8	
Sulfate	13.9	mg/L	1.0	0.017	1		03/17/18 08:59	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262896

Sample: FD-01	Lab ID:	262896002	Collecte	ed: 03/14/1	8 00:00	Received: 03/	15/18 12:05 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/19/18 09:50	03/19/18 20:18	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/19/18 09:50	03/19/18 20:18	7440-38-2	
Barium	0.11	mg/L	0.010	0.00078	1	03/19/18 09:50	03/19/18 20:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/19/18 09:50	03/19/18 20:18	7440-41-7	
Boron	0.026J	mg/L	0.040	0.0039	1	03/19/18 09:50	03/19/18 20:18	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/19/18 09:50	03/19/18 20:18	7440-43-9	
Calcium	66.7	mg/L	25.0	0.69	50	03/19/18 09:50	03/19/18 20:23	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/19/18 09:50	03/19/18 20:18	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/19/18 09:50	03/19/18 20:18	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/19/18 09:50	03/19/18 20:18	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/19/18 09:50	03/19/18 20:18	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/19/18 09:50	03/19/18 20:18	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/19/18 09:50	03/19/18 20:18	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/19/18 09:50	03/19/18 20:18	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/19/18 09:50	03/19/18 20:18	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/19/18 09:50	03/19/18 20:18	7440-62-2	
Zinc	0.0081J	mg/L	0.010	0.0021	1	03/19/18 09:50	03/19/18 20:18	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Me	hod: EP	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/17/18 14:40	03/18/18 14:38	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	258	mg/L	25.0	25.0	1		03/20/18 17:42		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.1	mg/L	0.25	0.024	1		03/17/18 09:20	16887-00-6	
Fluoride	0.40	mg/L	0.30	0.029	1		03/17/18 09:20	16984-48-8	
Sulfate	41.0	mg/L	5.0	0.085	5		03/22/18 11:45	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262896

Sample: GWC-8	Lab ID:	262896003	Collecte	ed: 03/14/1	8 19:35	Received: 03/	15/18 12:05 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/19/18 09:50	03/19/18 20:29	7440-36-0	
Arsenic	0.00064J	mg/L	0.0050	0.00057	1	03/19/18 09:50	03/19/18 20:29	7440-38-2	
Barium	0.10	mg/L	0.010	0.00078	1	03/19/18 09:50	03/19/18 20:29	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/19/18 09:50	03/19/18 20:29	7440-41-7	
Boron	0.024J	mg/L	0.040	0.0039	1	03/19/18 09:50	03/19/18 20:29	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/19/18 09:50	03/19/18 20:29	7440-43-9	
Calcium	58.8	mg/L	25.0	0.69	50	03/19/18 09:50	03/19/18 20:35	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/19/18 09:50	03/19/18 20:29	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/19/18 09:50	03/19/18 20:29	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/19/18 09:50	03/19/18 20:29	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/19/18 09:50	03/19/18 20:29	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/19/18 09:50	03/19/18 20:29	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/19/18 09:50	03/19/18 20:29	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/19/18 09:50	03/19/18 20:29	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/19/18 09:50	03/19/18 20:29	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/19/18 09:50	03/19/18 20:29	7440-62-2	
Zinc	0.0053J	mg/L	0.010	0.0021	1	03/19/18 09:50	03/19/18 20:29	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Me	thod: EP	A 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/17/18 14:40	03/18/18 14:40	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	263	mg/L	25.0	25.0	1		03/20/18 17:42		D6
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.1	mg/L	0.25	0.024	1		03/17/18 10:04	16887-00-6	
Fluoride	0.40	mg/L	0.30	0.029	1		03/17/18 10:04	16984-48-8	
Sulfate	36.8	mg/L	5.0	0.085	5		03/22/18 12:07	14808-79-8	



Project:	Plant Hamm	nond - Huffa	ker Road										
Pace Project No.:	262896												
QC Batch:	2725			Analysi	is Method	1: E	EPA 7470A						
QC Batch Method:	EPA 7470/	4		Analysi	is Descrip	otion: 7	470 Mercury	/					
Associated Lab Sar	nples: 262	896001, 26	2896002, 2628	396003									
METHOD BLANK:	14428			N	latrix: Wa	ater							
Associated Lab Sar	nples: 262	896001, 26	2896002, 262	396003									
				Blank	F	Reporting							
Parar	neter		Units	Result	t	Limit	MDL		Analyzed	Qua	alifiers		
Mercury			mg/L		ND	0.00020	0.00	0036 03/	18/18 14:09	9			
LABORATORY CO	NTROL SAM	PLE: 144	29										
				Spike	LC	S	LCS	% Re	C				
Parar	neter		Units	Conc.	Res	ult	% Rec	Limits	s Q	ualifiers			
Mercury			mg/L	.0025		0.0024	94	80)-120		-		
MATRIX SPIKE & M	IATRIX SPIK	E DUPLICA	TE: 14475			14476							
				MS	MSD								
			262928001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury		mg/L	ND	.0025	.0025	0.0020	0.0020	81	81	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 - Huffaker Road

Pace Project No.: 262896

QC Batch:	2745	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Sam	ples: 262896001, 262896002, 26289	6003	
METHOD BLANK:	14542	Matrix: Water	

Associated Lab Samples: 262896001 262896002 262896003

1	,,,	Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/19/18 18:40	
Arsenic	mg/L	ND	0.0050	0.00057	03/19/18 18:40	
Barium	mg/L	ND	0.010	0.00078	03/19/18 18:40	
Beryllium	mg/L	ND	0.0030	0.000050	03/19/18 18:40	
Boron	mg/L	ND	0.040	0.0039	03/19/18 18:40	
Cadmium	mg/L	ND	0.0010	0.000093	03/19/18 18:40	
Calcium	mg/L	ND	0.50	0.014	03/19/18 18:40	
Chromium	mg/L	ND	0.010	0.0016	03/19/18 18:40	
Cobalt	mg/L	ND	0.010	0.00052	03/19/18 18:40	
Copper	mg/L	ND	0.0050	0.0013	03/19/18 18:40	
Lead	mg/L	ND	0.0050	0.00027	03/19/18 18:40	
Nickel	mg/L	ND	0.0050	0.00095	03/19/18 18:40	
Selenium	mg/L	ND	0.010	0.0014	03/19/18 18:40	
Silver	mg/L	ND	0.0050	0.00095	03/19/18 18:40	
Thallium	mg/L	ND	0.0010	0.00014	03/19/18 18:40	
Vanadium	mg/L	ND	0.010	0.0019	03/19/18 18:40	
Zinc	mg/L	ND	0.010	0.0021	03/19/18 18:40	

LABORATORY CONTROL SAMPLE: 14543

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	101	80-120	
Beryllium	mg/L	.1	0.11	111	80-120	
Boron	mg/L	1	1.1	112	80-120	
Cadmium	mg/L	.1	0.11	108	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Chromium	mg/L	.1	0.11	109	80-120	
Cobalt	mg/L	.1	0.11	106	80-120	
Copper	mg/L	.1	0.10	104	80-120	
Lead	mg/L	.1	0.10	103	80-120	
Nickel	mg/L	.1	0.11	108	80-120	
Selenium	mg/L	.1	0.10	104	80-120	
Silver	mg/L	.1	0.10	100	80-120	
Thallium	mg/L	.1	0.10	102	80-120	
Vanadium	mg/L	.1	0.11	108	80-120	
Zinc	mg/L	.1	0.11	112	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 - Huffaker Road

Pace Project No.: 262896

MATRIX SPIKE & MATRIX SPIK	E DUPLIC	ATE: 14544			14545							
			MS	MSD								
		262928001	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	.1	.1	0.11	0.11	106	108	75-125	2	20	
Arsenic	mg/L	0.0014J	.1	.1	0.11	0.11	110	110	75-125	0	20	
Barium	mg/L	ND	.1	.1	0.13	0.13	106	109	75-125	2	20	
Beryllium	mg/L	ND	.1	.1	0.087	0.087	85	84	75-125	1	20	
Boron	mg/L	0.32	1	1	1.2	1.2	87	89	75-125	2	20	
Cadmium	mg/L	ND	.1	.1	0.15	0.14	109	104	75-125	4	20	
Calcium	mg/L	ND	1	1	248	246	1460	1260	75-125	1	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.11	111	110	75-125	1	20	
Cobalt	mg/L	ND	.1	.1	1.5	1.5	240	255	75-125	1	20	M1
Copper	mg/L	0.010	.1	.1	0.11	0.11	99	99	75-125	0	20	
Lead	mg/L	ND	.1	.1	0.097	0.095	96	95	75-125	1	20	
Nickel	mg/L	0.53	.1	.1	0.66	0.66	124	128	75-125	1	20	M1
Selenium	mg/L	ND	.1	.1	0.12	0.12	118	116	75-125	2	20	
Silver	mg/L	ND	.1	.1	0.088	0.088	88	88	75-125	1	20	
Thallium	mg/L	ND	.1	.1	0.098	0.098	98	98	75-125	0	20	
Vanadium	mg/L	ND	.1	.1	0.12	0.11	116	112	75-125	3	20	
Zinc	mg/L	0.72	.1	.1	0.84	0.86	124	145	75-125	3	20	M1

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

REPORT OF LABORATORY ANALYSIS

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



Project:	Plant Hammond -	Huffaker Road						
Pace Project No .:	262896							
QC Batch:	402761		Analysis M	lethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total D	issolved Solids		
Associated Lab Sam	nples: 26289600	1, 262896002, 26	2896003					
METHOD BLANK:	2234065		Matri	x: Water				
Associated Lab Sam	ples: 26289600	1, 262896002, 26	2896003					
_			Blank	Reporting				
Param	neter	Units	Result	Limit	MDL	Analyz	ed Qualifiers	
Total Dissolved Solid	ls	mg/L	N	D 25	.0 2	25.0 03/20/18	17:42	
LABORATORY CON	ITROL SAMPLE:	2234066						
Param	neter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
Total Dissolved Solid	ds	mg/L	250	226	90	90-110		
SAMPLE DUPLICAT	E: 2234067							
			92376993002	2 Dup		Max		
Param	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Solid	ds	mg/L	35	1 34	47	1	5	
SAMPLE DUPLICAT	E: 2234068							
			262896003	Dup		Max		
Param	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Solid	ds	mg/L	263	3 21	10	22	5 D6	

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



Project:	Plant H	lammond - Huff	aker Road										
Pace Project No.:	262896	6											
QC Batch:	2695			Analvsi	s Method	: El	PA 300.0						
QC Batch Method	: EPA 3	300.0		Analysi	s Descrip	tion: 30	0.0 IC Anio	ns					
Associated Lab Sa	amples:	262896001.26	62896002, 262	896003	0 2 0001.p								
		, .	, .										
METHOD BLANK	: 14190			N	latrix: Wa	ter							
Associated Lab Sa	amples:	262896001, 26	62896002, 262	896003									
-				Blank	R	leporting				•			
Para	ameter		Units	Result		Limit	MDL		Analyzed	Qua	alifiers		
Chloride			mg/L		ND	0.25	0	.024 03/	17/18 02:27	7			
Fluoride			mg/L		ND	0.30	0	.029 03/	17/18 02:27				
Sulfate			mg/L		ND	1.0	0	.017 03/	17/18 02:27	, 			
LABORATORY CO	ONTROL	SAMPLE: 141	191										
				Spike	LCS	6	LCS	% Re	0				
Para	ameter		Units	Conc.	Resu	ult	% Rec	Limits	s Qu	alifiers			
Chloride			mg/L	10		10.4	104	90)-110		-		
Fluoride			mg/L	10		10.1	101	90)-110				
Sulfate			mg/L	10		10.6	106	90)-110				
MATRIX SPIKE &	MATRIX		ATE: 14192			14193							
				MS	MSD								
			262779001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parame	ter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride		mg/L	1.1	10	10	11.3	11.3	102	102	90-110	0	15	
Fluoride		mg/L	ND	10	10	10.3	10.2	103	102	90-110	0	15	
Sulfate		mg/L	ND	10	10	10.3	10.4	99	100	90-110	0	15	
MATRIX SPIKE SA	AMPLE:	141	194										
				262779	9002	Spike	MS	Ν	1S	% Rec			
Para	ameter		Units	Resu	ılt	Conc.	Result	%	Rec	Limits		Qualif	fiers
Chloride			mg/L		3.2	10	12	2.9	97	90-	110		
			ma/L		ND	10	10).3	103	90-	110		
Fluoride													

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 Road

Pace Project No.: 262896

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.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- 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 Road

Pace Project No.: 262896

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
262896001	GWA-2	EPA 3005A	2745	EPA 6020B	2801
262896002	FD-01	EPA 3005A	2745	EPA 6020B	2801
262896003	GWC-8	EPA 3005A	2745	EPA 6020B	2801
262896001	GWA-2	EPA 7470A	2725	EPA 7470A	2735
262896002	FD-01	EPA 7470A	2725	EPA 7470A	2735
262896003	GWC-8	EPA 7470A	2725	EPA 7470A	2735
262896001	GWA-2	SM 2540C	402761		
262896002	FD-01	SM 2540C	402761		
262896003	GWC-8	SM 2540C	402761		
262896001	GWA-2	EPA 300.0	2695		
262896002	FD-01	EPA 300.0	2695		
262896003	GWC-8	EPA 300.0	2695		

Pace Analytical

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

	Sectio	on A	Section B						Section	υ															
	Requi	ired Client Information:	Required Prc	plect Inf	ormation:				Invoice	Informa	tion:									ć		-			
		Many- Georgia Power - Coal Combustion Residuals	Report To:	Abia	vaham / Lau	en Petty			Attention	ŝ	sinvoit	ces@s	outher	10.00	Ē			Г					ð	-	
	Nome Volume	sss. 2480 Maner Road	Copy To:	Geosyn	ttec				Compan	y Name:								Т							
		Atlanta, GA 30339							Address .																
	Email	i jabraham@southemco.com	Purchase Ord	ter #:	SCS10348	909		ſ	Pace Ou	iote:										Ê	egulator	Y Agency	1.643.25	民族部次	
-	Phone	e: (404)506-7239 Fax	Project Name.	ā	ant Hammon	d - Huffakei	Road		Pace Pn	oject Mar	nager	betsv	modan	CeoQle	e stele	Ę		0	120.000						
-	Кефе	ested Due Date: Standard TAT	Project #						Pace Pr	ofile #:	328.3			5				à V				ocation	一日		
				┠											S = R.	panested	Analysi	Fittered	NAN .	1000	5 } }				
		XPALLARN N	CODE	(16) (16) (16) (16)		COLLECT	Ę	N	<u>.</u>	2	eserva	tives		N/A	Z	Z			\vdash	<u> </u>					
		SAMPLE ID Sarson	9 222 222 222 222 222 222 222 222 222 2	eboo telia ees) (see velia code	STAF		ËN	L COLLECTION	\$1					State)		otellu2,					(N/A)				
	# WƏLI	One Character per box. Wee (A.Z. 0-91, -) A: Sample ids must be unique Traue	24 X 15 X	MATRIX CODE	DATE		ATE	 A AMBLE TEMP A	Pubreserved	HNO3 HJSO4	N®OH ICI	Nª28203	Othor	+ III .qqA) stateN	LD2 PÅ 5240C	epuoni-l'epuciu:					enitolit) leubles				
	認	GWA- 2		5	3/w/kg	700 3/	1/10/17	R.	3	-				<u>} ~</u>	F	Į,		╫╴	#	\parallel				Π	
	12 A	1D-01		2	3/14/8	<u>ק</u> ו קו		4	32					12	抸		+		╪	Ŧ				Τ	
	11. 11	§ Gwc-8		د ا	3 Juli:	1526	Nhr 193	2.12 5	2 5	-			T	-1-	آ ۔		╞	+	╪	Ŧ				Τ	
				H		╟		Ħ	Ħ	╢					+		+	╞	╪	-					
		kars				+	+	T	+	+		+	Ŧ			#		₩	╢	\prod					
				+		╀╴	-	+	-	+			-	8	শ্ব	+	$\uparrow \downarrow$			T					
	る思想			+		╀		+	+		4	<u>_</u>	1	Ţ	╈		1	4		1					
			╈	-		╎		1	书	₹	$\overline{\mathcal{H}}$		T											Γ	
						7														ž	ğ	Y		1	
		X		Γ	Ţ	h	_	╈	_	╇			Ŧ		-+	+	5 : 				Ś	2			
			X	-		+			1	+		+	_								_				
	6		1	Π					#	\mathbf{H}	╢		1	Ц	┥┤		3	:2896							
		A NUMBER OF STREET, ST			HED EN (MF)	MUN	調整				認知				- 10										`.
			J.		J W C	moul	31/1	8	5 91	Ľ	انال	ج بر	5	<u>s</u>			160	4/12 S	510						
			2	31	acm	Ş	1/1/6	8	2110		X		-1				3/14	18/2					╋	Τ	
			10	Ś	<i>E</i>			11-201	0.4	2	2	Ž		4	5		3/16	81/	1043			_	╞	T	
					X	10 A					2	Z	Z	×	3	ړ	2	1811	205	2	8	3	A	1	
	Page				84 	PRINT N	the of SAME	LER:													- ua	+		<u> </u>	
	e 15 of 1					SIGNED		LEN.		ĔŚ					ATES	bredt	3 //4	811		4 dwat	Received Received	Cooler Custody Custody	(Y/V) Semples Atect	(N/A)	
	6																							7	

.

Sa	mple C	ond	ition	Upon Receipt	t		
Face Analytical Olivert Name	. G	A	Da	1,007	c	Project #	-
	e: <u>Ol</u>	r.	10	were	'		
	t i l		ucial	Race Other	•	LIO#:262896	
Courier: I Fed EX I UPS I USPS I Cile Tracking #:		unne				Due Date: 03	/22/1
Custody Seal on Cooler/Box Present: Ves			Seals	intact: ves		O TENT: GAPOWER-CCR	
	o Roca			Other			
	e Days		Mai	Blue None	Π	Samples on ice, cooling process has begun	
	Biolog	ical T		is Frozen: Yes No	, <u> </u>	Date and Initials of person examining	1
Cooler Temperature <u>X Y</u>	210.09		100-0	Comments:		contents: 011910	
Chain of Custody Present:	-El Yes			1.			· .
Chain of Custody Filled Out:	ElYes			2.			
Chain of Custody Palied Odt.			□n/A	3.			
Sampler Name & Signature on COC	EYes	No.		4.			
Samples Arrived within Hold Time:	ETes			5.			
Short Hold Time Analysis (<79hr)	 □Yes	ZNO		6.			
Duch Turn Around Time Requested		INC		7.			
Sufficient Volume:	Yes			8.			
Corroct Containing Lised:	PTY85			9.			
Base Containers Used	"						
	TYes			10.			
Siltered volume received for Dissolved tests				11.			
Sample Labels match COC:	TY as			12.			
اتین این: Includes data/time/ID/Analysis Matrix	. u	₽					
All containers needing preservation have been checked.	Dra.			13			Π
All containers pending preservation are found to be in			_				
compliance with EPA recommendation.	1785	No	UN/A				H
avcentione: VOA chilform TOC O&G WI-DEO (water)	⊡Yas .			Initial when completed		Lot # of added preservative	
Samples checked for dechlorination:	⊡Yes		ENVA	14			
Headsnace in VOA Vials (>6mm):	⊡Yes			15			Π
Trio Black Present	 ⊡Yas		ENA	16			Π
Trip Black Custody Seals Present	⊡ Yas	- No	- TA			•	
Page Trip Black Lot # (if purchased):							
							F
Client Notification/ Resolution:			.			Field Data Required? Y / N	
Person Contacted:			_Date/	lime:			
Comments/ Resolution:						· · · · · · · · · · · · · · · · · · ·	-
				•			-
	-	<u> </u>	<u></u>				-
						+	F
							-
· · · · · ·				· · · · · · · · · · · · · · · · · · ·			
Project Manager Review:					_	Date:	_
	Oerelle				<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 (if a put of hold incorrect preservative put of temp incorrect containers

F-ALLC003rev 3 11 Sectember 2006



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

March 28, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 262979

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 16, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc.





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 262979

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204

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



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262979

Lab ID	Sample ID	Matrix	Date Collected	Date Received
262979001	GWC-20	Water	03/16/18 10:55	03/16/18 17:30
262979002	GWC-5	Water	03/16/18 12:22	03/16/18 17:30



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:262979

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
262979001	GWC-20	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262979002	GWC-5	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262979

Sample: GWC-20	Lab ID:	Lab ID: 262979001		ed: 03/16/18	8 10:55	Received: 03/16/18 17:30 Matrix: Water				
		Report								
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A				
Antimony	ND	mg/L	0.0030	0.00078	1	03/20/18 09:19	03/21/18 00:52	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	03/20/18 09:19	03/21/18 00:52	7440-38-2		
Barium	0.12	mg/L	0.010	0.00078	1	03/20/18 09:19	03/21/18 00:52	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	03/20/18 09:19	03/21/18 00:52	7440-41-7		
Boron	0.016J	mg/L	0.040	0.0039	1	03/20/18 09:19	03/21/18 00:52	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	03/20/18 09:19	03/21/18 00:52	7440-43-9		
Calcium	53.4	mg/L	25.0	0.69	50	03/20/18 09:19	03/21/18 00:57	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	03/20/18 09:19	03/21/18 00:52	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	03/20/18 09:19	03/21/18 00:52	7440-48-4		
Copper	ND	mg/L	0.0050	0.0013	1	03/20/18 09:19	03/21/18 00:52	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	03/20/18 09:19	03/21/18 00:52	7439-92-1		
Nickel	ND	mg/L	0.0050	0.00095	1	03/20/18 09:19	03/21/18 00:52	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	03/20/18 09:19	03/21/18 00:52	7782-49-2		
Silver	ND	mg/L	0.0050	0.00095	1	03/20/18 09:19	03/21/18 00:52	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	03/20/18 09:19	03/21/18 00:52	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	03/20/18 09:19	03/21/18 00:52	7440-62-2		
Zinc	ND	mg/L	0.010	0.0021	1	03/20/18 09:19	03/21/18 00:52	7440-66-6		
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EP	PA 7470A				
Mercury	ND	mg/L	0.00020	0.000036	1	03/20/18 13:28	03/20/18 17:51	7439-97-6		
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C							
Total Dissolved Solids	216	mg/L	25.0	25.0	1		03/23/18 09:19			
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0							
Chloride	1.9	mg/L	0.25	0.024	1		03/23/18 14:46	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		03/23/18 14:46	16984-48-8	M1	
Sulfate	37.5	mg/L	1.0	0.017	1		03/23/18 14:46	14808-79-8	M1	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262979

Sample: GWC-5	Lab ID:	262979002	Collecte	ed: 03/16/18	8 12:22	Received: 03/16/18 17:30 Matrix: Water				
			Report							
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A				
Antimony	ND	mg/L	0.0030	0.00078	1	03/20/18 09:19	03/21/18 01:03	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	03/20/18 09:19	03/21/18 01:03	7440-38-2		
Barium	0.091	mg/L	0.010	0.00078	1	03/20/18 09:19	03/21/18 01:03	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	03/20/18 09:19	03/21/18 01:03	7440-41-7		
Boron	0.047	mg/L	0.040	0.0039	1	03/20/18 09:19	03/21/18 01:03	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	03/20/18 09:19	03/21/18 01:03	7440-43-9		
Calcium	78.1	mg/L	25.0	0.69	50	03/20/18 09:19	03/21/18 01:09	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	03/20/18 09:19	03/21/18 01:03	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	03/20/18 09:19	03/21/18 01:03	7440-48-4		
Copper	ND	mg/L	0.0050	0.0013	1	03/20/18 09:19	03/21/18 01:03	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	03/20/18 09:19	03/21/18 01:03	7439-92-1		
Nickel	ND	mg/L	0.0050	0.00095	1	03/20/18 09:19	03/21/18 01:03	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	03/20/18 09:19	03/21/18 01:03	7782-49-2		
Silver	ND	mg/L	0.0050	0.00095	1	03/20/18 09:19	03/21/18 01:03	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	03/20/18 09:19	03/21/18 01:03	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	03/20/18 09:19	03/21/18 01:03	7440-62-2		
Zinc	ND	mg/L	0.010	0.0021	1	03/20/18 09:19	03/21/18 01:03	7440-66-6		
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A				
Mercury	ND	mg/L	0.00020	0.000036	1	03/20/18 13:28	03/20/18 18:52	7439-97-6		
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C							
Total Dissolved Solids	390	mg/L	25.0	25.0	1		03/23/18 09:19			
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0							
Chloride	3.2	mg/L	0.25	0.024	1		03/23/18 15:53	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		03/23/18 15:53	16984-48-8		
Sulfate	77.4	mg/L	10.0	0.17	10		03/26/18 21:23	14808-79-8		



Project:	Plant Han	nmond - Huf	faker Road											
Pace Project No.:	262979													
QC Batch:	2820			Analys	s Meth	od: E	EPA 7470A							
QC Batch Method:	EPA 747	70A		Analys	s Desc	ription: 7	7470 Mercur	у						
Associated Lab Sar	nples: 2	62979001, 2	62979002											
METHOD BLANK:	14731			N	latrix: \	Water								
Associated Lab Sar	nples: 2	62979001, 2	62979002											
				Blank		Reporting								
Parar	neter		Units	Result	:	Limit	MDL		Analyze	d	Qua	alifiers		
Mercury			mg/L		ND	0.00020	0.00	0036	03/20/18 17	7:46				
LABORATORY COI	NTROL SA	MPLE: 14	732											
				Spike	L	.CS	LCS	%	Rec					
Paran	neter		Units	Conc.	Re	esult	% Rec	Lir	mits	Qualifie	ərs			
Mercury			mg/L	.0025		0.0025	102		80-120					
MATRIX SPIKE & M	IATRIX SP		ATE: 14733			14734								
				MS	MSD									
_			262979001	Spike	Spike	MS	MSD	MS	MSD	%	Rec		Max	
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Re	c % Re	c Lin	nits	RPD	RPD	Qual
Mercury		mg/L	ND	.0025	.002	25 0.0026	0.0024	1	03	98 75	5-125	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.



Plant Hammond - Huffaker Road Project:

Pace Project No .: 262979

QC Batch: 2814

Analysis Method: EPA 6020B QC Batch Method: EPA 3005A Analysis Description: 6020B MET Associated Lab Samples: 262979001, 262979002 METHOD BLANK: 14716 Matrix: Water Associated Lab Samples: 262979001, 262979002 Blank Reporting Limit Parameter Result MDL Analyzed Qualifiers Units Antimony mg/L ND 0.0030 0.00078 03/20/18 20:23 Arsenic mg/L ND 0.0050 0.00057 03/20/18 20:23 Barium ND mg/L 0.010 0.00078 03/20/18 20:23 Beryllium mg/L ND 0.0030 0.000050 03/20/18 20:23 Boron mg/L ND 0.040 0.0039 03/20/18 20:23 Cadmium mg/L ND 0.0010 0.000093 03/20/18 20:23 Calcium mg/L ND 0.50 0.014 03/20/18 20:23 Chromium mg/L ND 0.010 0.0016 03/20/18 20:23 Cobalt mg/L ND 0.010 0.00052 03/20/18 20:23 ND 0.0050 Copper mg/L 0.0013 03/20/18 20:23 mg/L Lead ND 0.0050 0.00027 03/20/18 20:23 mg/L Nickel ND 0.0050 0.00095 03/20/18 20:23 Selenium ND mg/L 0.010 0.0014 03/20/18 20:23 Silver ND 0.00095 mg/L 0.0050 03/20/18 20:23 Thallium mg/L ND 0.00014 03/20/18 20:23 0.0010 Vanadium mg/L ND 0.010 0.0019 03/20/18 20:23 Zinc mg/L ND 0.010 0.0021 03/20/18 20:23

LABORATORY CONTROL SAMPLE: 14717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ma/l		0.11	110	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	ma/L	.1	0.10	103	80-120	
Beryllium	mg/L	.1	0.11	108	80-120	
Boron	mg/L	1	1.1	108	80-120	
Cadmium	mg/L	.1	0.10	105	80-120	
Calcium	mg/L	1	1.1	106	80-120	
Chromium	mg/L	.1	0.10	103	80-120	
Cobalt	mg/L	.1	0.10	100	80-120	
Copper	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.10	102	80-120	
Nickel	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.10	103	80-120	
Silver	mg/L	.1	0.091	91	80-120	
Thallium	mg/L	.1	0.10	102	80-120	
Vanadium	mg/L	.1	0.10	105	80-120	
Zinc	mg/L	.1	0.11	106	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 Road

Pace Project No.: 262979

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 14718 14719												
			MS	MSD								
		262972001	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	.1	.1	0.11	0.11	109	108	75-125	1	20	
Arsenic	mg/L	0.00063J	.1	.1	0.11	0.10	107	104	75-125	3	20	
Barium	mg/L	0.020	.1	.1	0.12	0.12	102	100	75-125	2	20	
Beryllium	mg/L	ND	.1	.1	0.11	0.10	105	105	75-125	0	20	
Boron	mg/L	0.0084J	1	1	1.0	1.1	101	104	75-125	4	20	
Cadmium	mg/L	ND	.1	.1	0.11	0.10	105	104	75-125	2	20	
Calcium	mg/L	26.2	1	1	27.4	28.6	122	240	75-125	4	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20	
Cobalt	mg/L	ND	.1	.1	0.10	0.099	103	99	75-125	4	20	
Copper	mg/L	ND	.1	.1	0.10	0.10	101	101	75-125	0	20	
Lead	mg/L	ND	.1	.1	0.10	0.10	102	104	75-125	2	20	
Nickel	mg/L	ND	.1	.1	0.10	0.10	102	101	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.11	0.10	106	102	75-125	4	20	
Silver	mg/L	ND	.1	.1	0.089	0.091	89	91	75-125	2	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	104	103	75-125	1	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	108	106	75-125	2	20	
Zinc	mg/L	ND	.1	.1	0.11	0.11	105	106	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 -	Huffaker Road					
Pace Project No .:	262979						
QC Batch:	403194		Analysis N	lethod:	SM 2540C		
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total Dis	solved Solids	
Associated Lab Sam	ples: 26297900	01, 262979002					
METHOD BLANK:	2236685		Matri	x: Water			
Associated Lab Sam	ples: 26297900	01, 262979002					
			Blank	Reporting			
Param	eter	Units	Result	Limit	MDL	Analyze	ed Qualifiers
Total Dissolved Solic	ls	mg/L	NI	D 25	5.0 25	5.0 03/26/18 1	13:30
LABORATORY CON	ITROL SAMPLE:	2236686					
			Spike	LCS	LCS	% Rec	
Param	eter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Total Dissolved Solid	ls	mg/L	250	250	100	90-110	
SAMPLE DUPLICAT	E: 2236687						
			262978001	Dup		Max	
Param	eter	Units	Result	Result	RPD	RPD	Qualifiers
Total Dissolved Solid	ls	mg/L	NI		ND		5
SAMPLE DUPLICAT	E: 2236688						
			262960001	Dup		Max	
Param	eter	Units	Result	Result	RPD	RPD	Qualifiers
Total Dissolved Solid	ls	mg/L	<25.	0 1	ND		5

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.



EPA 300.0

Analysis Method:

Project:	Plant Hammond -	Huffaker Road

Pace Project No.: 262979

QC Batch:	3105

QC Batch Method: EPA 300.0 Associated Lab Samples: 26297900	01, 262979002	Analysis I	Description:	300.0 IC	Anions				
METHOD BLANK: 16004		Mat	rix: Water						
Associated Lab Samples: 2629790	01, 262979002								
		Blank	Reporting	9					
Parameter	Units	Result	Limit	N	1DL	Analyz	ed	Qualifiers	
Chloride	mg/L	N	1D 0	.25	0.024	03/25/18	17:51		
Fluoride	mg/L	Ν	1D 0	.30	0.029	03/25/18	17:51		
Sulfate	mg/L	Ν	ID	1.0	0.017	03/25/18	17:51		
LABORATORY CONTROL SAMPLE:	16005								
		Spike	LCS	LCS	9	% Rec			
Parameter	Units	Conc.	Result	% Rec	I	Limits	Qualif	iers	
Chloride	mg/L		9.6		96	90-110			
Fluoride	mg/L	10	10.8		108	90-110			
Sulfate	mg/L	10	10.5		105	90-110			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16006 16007												
			MS	MSD								
		262979001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.9	10	10	11.9	11.9	100	100	90-110	0	15	
Fluoride	mg/L	ND	10	10	11.4	11.4	113	114	90-110	1	15	M1
Sulfate	mg/L	37.5	10	10	43.8	43.8	64	64	90-110	0	15	M1

MATRIX SPIKE SAMPLE:	16008						
		262979002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	3.2	10	12.8	96	90-110	
Fluoride	mg/L	ND	10	10.5	105	90-110	
Sulfate	mg/L	77.4	10	94.1	167	90-110 E	

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 Road

Pace Project No.: 262979

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.

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

- 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 - Huffaker RoadPace Project No.:262979

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
262979001	GWC-20	EPA 3005A	2814	EPA 6020B	2881
262979002	GWC-5	EPA 3005A	2814	EPA 6020B	2881
262979001	GWC-20	EPA 7470A	2820	EPA 7470A	2876
262979002	GWC-5	EPA 7470A	2820	EPA 7470A	2876
262979001	GWC-20	SM 2540C	403194		
262979002	GWC-5	SM 2540C	403194		
262979001	GWC-20	EPA 300.0	3105		
262979002	GWC-5	EPA 300.0	3105		

5

Ċ CHAIN.

	- Pare Araytical					CIAIN-C		З S S S S S S S S S S S S S S S S S S		Y / Ana	ENT. AII	relev		est elds n	DOC Turst b		ent pleter	d acci	rrately					
Section	A	Section B						Section	ņ										L					ſ
Require	ed Client Information:	Required Proj	ect tr	nformati	:uc			invola	t Informat	tion:									6	. 605		C	-	
Compar	ny: Georgia Power - Coal Combustion Residuals	Report To. J	장	Martand	/ Lauren Pett			Hen	ы S	sinvoices	Dsouther	82	a g				Г			•		"		1
Address	9: 2480 Marrer Road	Copy To: 6	88	yntec				omo?	ny Name:								Т							
	Attarria, GA 30339		1				Γ	2 Serbby									╀	1						ſ
Email:	jabraham@southemco.com	Purchase Orde		scs	10348606		Γ	2806	uote:										-				64 14	
Phone:	(404)506-7239 Fax	Project Name:	<u>ן</u>	Plant Har	nand - Huff	atter Road	Γ	2000	roject Mar	nader. hel	tev morten	el@re	adaha	Į			ŝ	10 - 14 11 - 14	1.1.1					Ţ
Request	ted Due Date: <i>57A V DARD THT</i>	Project #					Γ	³ 306 P	rofile #	328.3				Í			╇				5	5		
														Country	A Pate	ahrais		d CYBN			5			
			(Noi	(a:								: • N	-	E	F	2	õ	R	30			ر به می (دمین) (دمین		
	MAT	RK CODE	100	COM	COLL	ECTED	N		Ē	reservatives	ŝ	1/1	K N	2	Ļ	E	-		È	<u> </u>				
	Dit: Wat		velid code	-O BAR)TTEC110					ier Ferrie	(6)#	efeli				2	5	(N/				Γ
	SAMPLE ID	 ಸರ	,)=0)	START	END)) T.	82				юT	18 +	ng'e		_	Ž			Y) ei				
	One Character per box	we h	_	L		-	~	13			_	9	(Pł		_	7	-		L)				

	-	-														-									
tate / Location	G	- 「「「「」」」の「「「「「「」」」			(N/Y) a	Residual Chiorin									679				SAUPLE CONDITIONS				AY Y Y	5 / /	(Y/N) Semples Coolet (Y/N) Custody Sealed Coolet (Y/N) Casted Sealed (Y/N)
			8	R					₩		\square	-	\square	Ŧ	ß			•	诸侯				2	C	n 9M3T
		CVUV)	14/20		toct					+			-	<u></u>	ñ			-		1315	5.25	173			
		Fittered	βG							1		-	1	‡:	*			676 -		2/2	8	6/18	-		Siar
		nahrais	190		``	B								<u>†</u> :	X				ð	1/60	31/12	3/1	-	2.42	11/1
		uested A]	,						\uparrow			╞	<u> </u>		1						2			bred: O
labs.con		Req		2 X	e.Sulfate	TOS by 2540C	7	γY		$\ $									Ĩ	3	683	Ś			DATE Si
(@pace				<u>ک</u> ا	+ State)	BOBYIBIA	γ	7			Ļ				1			Ц		4	1	K		E E E	
modanie						Olhar		\square			1	T						T		m		al			
belsy.				ives		Nathanol Nazszo3	_			10	$\frac{1}{2}$			<u> </u>						lia				1.2	
ger:	328.3			servat		N ^{EOH}					1	-				-				Nor	ŝ.	2	•		
t Mana	#			а а́		EONH	-	Ξ	Ħ	-		1						\square	11 (13) 11 (13) 11 (13)		4				
Projec	Profile					H2SO4 Dupreserved	2	2	╟	\vdash	<u>2″ </u>	╨	-	\vdash			-	\square		15	25				
Pag	Pace			di	88	# OF CONTAINE!	ŝ	~	Ħ			\Box							氮	5	15			JUE	
					T COLLECTIC	A 9491 3J9948	13. 13. 13. 14. 14. 14. 14. 14. 14. 14. 14. 14. 14	25.51		$\left \right $		₿	\mathbf{h}	\vdash				H	Dute	't/18	16/13			SCONT BUB	AMPLER
r Road				B	END	ATE	11/8/10	1 81/			╞		20	$\left \right $			-	╟		1/8	160			ALLE ALL	
- Huffate				COLLECT		D IME	6 Etri	1/2 51:			+	+-	Ŕ	\mathbf{h}				┝┼╴	INTION					IPLER N PRINT N	AU Signer
- puouru					START	א ש	18 10:	18 12			-		<u> </u>	5				╟	N LAFE	.,	unde			N.	
^{blant} Ha			(D BANDEDI		1/10/2 +	Sile 5					<u> </u>	ت_	Ν_		<u> </u>			Z	- In	-			
5			(Nol	01 80	pop pilev ees	EGOD XIRTAM	۳I	4							\square			H		A					
oject Nam				1000 1000	ᇢᆂᆾᇂ ^ᇽ ᠑	4 6 6 F 5												ľ/	Sec. 1	6	2 or	_			
Δ	E			MATRIX	uniting wein Weite Weite Weite Product Solfsofd Od	Wipe Ali Titstue										1									
Fax	141				Ð	box. • unique							\mathbb{V}						STADAD						
(404)506-7239	TXM/7/WWW				SAMPLE	One Character per (A.Z, 0-9 /, -) Sample Ids must be	GWC-20	GWC-S		/		ĺ						\setminus	ADDITIONAL CO						
Phone:	Kequested I	ŀ				# WƏTI		29. 29. 29.	5		174		1	00 00 00 00 00	1000 A	10		12	「「「「「「「「」」」					Page	e 14 of

Sa	mple C	ond	ition	Upon Receipt		-
Pace Analytical Client Nome	· C	A	. P	ri)017	Project #	
Client Name	<u>יש .</u>		_/_		WO#: 262979	
Courier:` 🔲 Fed Ex 🗍 UPS 🗍 USPS 🗍 Clie Tracking #:	ent 🔎	omme	ercial	Pace Other _	PM: BM Due Date:	03/26/18
Custody Seal on Cooler/Box Present: Øyes	, 🗆 r	b	Seals	intact: Ves	CLIENT: GRPower-CCR	
Packing Material: Bubble Wrap Bubble	e Bags	<u>п</u> и	one	Other	//	
Thermometer Used 8.5_	Туре о	f Ice:	Wet	Blue None	Samples on ice, cooling process has begun	
Cooler Temperature 4.2 Temp should be above freezing to 6°C	Biolog	ical 1	Issue	is Frozen: Yes No Comments:	Date and initials of person examining contents: 3/16/18-194	
Chain of Custody Present:	-EYes	□No		1		14
Chain of Custody Filled Out:	Yes	⊡No		2.		 −
Chain of Custody Relinguished:	- TYes	0 No		3.		<u> -</u>
Sampler Name & Signature on COC:	TYes			4		-
Samples Arrived within Hold Time:	Ves	□No		5.		
Short Hold Time Analysis (<72hr):	□Yes	EIN0		6.		
Rush Turn Around Time Requested:	□Yes	ZNO		7		<u> </u> -
Sufficient Volume:	Yes			8.		} -{
Correct Contairiers Used:	TYes		⊡n/A	9.		
-Pace Containers Used:	Yes				····	
Containers Intact:	Yes	⊡No	□n/A	10.		
Filtered volume received for Dissolved tests	- Yes		DHIA	11		<u>+-</u>
Sample Labels match COC:	-EYes		□n/A	12.		
-Includes date/time/ID/Analysis Matrix:					-	+-
All containers needing preservation have been checked.	Yes		⊡n/A	13.		
Ail containers needing preservation are found to be in compliance with EPA recommendation.	Pres	⊡No	⊡n⁄a			
exceptions: VOA, caliform, TOC, O&G, WI-DRO (water)	∐Yes	QH6	-	completed	preservative	
Samples checked for dechlorination:	⊡Yes			14		
Headspace in VOA Vials (>6mm):	□Yes		CINA	15.		
Trip Blank Present	Yes	⊒Na		16.		
Trip Blank Custody Seals Present	⊡Yes			+	•	
Pace Trip Blank Lot # (if purchased):						
Client Notification/ Resolution:					Field Data Required? Y / N	
Person Contacted:			_Date/	Time:		
Comments/ Resolution:						┣-
						<u></u>
				· · · · · · · · · · · · · · · · · · ·		+- ·
				· · · · · · · · · · · · · · · · · · ·		+
						+
						<u>.</u>
Project Manager Review:		ļ			Date:	L

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 emp_incorrect containers)



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

April 20, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 262980

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 16, 2018. 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.

REV04202018_report revised to correct RL for TDS on sample 001.

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

Sincerely,

Batery Mc Damil

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

Enclosures

cc: Whitney Law, Geosyntec Consultants Noelia Muskus, Geosyntec Consultants Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc.





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 262980

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204

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



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

Lab ID	Sample ID	Matrix	Date Collected	Date Received
262980001	EB-02	Water	03/16/18 08:40	03/16/18 17:30
262980002	FB-02	Water	03/16/18 08:55	03/16/18 17:30
262980003	GWC-18	Water	03/16/18 10:38	03/16/18 17:30
262980004	GWC-6	Water	03/16/18 12:25	03/16/18 17:30



SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
262980001	EB-02	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262980002	FB-02	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262980003	GWC-18	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262980004	GWC-6	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

Sample: EB-02	Lab ID:	262980001	Collecte	ed: 03/16/1	8 08:40	Received: 03/	16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 17:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 17:04	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 17:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 17:04	7440-41-7	
Boron	0.0049J	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 17:04	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 17:04	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	03/22/18 11:15	03/26/18 17:04	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 17:04	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 17:04	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 17:04	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 17:04	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 17:04	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 17:04	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 17:04	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 17:04	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 17:04	7440-62-2	
Zinc	0.014	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 17:04	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Me	hod: EP	PA 7470A			
Mercury	ND	mg/L	0.00050	0.000036	1	03/22/18 10:55	03/23/18 11:26	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		03/23/18 09:19		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	ND	mg/L	0.25	0.024	1		03/23/18 16:16	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/23/18 16:16	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		03/23/18 16:16	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

Sample: FB-02	Lab ID:	262980002	Collecte	ed: 03/16/18	8 08:55	Received: 03/	/16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 17:10	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 17:10	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 17:10	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 17:10	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 17:10	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 17:10	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	03/22/18 11:15	03/26/18 17:10	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 17:10	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 17:10	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 17:10	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 17:10	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 17:10	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 17:10	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 17:10	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 17:10	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 17:10	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 17:10	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	thod: EP	PA 7470A			
Mercury	ND	mg/L	0.00050	0.000036	1	03/22/18 10:55	03/23/18 11:28	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		03/23/18 09:20		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	ND	mg/L	0.25	0.024	1		03/25/18 18:53	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/25/18 18:53	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		03/25/18 18:53	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

Sample: GWC-18	Lab ID:	262980003	Collecte	ed: 03/16/18	8 10:38	Received: 03/	/16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 17:15	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 17:15	7440-38-2	
Barium	0.074	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 17:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 17:15	7440-41-7	
Boron	0.12	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 17:15	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 17:15	7440-43-9	
Calcium	45.9	mg/L	25.0	0.69	50	03/22/18 11:15	03/26/18 17:21	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 17:15	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 17:15	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 17:15	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 17:15	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 17:15	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 17:15	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 17:15	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 17:15	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 17:15	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 17:15	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.000036	1	03/22/18 10:55	03/23/18 11:31	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	199	mg/L	25.0	25.0	1		03/23/18 09:20		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.5	mg/L	0.25	0.024	1		03/25/18 19:14	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/25/18 19:14	16984-48-8	
Sulfate	11.7	mg/L	1.0	0.017	1		03/25/18 19:14	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

Sample: GWC-6	Lab ID:	262980004	Collecte	ed: 03/16/1	8 12:25	Received: 03/	/16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 18:17	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 18:17	7440-38-2	
Barium	0.17	mg/L	0.050	0.0039	5	03/22/18 11:15	03/30/18 12:50	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 18:17	7440-41-7	
Boron	0.044	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 18:17	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 18:17	7440-43-9	
Calcium	66.9	mg/L	25.0	0.69	50	03/22/18 11:15	03/26/18 18:23	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 18:17	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 18:17	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 18:17	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 18:17	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 18:17	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 18:17	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 18:17	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 18:17	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 18:17	7440-62-2	
Zinc	0.0029J	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 18:17	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Me	thod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.000036	1	03/22/18 10:55	03/23/18 11:17	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	317	mg/L	25.0	25.0	1		03/23/18 09:20		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.1	mg/L	0.25	0.024	1		03/25/18 19:34	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/25/18 19:34	16984-48-8	
Sulfate	93.6	mg/L	10.0	0.17	10		03/26/18 21:44	14808-79-8	



Project:	Plant Hamm	ond - Huffa	ker Road										
Pace Project No.:	262980												
QC Batch:	2968			Analysi	is Metho	d: E	EPA 7470A						
QC Batch Method:	EPA 7470/	4		Analysi	is Descri	ption: 7	7470 Mercur	у					
Associated Lab Sar	nples: 262	980001, 26	2980002, 2629	980003, 262	2980004								
METHOD BLANK:	15501			N	latrix: W	ater							
Associated Lab Sar	nples: 262	980001, 26	2980002, 2629	980003, 262	2980004								
				Blank		Reporting							
Paran	neter		Units	Result	t	Limit	MDL		Analyzed	Qua	alifiers		
Mercury			mg/L		ND	0.0005	0.00	0036 03	3/23/18 11:1	2			
LABORATORY COI	NTROL SAM	PLE: 1550	02										
				Spike	LC	S	LCS	% R	ec				
Paran	neter		Units	Conc.	Res	sult	% Rec	Limi	ts Q	ualifiers			
Mercury			mg/L	.0025		0.0026	104	8	30-120		-		
MATRIX SPIKE & M	IATRIX SPIK	E DUPLICA	TE: 15503			15504							
				MS	MSD								
-			262980004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	<u> </u>
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury		mg/L	ND	.0025	.0025	5 0.0027	0.0027	11(D 110	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 - Huffaker Road

Pace Project No.: 262980

QC Batch:	2942	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Sam	oles: 262980001, 2	62980002, 262980003, 262980004	

Matrix: Water

METHOD BLANK: 15362

Associated Lab Samples: 262980001, 262980002, 262980003, 262980004

	Blank	Reporting			
Units	Result	Limit	MDL	Analyzed	Qualifiers
mg/L	ND	0.0030	0.00078	03/26/18 16:52	
mg/L	ND	0.0050	0.00057	03/26/18 16:52	
mg/L	ND	0.010	0.00078	03/26/18 16:52	
mg/L	ND	0.0030	0.000050	03/26/18 16:52	
mg/L	ND	0.040	0.0039	03/26/18 16:52	
mg/L	ND	0.0010	0.000093	03/26/18 16:52	
mg/L	ND	0.50	0.014	03/26/18 16:52	
mg/L	ND	0.010	0.0016	03/26/18 16:52	
mg/L	ND	0.010	0.00052	03/26/18 16:52	
mg/L	ND	0.0050	0.0013	03/26/18 16:52	
mg/L	ND	0.0050	0.00027	03/26/18 16:52	
mg/L	ND	0.0050	0.00095	03/26/18 16:52	
mg/L	ND	0.010	0.0014	03/26/18 16:52	
mg/L	ND	0.0050	0.00095	03/26/18 16:52	
mg/L	ND	0.0010	0.00014	03/26/18 16:52	
mg/L	ND	0.010	0.0019	03/26/18 16:52	
mg/L	ND	0.010	0.0021	03/26/18 16:52	
	Units mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Blank Units Result mg/L ND mg/L ND </td <td>Blank Reporting Limit mg/L ND 0.0030 mg/L ND 0.0050 mg/L ND 0.0030 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.010 mg/L ND 0.010 mg/L ND 0.010 mg/L ND 0.0050 mg/L ND 0.0050 mg/L ND 0.0050 mg/L ND 0.0050 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.010 mg/L ND 0.010 mg/L ND 0.010 <td< td=""><td>Blank Reporting Units Result Limit MDL mg/L ND 0.0030 0.00078 mg/L ND 0.0050 0.00057 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00078 mg/L ND 0.0030 0.000050 mg/L ND 0.040 0.0039 mg/L ND 0.010 0.00093 mg/L ND 0.010 0.000093 mg/L ND 0.010 0.00052 mg/L ND 0.010 0.00052 mg/L ND 0.010 0.00052 mg/L ND 0.0050 0.00027 mg/L ND 0.010 0.0014 mg/L ND 0.010 0.0014 mg/L ND 0.0010 0.0014 mg/L ND 0.010 0.0014</td><td>Blank Reporting Units Result Limit MDL Analyzed mg/L ND 0.0030 0.00078 03/26/18 16:52 mg/L ND 0.0050 0.00057 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.0030 0.000050 03/26/18 16:52 mg/L ND 0.040 0.0039 03/26/18 16:52 mg/L ND 0.010 0.00093 03/26/18 16:52 mg/L ND 0.010 0.0014 03/26/18 16:52 mg/L ND 0.010 0.0015 03/26/18 16:52 mg/L ND 0.010 0.0016 03/26/18 16:52 mg/L ND 0.010 0.0013 03/26/18 16:52 mg/L ND 0.010 0.0013 03/26/18 16:52</td></td<></td>	Blank Reporting Limit mg/L ND 0.0030 mg/L ND 0.0050 mg/L ND 0.0030 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.010 mg/L ND 0.010 mg/L ND 0.010 mg/L ND 0.0050 mg/L ND 0.0050 mg/L ND 0.0050 mg/L ND 0.0050 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.010 mg/L ND 0.010 mg/L ND 0.010 <td< td=""><td>Blank Reporting Units Result Limit MDL mg/L ND 0.0030 0.00078 mg/L ND 0.0050 0.00057 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00078 mg/L ND 0.0030 0.000050 mg/L ND 0.040 0.0039 mg/L ND 0.010 0.00093 mg/L ND 0.010 0.000093 mg/L ND 0.010 0.00052 mg/L ND 0.010 0.00052 mg/L ND 0.010 0.00052 mg/L ND 0.0050 0.00027 mg/L ND 0.010 0.0014 mg/L ND 0.010 0.0014 mg/L ND 0.0010 0.0014 mg/L ND 0.010 0.0014</td><td>Blank Reporting Units Result Limit MDL Analyzed mg/L ND 0.0030 0.00078 03/26/18 16:52 mg/L ND 0.0050 0.00057 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.0030 0.000050 03/26/18 16:52 mg/L ND 0.040 0.0039 03/26/18 16:52 mg/L ND 0.010 0.00093 03/26/18 16:52 mg/L ND 0.010 0.0014 03/26/18 16:52 mg/L ND 0.010 0.0015 03/26/18 16:52 mg/L ND 0.010 0.0016 03/26/18 16:52 mg/L ND 0.010 0.0013 03/26/18 16:52 mg/L ND 0.010 0.0013 03/26/18 16:52</td></td<>	Blank Reporting Units Result Limit MDL mg/L ND 0.0030 0.00078 mg/L ND 0.0050 0.00057 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00078 mg/L ND 0.0030 0.000050 mg/L ND 0.040 0.0039 mg/L ND 0.010 0.00093 mg/L ND 0.010 0.000093 mg/L ND 0.010 0.00052 mg/L ND 0.010 0.00052 mg/L ND 0.010 0.00052 mg/L ND 0.0050 0.00027 mg/L ND 0.010 0.0014 mg/L ND 0.010 0.0014 mg/L ND 0.0010 0.0014 mg/L ND 0.010 0.0014	Blank Reporting Units Result Limit MDL Analyzed mg/L ND 0.0030 0.00078 03/26/18 16:52 mg/L ND 0.0050 0.00057 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.0030 0.000050 03/26/18 16:52 mg/L ND 0.040 0.0039 03/26/18 16:52 mg/L ND 0.010 0.00093 03/26/18 16:52 mg/L ND 0.010 0.0014 03/26/18 16:52 mg/L ND 0.010 0.0015 03/26/18 16:52 mg/L ND 0.010 0.0016 03/26/18 16:52 mg/L ND 0.010 0.0013 03/26/18 16:52 mg/L ND 0.010 0.0013 03/26/18 16:52

LABORATORY CONTROL SAMPLE: 15363

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
				/01100		Qualifiero
Antimony	mg/L	.1	0.11	110	80-120	
Arsenic	mg/L	.1	0.10	102	80-120	
Barium	mg/L	.1	0.10	100	80-120	
Beryllium	mg/L	.1	0.11	111	80-120	
Boron	mg/L	1	1.1	111	80-120	
Cadmium	mg/L	.1	0.10	102	80-120	
Calcium	mg/L	1	1.1	108	80-120	
Chromium	mg/L	.1	0.11	107	80-120	
Cobalt	mg/L	.1	0.11	107	80-120	
Copper	mg/L	.1	0.11	107	80-120	
Lead	mg/L	.1	0.10	102	80-120	
Nickel	mg/L	.1	0.11	106	80-120	
Selenium	mg/L	.1	0.10	101	80-120	
Silver	mg/L	.1	0.090	90	80-120	
Thallium	mg/L	.1	0.10	102	80-120	
Vanadium	mg/L	.1	0.11	107	80-120	
Zinc	mg/L	.1	0.11	108	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 - Huffaker Road

Pace Project No.: 262980

MATRIX SPIKE & MATRIX SPIK	E DUPLIC	ATE: 15389			15390							
			MS	MSD								
		262980003	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	.1	.1	0.11	0.11	113	112	75-125	1	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	100	75-125	4	20	
Barium	mg/L	0.074	.1	.1	0.18	0.18	110	108	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	0.10	0.10	103	102	75-125	1	20	
Boron	mg/L	0.12	1	1	1.1	1.1	103	99	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.11	0.10	106	104	75-125	2	20	
Calcium	mg/L	45.9	1	1	48.0	47.9	214	205	75-125	0	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	108	104	75-125	3	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.11	107	106	75-125	1	20	
Copper	mg/L	ND	.1	.1	0.11	0.11	105	106	75-125	1	20	
Lead	mg/L	ND	.1	.1	0.10	0.10	102	100	75-125	3	20	
Nickel	mg/L	ND	.1	.1	0.11	0.11	107	106	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.098	104	98	75-125	6	20	
Silver	mg/L	ND	.1	.1	0.094	0.090	94	90	75-125	3	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	108	107	75-125	1	20	
Zinc	mg/L	ND	.1	.1	0.11	0.11	108	108	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 -	Huffaker Road					
Pace Project No.:	262980						
QC Batch:	403194		Analysis N	lethod:	SM 2540C		
QC Batch Method:	SM 2540C		Analysis D	Description:	2540C Total D	issolved Solids	
Associated Lab San	nples: 26298000	1, 262980002,	262980003, 26298	80004			
METHOD BLANK:	2236685		Matr	ix: Water			
Associated Lab San	nples: 26298000	1, 262980002,	262980003, 26298	0004			
			Blank	Reporting)		
Paran	neter	Units	Result	Limit	MDL	Analyze	ed Qualifiers
Total Dissolved Solid	ds	mg/L	Ν	D 2	5.0 2	25.0 03/26/18 1	3:30
LABORATORY COM	NTROL SAMPLE:	2236686					
			Spike	LCS	LCS	% Rec	
Paran	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Total Dissolved Solid	ds	mg/L	250	250	100	90-110	
SAMPLE DUPLICA	TE: 2236687						
			262978001	Dup		Max	
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers
Total Dissolved Solid	ds	mg/L	N	D	ND		5
SAMPLE DUPLICA	ΓE: 2236688						
			262960001	Dup		Max	
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers
Total Dissolved Solid	ds	mg/L	<25	.0	ND		5

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 - Huffaker Road

Pace Project No.:	262980
-------------------	--------

Associated Lab Samples:

QC Batch:	3105
QC Batch Method:	EPA 300.0

 00.0
 Analysis Description:
 300.0 IC Anions

 262980001, 262980002, 262980003, 262980004
 300.0 IC Anions

EPA 300.0

Analysis Method:

METHOD BLANK: 16004

		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	03/25/18 17:51	
Fluoride	mg/L	ND	0.30	0.029	03/25/18 17:51	
Sulfate	mg/L	ND	1.0	0.017	03/25/18 17:51	

Matrix: Water

LABORATORY CONTROL SAMPLE: 16005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.6	96	90-110	
Fluoride	mg/L	10	10.8	108	90-110	
Sulfate	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIK	ATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16006 16007											
			MS	MSD								
		262979001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.9	10	10	11.9	11.9	100	100	90-110	0	15	
Fluoride	mg/L	ND	10	10	11.4	11.4	113	114	90-110	1	15	M1
Sulfate	mg/L	37.5	10	10	43.8	43.8	64	64	90-110	0	15	M1

MATRIX SPIKE SAMPLE:	16008						
		262979002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	3.2	10	12.8	96	90-110	
Fluoride	mg/L	ND	10	10.5	105	90-110	
Sulfate	mg/L	77.4	10	94.1	167	90-110 E	

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 Road

Pace Project No.: 262980

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.

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

- 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 - Huffaker Road

Pace Project No.: 262980

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
262980001	EB-02	EPA 3005A	2942	EPA 6020B	3201
262980002	FB-02	EPA 3005A	2942	EPA 6020B	3201
262980003	GWC-18	EPA 3005A	2942	EPA 6020B	3201
262980004	GWC-6	EPA 3005A	2942	EPA 6020B	3201
262980001	EB-02	EPA 7470A	2968	EPA 7470A	3045
262980002	FB-02	EPA 7470A	2968	EPA 7470A	3045
262980003	GWC-18	EPA 7470A	2968	EPA 7470A	3045
262980004	GWC-6	EPA 7470A	2968	EPA 7470A	3045
262980001	EB-02	SM 2540C	403194		
262980002	FB-02	SM 2540C	403194		
262980003	GWC-18	SM 2540C	403194		
262980004	GWC-6	SM 2540C	403194		
262980001	EB-02	EPA 300.0	3105		
262980002	FB-02	EPA 300.0	3105		
262980003	GWC-18	EPA 300.0	3105		
262980004	GWC-6	EPA 300.0	3105		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

Section A		Section B				Sect	tion C									L				
Required	Client Information:	Required Project Infi	xmation:			Inva	ice Info	mation:							1		Page:	-	ð	
ompany.	: Georgia Power - Coal Combustion Residuals	Report To: Joju Ab	aham / Laure	1 Petty		Atter	ntion:	scsinv	roices(c	Southe	STICO.C	mo			-1					
ddress:	2480 Maner Road	Copy To: Geosyn	tec			ő	pany Na	TTI: E:									ļ			
	Allanta, GA 30339					Add	1ess:								ية (هلي		N. Regu	datory Age		
inail:	abraham@southemco.com	Purchase Order #:	SCS103486	8		Pao	a Quote:													
hone:	(404)506-7239 Fax	Project Name: Pi	ant Hammond	- Huffaker Ro	B	Pag	e Project	Manage	۵ ب	lsy.moda	miel@ps	celabs.ct	Ę			調査の時間	この日本語	fe'i Locatio		
tequester	d Due Dete: Standard TAT	Project #:				Pac	a Profile	# 8	8.3									g		
												- Caller Re	Duceted	Analysis	Filtered					
	And Tau	(Ja) of (COLLECTED				Prese	rvative	ŝ	RN/X	NN	1	147	123	19 18	<u></u>			
	Dizabagi Mastaw Mastaw Product					OLIO					199	(0)8)5	91 811 1 2		Ŕ	31		(N/L)		
	One Character per box.	-0) 3(06) 30	STAR			NINERS	p				1/801	10C	'epuon	Ź	6]			ernoin		
# Wat	(A.Z. 0.9 l, .) ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	2 2 5 ATRIX COL				OF CONTA	SSO4 Ubtesetve	ICI IAO3	HOB	lonsritel	VIANA,	DS PÀ S2 Vereiere (Vol		2						
	FR-02	° U ™ 3`	one sk. ko č	830 3 / 1.	() 0840 -	, , ,	1 7	-	1			7						Dot	N 1657	
	FB02	124	B/L / 12 0	J45 3/k	085	3	2	-			1	2			_		$\overline{\square}$			
	GWC - 18	10	361 / 18 (c	35 3/4/	6 1038	32	17	-				۲	—							
	GWC-6	3-7-	3/1/18/12	15 3/w	52218	3	2	-				27,	~					7		
						\mathbf{H}					+				Ţ.					
a de												'	_				\uparrow	ļ		
				Anadar			Į	ӡ		¥	6	9	4	$\left \right $						
					Y	H	P1		1					Ŝ		20	Ő	l e		
				14									-		•					
Ö								<u> </u>			/ T						-			
											 			2629(l @					
12						H		╞┼╴				+			-	_				
		E CARENOU	SHED BY / AFF	LATION	DATE:		TIME		A. Sta	CEPTED	N/M	LIATION		影響	ATEL	THE		NAMPS	commode	
		Molia	which	z	1/21/00	8 15	25		Jø.	2	ę			3	818	15'2	٦٢			
						-	ł	Ľ	[]``	ß		111	1	1	1610	イン	2			
					•	•		•		;			,	1)	•	•	

Page 16 of 17

Received (Y/N) Custody Cooler (Y/N) Custody Cooler (Y/N)

о ч чмэт

2012 DATE Signer: 03 / 16 / 18

MUSLUS

Noelia

SAMPLER NAME AND SIGNATURE

SIGNATURE OF SAMPLER: MOLLIC Which

2

۶

5

7,2

uo

						ಪ್
Sa	mple C	ond	ition	Upon Receipt		
Pace Analytical	6	1	. 0)	Project #	
	: <u> </u>	GA	<u> </u>	ower		
		h Dmme	arcial		WU# · 202900	
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		PN: BN Due Date:	03/26/18
Custody Seal on Cooler/Box Present:yes	Пл	þ	Seals	intact: 🖌 yes 🗆	CLIENT: GRPouer-CCR	
Packing Material: Hubble Wrap Bubble	e Bags	Пи	one _	Other		
Thermometer Used 85	- Туре с	f Ice:	Wet	Blue None	Samples on ice, cooling process has begu	n
Cooles Temperature U:)	Biolog	ical T	issue	is Frozen: Yes No	Date and Initials of person examining	9
Temp should be above freezing to 6°C	-			Comments:	Conteriors.	
Chain of Custody Present:	Pres			1		
Chain of Custody Filled Out:	TYes	□No	□n/A	2.		
Chain of Custody Relinquished:	Yes			3.		
Sampler Name & Signature on COC:	_ElYes			4.		
Samples Arrived within Hold Time:	Yes			5.		
Short Hold Time Analysis (<72hr):	Yes	EN:0	□n/A	6.		
Rush Turn Around Time Requested:	□ Yes		⊡n/A	7.		
Sufficient Volume:	-TYes			8.		
Correct Containers Used:	Yes			9.		
-Pace Containers Used:	· · · · · · · · · · · · · · · · · · ·					
Containers Intact:	Yes			10.		
Filtered volume received for Dissolved tests	□Yes			11.		
Sample Labels match COC:	-EYes			12.		
-Includes date/time/ID/Analysis Matrix:	<u> </u>	2			•	
All containers needing preservation have been checked.				13		
All containers needing preservation are found to be in	Jarras					
	<u> </u>			Initial when	Lot # of added	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	∐Yes	en lo		completed	preservative	 +{
Samples checked for dechlorination:	□Yes		-EIN/A	14		
Headspace in VOA Vials (>6mm):	□Yəs	⊡No	JENIA	15.		_+
Trip Blank Present:	∐Yes	٥N⊑	2N/A	16		
Trip Blank Custody Seals Present	□Yes	⊡ No]	,	
Pace Trip Blank Lot # (if purchased):						
Client Notification/ Resolution:		•			Field Data Required? Y / N	T
Person Contacted:			_Date/	Time.		
Comments/ Resolution:						
		ļ				
		<u> </u>				
						- +-
						
						<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 empliance sciences,



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

March 30, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 262982

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 16, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc.





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 262982

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204

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



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Lab ID	Sample ID	Matrix	Date Collected	Date Received
262982001	GWA-3	Water	03/15/18 10:30	03/16/18 17:30
262982002	GWA-4	Water	03/15/18 11:28	03/16/18 17:30
262982003	GWA-11	Water	03/15/18 12:42	03/16/18 17:30
262982004	GWC-10	Water	03/15/18 13:43	03/16/18 17:30
262982005	GWC-22	Water	03/15/18 15:29	03/16/18 17:30
262982006	GWC-21	Water	03/15/18 16:20	03/16/18 17:30
262982007	GWC-19	Water	03/15/18 17:28	03/16/18 17:30



SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
262982001	GWA-3	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262982002	GWA-4	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262982003	GWA-11	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262982004	GWC-10	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262982005	GWC-22	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262982006	GWC-21	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262982007	GWC-19	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWA-3	Lab ID:	262982001	Collecte	ed: 03/15/18	8 10:30	Received: 03/	'16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 18:29	7440-36-0	
Arsenic	0.00066J	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 18:29	7440-38-2	
Barium	0.17	mg/L	0.050	0.0039	5	03/22/18 11:15	03/30/18 12:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 18:29	7440-41-7	
Boron	0.14	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 18:29	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 18:29	7440-43-9	
Calcium	83.5	mg/L	25.0	0.69	50	03/22/18 11:15	03/26/18 18:34	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 18:29	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 18:29	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 18:29	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 18:29	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 18:29	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 18:29	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 18:29	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 18:29	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 18:29	7440-62-2	
Zinc	0.0028J	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 18:29	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	thod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 11:33	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	448	mg/L	50.0	50.0	1		03/22/18 09:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	3.8	mg/L	0.25	0.024	1		03/25/18 19:55	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/25/18 19:55	16984-48-8	
Sulfate	119	mg/L	10.0	0.17	10		03/26/18 22:04	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWA-4	Lab ID:	262982002	Collecte	ed: 03/15/18	8 11:28	Received: 03/	16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 18:40	7440-36-0	
Arsenic	0.0014J	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 18:40	7440-38-2	
Barium	0.040	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 18:40	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 18:40	7440-41-7	
Boron	0.043	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 18:40	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 18:40	7440-43-9	
Calcium	69.9	mg/L	25.0	0.69	50	03/22/18 11:15	03/26/18 18:46	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 18:40	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 18:40	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 18:40	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 18:40	7439-92-1	
Nickel	0.0024J	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 18:40	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 18:40	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 18:40	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 18:40	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 18:40	7440-62-2	
Zinc	0.0041J	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 18:40	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 11:52	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	381	mg/L	25.0	25.0	1		03/22/18 09:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.7	mg/L	0.25	0.024	1		03/25/18 20:15	16887-00-6	
Fluoride	0.40	mg/L	0.30	0.029	1		03/25/18 20:15	16984-48-8	
Sulfate	167	mg/L	10.0	0.17	10		03/26/18 22:25	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWA-11	Lab ID:	262982003	Collecte	ed: 03/15/18	8 12:42	Received: 03/	16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 18:51	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 18:51	7440-38-2	
Barium	0.031	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 18:51	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 18:51	7440-41-7	
Boron	0.037J	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 18:51	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 18:51	7440-43-9	
Calcium	ND	mg/L	25.0	0.69	50	03/22/18 11:15	03/26/18 18:57	7440-70-2	D3
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 18:51	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 18:51	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 18:51	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 18:51	7439-92-1	
Nickel	0.0026J	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 18:51	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 18:51	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 18:51	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 18:51	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 18:51	7440-62-2	
Zinc	0.0042J	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 18:51	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	thod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 11:54	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	115	mg/L	25.0	25.0	1		03/22/18 09:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.6	mg/L	0.25	0.024	1		03/25/18 20:36	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/25/18 20:36	16984-48-8	
Sulfate	12.2	mg/L	1.0	0.017	1		03/25/18 20:36	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWC-10	Lab ID:	262982004	Collecte	ed: 03/15/1	8 13:43	Received: 03/	16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 19:14	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 19:14	7440-38-2	
Barium	0.18	mg/L	0.050	0.0039	5	03/22/18 11:15	03/30/18 13:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 19:14	7440-41-7	
Boron	0.038J	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 19:14	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 19:14	7440-43-9	
Calcium	52.4	mg/L	25.0	0.69	50	03/22/18 11:15	03/26/18 19:20	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 19:14	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 19:14	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 19:14	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 19:14	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 19:14	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 19:14	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 19:14	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 19:14	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 19:14	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 19:14	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EP	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 11:56	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	216	mg/L	25.0	25.0	1		03/22/18 09:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.0	mg/L	0.25	0.024	1		03/25/18 20:57	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/25/18 20:57	16984-48-8	
Sulfate	33.9	mg/L	1.0	0.017	1		03/25/18 20:57	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWC-22	Lab ID:	262982005	Collecte	ed: 03/15/1	8 15:29	Received: 03/	/16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 19:26	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 19:26	7440-38-2	
Barium	0.096	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 19:26	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 19:26	7440-41-7	
Boron	0.070	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 19:26	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 19:26	7440-43-9	
Calcium	46.8	mg/L	25.0	0.69	50	03/22/18 11:15	03/26/18 19:31	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 19:26	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 19:26	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 19:26	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 19:26	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 19:26	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 19:26	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 19:26	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 19:26	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 19:26	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 19:26	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Me	hod: EP	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 11:59	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	190	mg/L	25.0	25.0	1		03/22/18 09:17		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.7	mg/L	0.25	0.024	1		03/25/18 21:38	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/25/18 21:38	16984-48-8	
Sulfate	8.2	mg/L	1.0	0.017	1		03/25/18 21:38	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWC-21	Lab ID:	262982006	Collecte	ed: 03/15/1	8 16:20	Received: 03/	/16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 19:37	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 19:37	7440-38-2	
Barium	0.086	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 19:37	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 19:37	7440-41-7	
Boron	0.025J	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 19:37	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 19:37	7440-43-9	
Calcium	62.8	mg/L	25.0	0.69	50	03/22/18 11:15	03/26/18 19:43	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 19:37	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 19:37	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 19:37	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 19:37	7439-92-1	
Nickel	0.0026J	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 19:37	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 19:37	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 19:37	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 19:37	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 19:37	7440-62-2	
Zinc	0.0053J	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 19:37	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 12:01	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	219	mg/L	25.0	25.0	1		03/22/18 09:17		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	3.6	mg/L	0.25	0.024	1		03/25/18 21:59	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/25/18 21:59	16984-48-8	
Sulfate	38.0	ma/L	1.0	0.017	1		03/25/18 21:59	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWC-19	Lab ID:	262982007	Collecte	ed: 03/15/1	8 17:28	Received: 03/	/16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 19:49	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 19:49	7440-38-2	
Barium	0.14	mg/L	0.050	0.0039	5	03/22/18 11:15	03/30/18 13:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 19:49	7440-41-7	
Boron	0.17	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 19:49	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 19:49	7440-43-9	
Calcium	43.3	mg/L	0.50	0.069	5	03/22/18 11:15	03/30/18 13:07	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 19:49	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 19:49	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 19:49	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 19:49	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 19:49	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 19:49	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 19:49	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 19:49	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 19:49	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 19:49	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Me	thod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 12:03	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	213	mg/L	25.0	25.0	1		03/22/18 09:18		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.9	mg/L	0.25	0.024	1		03/25/18 23:42	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/25/18 23:42	16984-48-8	
Sulfate	14.8	ma/L	1.0	0.017	1		03/25/18 23:42	14808-79-8	



Project:	Plant Hammond	d - Huffaker Road												
Pace Project No.: 262982														
QC Batch:	2968		Analysi	s Method:	: E	PA 7470A								
QC Batch Method:	EPA 7470A		Analysi	s Descript	tion: 7	470 Mercury	/							
Associated Lab Sar	nples: 262982	001, 262982002, 262	982003, 262	2982004, 2	262982005	5, 262982006	6, 2629820	07						
METHOD BLANK:	15501		Μ	latrix: Wa	ter									
Associated Lab Sar	nples: 262982	001, 262982002, 262	982003, 262	2982004, 2	262982005	5, 262982006	6, 2629820	07						
			Blank	R	eporting									
Parar	neter	Units	Result	:	Limit	MDL	/	Analyzed	Qua	alifiers				
Mercury		mg/L		ND	0.00020	0.000	0036 03/2	23/18 11:12	2					
LABORATORY CO	NTROL SAMPLE	: 15502												
			Spike	LCS	3	LCS	% Rec	;						
Parar	neter	Units	Conc.	Resu	ılt	% Rec	Limits	Qı	alifiers					
Mercury		mg/L	.0025	0	.0026	104	80	-120		-				
MATRIX SPIKE & N	IATRIX SPIKE D	UPLICATE: 15503	i		15504									
			MS	MSD										
		262980004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max			
Paramete	er l	Jnits Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual		
Mercury	r	ng/L ND	.0025	.0025	0.0027	0.0027	110	110	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 - Huffaker Road

Pace Project No.: 262982

QC Batch:	2942			An	alysis Methoo	d:	EPA	A 6020B	
QC Batch Method:	EPA 3	005A		An	alysis Descrip	otion:	602	20B MET	
Associated Lab Samp	oles:	262982001,	262982002,	262982003	, 262982004,	2629820	05, 2	262982006,	262982007

METHOD BLANK: 15362

Matrix: Water

Associated Lab Samples: 262982001, 262982002, 262982003, 262982004, 262982005, 262982006, 262982007

	Blank	Reporting			
Units	Result	Limit	MDL	Analyzed	Qualifiers
mg/L	ND	0.0030	0.00078	03/26/18 16:52	
mg/L	ND	0.0050	0.00057	03/26/18 16:52	
mg/L	ND	0.010	0.00078	03/26/18 16:52	
mg/L	ND	0.0030	0.000050	03/26/18 16:52	
mg/L	ND	0.040	0.0039	03/26/18 16:52	
mg/L	ND	0.0010	0.000093	03/26/18 16:52	
mg/L	ND	0.50	0.014	03/26/18 16:52	
mg/L	ND	0.010	0.0016	03/26/18 16:52	
mg/L	ND	0.010	0.00052	03/26/18 16:52	
mg/L	ND	0.0050	0.0013	03/26/18 16:52	
mg/L	ND	0.0050	0.00027	03/26/18 16:52	
mg/L	ND	0.0050	0.00095	03/26/18 16:52	
mg/L	ND	0.010	0.0014	03/26/18 16:52	
mg/L	ND	0.0050	0.00095	03/26/18 16:52	
mg/L	ND	0.0010	0.00014	03/26/18 16:52	
mg/L	ND	0.010	0.0019	03/26/18 16:52	
mg/L	ND	0.010	0.0021	03/26/18 16:52	
	Units mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Blank Units Result Mg/L ND	Blank Reporting Units Result Limit mg/L ND 0.0030 mg/L ND 0.0050 mg/L ND 0.0030 mg/L ND 0.0030 mg/L ND 0.0030 mg/L ND 0.0030 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.010 mg/L ND 0.010 mg/L ND 0.0050 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.0010 mg/L ND 0.010 mg/L ND 0.010 mg/L ND 0.010	Units Result Limit MDL mg/L ND 0.0030 0.00078 mg/L ND 0.0050 0.00057 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00093 mg/L ND 0.040 0.00093 mg/L ND 0.010 0.00093 mg/L ND 0.010 0.00052 mg/L ND 0.010 0.00052 mg/L ND 0.0050 0.00027 mg/L ND 0.0050 0.00095 mg/L ND 0.010 0.0014 mg/L ND 0.0010 0.00014 mg/L ND 0.010 0.0014 mg/L ND 0.010	Units Result Limit MDL Analyzed mg/L ND 0.0030 0.00078 03/26/18 16:52 mg/L ND 0.0050 0.00057 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.010 0.00078 03/26/18 16:52 mg/L ND 0.0030 0.00050 03/26/18 16:52 mg/L ND 0.040 0.0039 03/26/18 16:52 mg/L ND 0.040 0.00093 03/26/18 16:52 mg/L ND 0.010 0.00093 03/26/18 16:52 mg/L ND 0.010 0.00093 03/26/18 16:52 mg/L ND 0.010 0.0016 03/26/18 16:52 mg/L ND 0.010 0.0015 03/26/18 16:52 mg/L ND 0.010 0.0013 03/26/18 16:52 mg/L ND 0.0100 0.0014 03/26/18 16:52 mg/L ND 0.0100

LABORATORY CONTROL SAMPLE: 15363

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
			0.44		00.400		
Antimony	mg/L	.1	0.11	110	80-120		
Arsenic	mg/L	.1	0.10	102	80-120		
Barium	mg/L	.1	0.10	100	80-120		
Beryllium	mg/L	.1	0.11	111	80-120		
Boron	mg/L	1	1.1	111	80-120		
Cadmium	mg/L	.1	0.10	102	80-120		
Calcium	mg/L	1	1.1	108	80-120		
Chromium	mg/L	.1	0.11	107	80-120		
Cobalt	mg/L	.1	0.11	107	80-120		
Copper	mg/L	.1	0.11	107	80-120		
Lead	mg/L	.1	0.10	102	80-120		
Nickel	mg/L	.1	0.11	106	80-120		
Selenium	mg/L	.1	0.10	101	80-120		
Silver	mg/L	.1	0.090	90	80-120		
Thallium	mg/L	.1	0.10	102	80-120		
Vanadium	mg/L	.1	0.11	107	80-120		
Zinc	mg/L	.1	0.11	108	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 - Huffaker Road

Pace Project No.: 262982

MATRIX SPIKE & MATRIX SPIK	E DUPLIC	ATE: 15389			15390							
			MS	MSD								
		262980003	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	.1	.1	0.11	0.11	113	112	75-125	1	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	100	75-125	4	20	
Barium	mg/L	0.074	.1	.1	0.18	0.18	110	108	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	0.10	0.10	103	102	75-125	1	20	
Boron	mg/L	0.12	1	1	1.1	1.1	103	99	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.11	0.10	106	104	75-125	2	20	
Calcium	mg/L	45.9	1	1	48.0	47.9	214	205	75-125	0	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	108	104	75-125	3	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.11	107	106	75-125	1	20	
Copper	mg/L	ND	.1	.1	0.11	0.11	105	106	75-125	1	20	
Lead	mg/L	ND	.1	.1	0.10	0.10	102	100	75-125	3	20	
Nickel	mg/L	ND	.1	.1	0.11	0.11	107	106	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.098	104	98	75-125	6	20	
Silver	mg/L	ND	.1	.1	0.094	0.090	94	90	75-125	3	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	108	107	75-125	1	20	
Zinc	mg/L	ND	.1	.1	0.11	0.11	108	108	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 -	Huffaker Road						
Pace Project No.:	262982							
QC Batch:	403061		Analysis N	lethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total Di	ssolved Solids		
Associated Lab San	nples: 26298200	01, 262982002, 262	982003, 26298	2004, 2629820	05, 262982006,	262982007		
METHOD BLANK:	2235790		Matri	ix: Water				
Associated Lab San	nples: 26298200	01, 262982002, 262	982003, 26298 Blank	2004, 2629820 Reporting	05, 262982006,	262982007		
Paran	neter	Units	Result	Limit	MDL	Analyz	ed Qualifiers	
Total Dissolved Solie	ds	mg/L	NI	D 25	5.0 2	03/26/18	13:30	
LABORATORY COM	NTROL SAMPLE:	2235791						
Paran	neter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
Total Dissolved Solie	ds	mg/L	250	268	107	90-110		
SAMPLE DUPLICA	TE: 2235792							
			262983002	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Solid	ds	mg/L	NI	1 D	ND		5	
SAMPLE DUPLICA	TE: 2235793							
			262982006	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Solid	ds	mg/L	21	9 2	29	4	5	

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



Project:	Plant Hamn	nond - Huff	aker Road										
Pace Project No.:	262982												
QC Batch:	3105			Analys	is Method	: El	PA 300.0						
QC Batch Method:	EPA 300.0)		Analysi	is Descrip	tion: 30	0.0 IC Anio	ns					
Associated Lab Sa	mples: 262	982001, 20	62982002, 262	982003, 262	2982004,	262982005,	262982006	6, 2629820	07				
METHOD BLANK:	16004			N	latrix: Wa	ter							
Associated Lab Sa	mples: 262	982001, 20	62982002, 262	982003, 262	2982004,	262982005,	262982006	6, 2629820	07				
				Blank	R	eporting							
Para	meter		Units	Result	t	Limit	MDL	A	Analyzed	Qua	alifiers		
Chloride			mg/L		ND	0.25	0	.024 03/2	25/18 17:51				
Fluoride			mg/L		ND	0.30	0	.029 03/2	25/18 17:51				
Sulfate			mg/L		ND	1.0	0	.017 03/2	25/18 17:51				
LABORATORY CO	NTROL SAM	PLE: 160	005										
				Spike	LCS	6	LCS	% Rec	;				
Para	meter		Units	Conc.	Resu	ult	% Rec	Limits	Qı	alifiers			
Chloride			mg/L	10		9.6	96	90	-110		•		
Fluoride			mg/L	10		10.8	108	90	-110				
Sulfate			mg/L	10		10.5	105	90	-110				
			ATE: 16006			16007							
			ATE. 10000	MS	MSD	10007							
			262979001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramet	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride		mg/L	1.9	10	10	11.9	11.9	100	100	90-110	0	15	
Fluoride		mg/L	ND	10	10	11.4	11.4	113	114	90-110	1	15	M1
Sulfate		mg/L	37.5	10	10	43.8	43.8	64	64	90-110	0	15	M1
MATRIX SPIKE SA	MPLE:	160	008										
_				262979	9002	Spike	MS	М	S	% Rec			
Para	meter		Units	Resu	ult	Conc.	Result	% F	Rec	Limits		Quali	fiers
Chloride			mg/L		3.2	10	12	2.8	96	90-	110		
Fluoride			mg/L		ND	10	10).5	105	90-	110		
					77 /	40	~ ~	4	167	00 /			

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

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 Road

Pace Project No.: 262982

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.

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

- D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- 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 - Huffaker Road

Pace Project No.: 262982

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
262982001	GWA-3	EPA 3005A	2942	EPA 6020B	3201
262982002	GWA-4	EPA 3005A	2942	EPA 6020B	3201
262982003	GWA-11	EPA 3005A	2942	EPA 6020B	3201
262982004	GWC-10	EPA 3005A	2942	EPA 6020B	3201
262982005	GWC-22	EPA 3005A	2942	EPA 6020B	3201
262982006	GWC-21	EPA 3005A	2942	EPA 6020B	3201
262982007	GWC-19	EPA 3005A	2942	EPA 6020B	3201
262982001	GWA-3	EPA 7470A	2968	EPA 7470A	3045
262982002	GWA-4	EPA 7470A	2968	EPA 7470A	3045
262982003	GWA-11	EPA 7470A	2968	EPA 7470A	3045
262982004	GWC-10	EPA 7470A	2968	EPA 7470A	3045
262982005	GWC-22	EPA 7470A	2968	EPA 7470A	3045
262982006	GWC-21	EPA 7470A	2968	EPA 7470A	3045
262982007	GWC-19	EPA 7470A	2968	EPA 7470A	3045
262982001	GWA-3	SM 2540C	403061		
262982002	GWA-4	SM 2540C	403061		
262982003	GWA-11	SM 2540C	403061		
262982004	GWC-10	SM 2540C	403061		
262982005	GWC-22	SM 2540C	403061		
262982006	GWC-21	SM 2540C	403061		
262982007	GWC-19	SM 2540C	403061		
262982001	GWA-3	EPA 300.0	3105		
262982002	GWA-4	EPA 300.0	3105		
262982003	GWA-11	EPA 300.0	3105		
262982004	GWC-10	EPA 300.0	3105		
262982005	GWC-22	EPA 300.0	3105		
262982006	GWC-21	EPA 300.0	3105		
262982007	GWC-19	EPA 300.0	3105		

Semple Intact (Y/V) A STATE CONDICT 9 IN/A) M0#:262982 Cooler TeleoO δ 2 pojsno Regulatory Agency (N/A) A State / Location > 85 Receiv 3 õ Residual Chiorine (Y/V) ∕ک 2 N 2 ٦ 2 R D H HWELL Page: DETI CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. DUTE THE S 3/15/16/20.40 00:61 262982 Recorded Analysis Fittered (YM 8 3 b3/15/13 DATE Signed: 3/15/20/8 1 SNE. 7-77-6 2/16/ man NN etallu2.ebhoul7.ebhold > betsy.modaniel@pacelabs.com, > > ACCEPTED BY LAFELATION > > D2 PA 5240C > scsinvoices@southemco.com 2 (etal2 + III .qqA) stateM > 7 \mathbf{r} Analysees Teet N/A Wollia M heruc 2010 lonardel EO2S28 Preservatives 104235 HOal Pace Quote: Pace Project Manager. Pace Profile #: 328.3 IDH Section C Invoice Information: CONH の間が 0n;02 81/51/69 15:22 Attention: Company Nan **5092** cro:bl 81/2/ko 20 Address: bevieserqnl N ç, 2 2 2 3 も SANTER NAME AND SIGNATURE ~~ V:4 \sim OF CONTAINERS ŝ <u>~</u> m Name of SAMPLER: 65/035 ATJDRE of SAMPLER: *<u> 3/6/*18-</u> d:30 3 de.h sip AMPLE TEMP AT COLLECTION 50 17:28 12 C /12/18 19:14 /1/2/18 11:50 10:30 4:21 12:43 6 715/18 15.24 3/15/18 15:29 11:26 **N** 0]hs/18 3/15/18 His/18 1 Purchase Order # SCS10348606 Project Name: Plant Hammond - Huffaker Road Project #: 3/5/18 DATE Hohe COLLECTED RESIGNED BY / AFLANON **SAM** 12:32 W5/18 117:20 Report To: Joju Abraham / Lauren Pethy Jo:20 5 2 2 2 11:23 L dist Muleus 214 START 3/15/18 His/B 3//2//2 Shs/iB Required Project Information: Copy To: Geosyntec Ś 6 ৩ ollia (9MOD=D BARD=D) 39YT 3J9MAB ৬ J. Ę ፶ 互 Ē F E ç (Tel of seboo bilav ees) EGOD XIATA 5 Section B 8872 * * 98 * 6 * MATTRUK Detrabing Weizer Wastis Weizer Product Solfsolid Od Solfsolid Afr Afr Chiele Titaue Georgia Power - Coal Combustion Residuals 2480 Marner Road TAT ADDITIONAL COLUMENTS (A-Z, 0-9 / , -) Sample Ids must be unique Atanta, GA 30339 jabraham@southemco.com SAMPLE ID One Character per box. Ĕ Phone: (404)506-7239 F Requested Due Date: 57/4/0/9/RD GWC-19 Required Client Information: GWC-22 Accentration E-MM-3 6WC-10 6WC - 21 6 WA - 11 H-MM9 Company jection A 2.5 1 £105 ingry) Liac Sura 2.5 S.C. 6 1.**2**% Email h # []] Page 19 of 20

and the second secon					
Sa	imple Co	onditior	n Upon Receipt		
Pace Analytical Oliont North	. G		Dandon	Decident #	
	e:_ <u>/7(</u>	FX /	·		
Courier:` [] Fed Ex [] UPS [] USPS [] Clie	ant LCo	mmercial	Pace Other	WO#:262982	
Tracking #:			· /	PM: BM Due Date:	03/26/18
Custody Seal on Cooler/Box Present:	i 🗌 no	Seals	i intact: 🖉 yes [CLIENT: GAPower-CCR	
Packing Material: Bubble Wrap Bubble	e Bags [] None	Other		
Thermometer Used 33	Type of	Ice: Wet) Blue None [Samples on ice, cooling process has begun	
Cooler Temperature 1.9	Biologi	al Tissue	Is Frozen: Yes No	Date and Initials of person examining contents: 5/16/18 MK	2
Chain of Quetadu Branatt				- 1	4
Chain of Custody Present:			<u></u>	· · · · · · · · · · · · · · · · · · ·	-
Chain of Custody Filled Out:			2.		-
			<i>.</i>		
Sampler Name & Signature on COC:			5		-
			5. C		-
Short Hold Time Analysis (2017):</td <td></td> <td></td> <td>7</td> <td></td> <td>-1</td>			7		-1
Rush Turn Around Time Requested:					-1
Correct Contailing Lland:			a		-
			5.		
-Face Containers Used.			10		
Eillered volume received for Dissolved tests			11.		-
Sample Labels match COC			12.		
Includes date/lime/ID/Analysis Matrix	u	P		-	
All containers needing preservation have been checked.	-2793 C		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	completed	preservative	
Samples checked for dechlorination:	🗆 Yes 🖸		14.		
Headspace in VOA Vials (>6mm):	□Yes 〔		15.		
Trip Blank Present:	OYes C	NO ENIA	16.		
Trip Blank Custody Seals Present	🗆 Yes 🖸	NO ZNUA	T	•	
Pace Trip Blank Lot # (if purchased):	<u></u>				
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

March 30, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 262983

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 16, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc.





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 262983

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204

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



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Lab ID	Sample ID	Matrix	Date Collected	Date Received
262983001	EB-01	Water	03/15/18 10:27	03/16/18 17:30
262983002	FB-01	Water	03/15/18 10:45	03/16/18 17:30
262983003	GWC-23	Water	03/15/18 14:20	03/16/18 17:30
262983004	FD-02	Water	03/15/18 00:00	03/16/18 17:30
262983005	GWC-7	Water	03/15/18 17:10	03/16/18 17:30
262983006	GWC-9	Water	03/15/18 18:35	03/16/18 17:30



SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
262983001	EB-01	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262983002	FB-01	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262983003	GWC-23	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262983004	FD-02	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262983005	GWC-7	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
262983006	GWC-9	EPA 6020B	CSW	17	PASI-GA
		EPA 7470A	MTC	1	PASI-GA
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: EB-01	Lab ID:	262983001	Collecte	ed: 03/15/1	8 10:27	Received: 03/	16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 20:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 20:00	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 20:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 20:00	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 20:00	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 20:00	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	03/22/18 11:15	03/26/18 20:00	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 20:00	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 20:00	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 20:00	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 20:00	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:00	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 20:00	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:00	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 20:00	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 20:00	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 20:00	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Me	thod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 12:06	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		03/21/18 17:19		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	ND	mg/L	0.25	0.024	1		03/26/18 00:03	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/26/18 00:03	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		03/26/18 00:03	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: FB-01	Lab ID:	262983002	Collecte	ed: 03/15/18	8 10:45	Received: 03/	/16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 20:06	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 20:06	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 20:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 20:06	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 20:06	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 20:06	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	03/22/18 11:15	03/26/18 20:06	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 20:06	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 20:06	7440-48-4	
Copper	0.0032J	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 20:06	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 20:06	7439-92-1	
Nickel	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:06	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 20:06	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:06	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 20:06	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 20:06	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 20:06	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	thod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 12:08	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		03/22/18 09:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	ND	mg/L	0.25	0.024	1		03/26/18 00:24	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/26/18 00:24	16984-48-8	
Sulfate	ND	ma/L	1.0	0.017	1		03/26/18 00:24	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: GWC-23	Lab ID:	262983003	Collecte	ed: 03/15/1	8 14:20	Received: 03/	16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 20:23	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 20:23	7440-38-2	
Barium	0.053	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 20:23	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 20:23	7440-41-7	
Boron	0.051	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 20:23	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 20:23	7440-43-9	
Calcium	39.8	mg/L	25.0	0.69	50	03/22/18 11:15	03/26/18 20:29	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 20:23	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 20:23	7440-48-4	
Copper	0.0016J	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 20:23	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 20:23	7439-92-1	
Nickel	0.0010J	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:23	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 20:23	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:23	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 20:23	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 20:23	7440-62-2	
Zinc	0.0039J	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 20:23	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 12:11	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	169	mg/L	25.0	25.0	1		03/22/18 09:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.6	mg/L	0.25	0.024	1		03/26/18 00:44	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/26/18 00:44	16984-48-8	
Sulfate	14.0	ma/L	1.0	0.017	1		03/26/18 00:44	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: FD-02	Lab ID:	262983004	Collecte	ed: 03/15/1	8 00:00	Received: 03/	16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 20:34	7440-36-0	
Arsenic	0.0036J	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 20:34	7440-38-2	
Barium	0.15	mg/L	0.050	0.0039	5	03/22/18 11:15	03/30/18 13:13	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 20:34	7440-41-7	
Boron	0.052	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 20:34	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 20:34	7440-43-9	
Calcium	44.4	mg/L	0.50	0.069	5	03/22/18 11:15	03/30/18 13:13	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 20:34	7440-47-3	
Cobalt	0.013	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 20:34	7440-48-4	
Copper	0.0014J	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 20:34	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 20:34	7439-92-1	
Nickel	0.053	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:34	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 20:34	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:34	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 20:34	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 20:34	7440-62-2	
Zinc	0.11	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 20:34	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Me	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 12:13	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	260	mg/L	25.0	25.0	1		03/22/18 09:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.9	mg/L	0.25	0.024	1		03/26/18 01:05	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/26/18 01:05	16984-48-8	
Sulfate	114	mg/L	10.0	0.17	10		03/26/18 22:46	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: GWC-7	Lab ID:	262983005	Collecte	ed: 03/15/1	8 17:10	Received: 03/	16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 20:46	7440-36-0	
Arsenic	0.0037J	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 20:46	7440-38-2	
Barium	0.15	mg/L	0.050	0.0039	5	03/22/18 11:15	03/30/18 13:19	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 20:46	7440-41-7	
Boron	0.053	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 20:46	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 20:46	7440-43-9	
Calcium	43.4	mg/L	0.50	0.069	5	03/22/18 11:15	03/30/18 13:19	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 20:46	7440-47-3	
Cobalt	0.014	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 20:46	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 20:46	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 20:46	7439-92-1	
Nickel	0.057	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:46	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 20:46	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:46	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 20:46	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 20:46	7440-62-2	
Zinc	0.12	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 20:46	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	thod: EP	A 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 12:20	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	254	mg/L	25.0	25.0	1		03/22/18 09:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.9	mg/L	0.25	0.024	1		03/26/18 01:46	16887-00-6	
Fluoride	0.37	mg/L	0.30	0.029	1		03/26/18 01:46	16984-48-8	
Sulfate	118	mg/L	10.0	0.17	10		03/26/18 23:06	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: GWC-9	Lab ID:	262983006	Collecte	ed: 03/15/1	8 18:35	Received: 03/	16/18 17:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	03/22/18 11:15	03/26/18 20:57	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/22/18 11:15	03/26/18 20:57	7440-38-2	
Barium	0.062	mg/L	0.010	0.00078	1	03/22/18 11:15	03/26/18 20:57	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/22/18 11:15	03/26/18 20:57	7440-41-7	
Boron	0.013J	mg/L	0.040	0.0039	1	03/22/18 11:15	03/26/18 20:57	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/22/18 11:15	03/26/18 20:57	7440-43-9	
Calcium	35.3	mg/L	25.0	0.69	50	03/22/18 11:15	03/26/18 21:03	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/22/18 11:15	03/26/18 20:57	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/22/18 11:15	03/26/18 20:57	7440-48-4	
Copper	ND	mg/L	0.0050	0.0013	1	03/22/18 11:15	03/26/18 20:57	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	03/22/18 11:15	03/26/18 20:57	7439-92-1	
Nickel	0.0023J	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:57	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	03/22/18 11:15	03/26/18 20:57	7782-49-2	
Silver	ND	mg/L	0.0050	0.00095	1	03/22/18 11:15	03/26/18 20:57	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	03/22/18 11:15	03/26/18 20:57	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	03/22/18 11:15	03/26/18 20:57	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	03/22/18 11:15	03/26/18 20:57	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	thod: EF	PA 7470A			
Mercury	ND	mg/L	0.00020	0.000036	1	03/22/18 10:55	03/23/18 12:22	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	2540C						
Total Dissolved Solids	280	mg/L	25.0	25.0	1		03/22/18 09:16		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.3	mg/L	0.25	0.024	1		03/26/18 02:07	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		03/26/18 02:07	16984-48-8	
Sulfate	57.8	mg/L	10.0	0.17	10		03/26/18 23:27	14808-79-8	



Project:	Plant Hamm	ond - Huffa	ker Road										
Pace Project No.:	262983												
QC Batch:	2968			Analysi	is Method	: E	PA 7470A						
QC Batch Method:	EPA 7470/	A		Analysi	is Descrip	tion: 7	470 Mercury	,					
Associated Lab Sar	nples: 262	983001, 26	2983002, 2629	983003, 262	2983004, 2	262983005	5, 262983006	6					
METHOD BLANK:	15501			N	latrix: Wa	ter							
Associated Lab Sar	nples: 262	983001, 26	2983002, 2629	983003, 262	2983004, 2	262983005	5, 262983006	6					
				Blank	R	eporting							
Paran	neter		Units	Result	t	Limit	MDL		Analyzed	Qua	alifiers		
Mercury			mg/L		ND	0.00020	0.000	0036 03/	23/18 11:12	2			
LABORATORY COI	NTROL SAMF	PLE: 1550)2										
				Spike	LCS	6	LCS	% Re	b				
Paran	neter		Units	Conc.	Resu	ılt	% Rec	Limits	s Qi	ualifiers			
Mercury			mg/L	.0025	C	0.0026	104	80)-120		-		
MATRIX SPIKE & M	IATRIX SPIKI	E DUPLICA	TE: 15503			15504							
				MS	MSD								
			262980004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury		mg/L	ND	.0025	.0025	0.0027	0.0027	110	110	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 - Huffaker Road

Pace Project No.: 262983

QC Batch:	2942		Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3	005A	Analysis Description:	6020B MET
Associated Lab Samp	les:	262983001, 262983002	, 262983003, 262983004, 26298300	05, 262983006

METHOD BLANK: 15362

Matrix: Water

Associated Lab Samples:	262983001	, 262983002,	262983003,	262983004	262983005,	262983006
-------------------------	-----------	--------------	------------	-----------	------------	-----------

		Blank	Reporting			
Paramete	er Unit	s Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/	L ND	0.0030	0.00078	03/26/18 16:52	
Arsenic	mg/	L ND	0.0050	0.00057	03/26/18 16:52	
Barium	mg/	L ND	0.010	0.00078	03/26/18 16:52	
Beryllium	mg/	L ND	0.0030	0.000050	03/26/18 16:52	
Boron	mg/	L ND	0.040	0.0039	03/26/18 16:52	
Cadmium	mg/	L ND	0.0010	0.000093	03/26/18 16:52	
Calcium	mg/	L ND	0.50	0.014	03/26/18 16:52	
Chromium	mg/	L ND	0.010	0.0016	03/26/18 16:52	
Cobalt	mg/	L ND	0.010	0.00052	03/26/18 16:52	
Copper	mg/	L ND	0.0050	0.0013	03/26/18 16:52	
Lead	mg/	L ND	0.0050	0.00027	03/26/18 16:52	
Nickel	mg/	L ND	0.0050	0.00095	03/26/18 16:52	
Selenium	mg/	L ND	0.010	0.0014	03/26/18 16:52	
Silver	mg/	L ND	0.0050	0.00095	03/26/18 16:52	
Thallium	mg/	L ND	0.0010	0.00014	03/26/18 16:52	
Vanadium	mg/	L ND	0.010	0.0019	03/26/18 16:52	
Zinc	mg/	L ND	0.010	0.0021	03/26/18 16:52	

LABORATORY CONTROL SAMPLE: 15363

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
			0.44		00.400	
Antimony	mg/L	.1	0.11	110	80-120	
Arsenic	mg/L	.1	0.10	102	80-120	
Barium	mg/L	.1	0.10	100	80-120	
Beryllium	mg/L	.1	0.11	111	80-120	
Boron	mg/L	1	1.1	111	80-120	
Cadmium	mg/L	.1	0.10	102	80-120	
Calcium	mg/L	1	1.1	108	80-120	
Chromium	mg/L	.1	0.11	107	80-120	
Cobalt	mg/L	.1	0.11	107	80-120	
Copper	mg/L	.1	0.11	107	80-120	
Lead	mg/L	.1	0.10	102	80-120	
Nickel	mg/L	.1	0.11	106	80-120	
Selenium	mg/L	.1	0.10	101	80-120	
Silver	mg/L	.1	0.090	90	80-120	
Thallium	mg/L	.1	0.10	102	80-120	
Vanadium	mg/L	.1	0.11	107	80-120	
Zinc	mg/L	.1	0.11	108	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 - Huffaker Road

Pace Project No.: 262983

MATRIX SPIKE & MATRIX SPIK		ATE: 15389			15390							
			MS	MSD								
		262980003	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	.1	.1	0.11	0.11	113	112	75-125	1	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	100	75-125	4	20	
Barium	mg/L	0.074	.1	.1	0.18	0.18	110	108	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	0.10	0.10	103	102	75-125	1	20	
Boron	mg/L	0.12	1	1	1.1	1.1	103	99	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.11	0.10	106	104	75-125	2	20	
Calcium	mg/L	45.9	1	1	48.0	47.9	214	205	75-125	0	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	108	104	75-125	3	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.11	107	106	75-125	1	20	
Copper	mg/L	ND	.1	.1	0.11	0.11	105	106	75-125	1	20	
Lead	mg/L	ND	.1	.1	0.10	0.10	102	100	75-125	3	20	
Nickel	mg/L	ND	.1	.1	0.11	0.11	107	106	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.098	104	98	75-125	6	20	
Silver	mg/L	ND	.1	.1	0.094	0.090	94	90	75-125	3	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	108	107	75-125	1	20	
Zinc	mg/L	ND	.1	.1	0.11	0.11	108	108	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 -	Huffaker Road						
Pace Project No.:	262983							
QC Batch:	402965		Analysis I	Method:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis [Description:	2540C Total D	issolved Solids		
Associated Lab San	nples: 26298300	1						
METHOD BLANK:	2235297		Mat	rix: Water				
Associated Lab San	nples: 26298300	1						
Paran	neter	Units	Blank Result	Reporting Limit) MDL	Analyz	ed Qualifiers	
Total Dissolved Soli	ds	mg/L	N	ID 2	5.0	25.0 03/26/18	14:51	
LABORATORY CON	NTROL SAMPLE:	2235298						
Paran	neter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers	
Total Dissolved Soli	ds	mg/L	250	268	107	90-110		
SAMPLE DUPLICA	TE: 2235299							
_			9237717500	6 Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Soli	ds	mg/L	79	.0 8	0.0	1	5	
SAMPLE DUPLICA	TE: 2235300							
-			262969004	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Soli	ds	mg/L	88	.0 9	3.3	6	5 D6	

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 -	Huffaker Road					
Pace Project No.:	262983						
QC Batch:	403061		Analysis M	ethod:	SM 2540C		
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total D	Dissolved Solids	
Associated Lab Sam	nples: 26298300	02, 262983003, 262	983004, 26298	3005, 2629830	06		
METHOD BLANK:	2235790		Matri	x: Water			
Associated Lab Sam	ples: 26298300	02, 262983003, 262	983004, 26298	3005, 2629830	06		
_			Blank	Reporting			
Param	neter	Units	Result	Limit	MDL	Analyz	ed Qualifiers
Total Dissolved Solid	ls	mg/L	N	D 25	5.0	25.0 03/26/18	13:30
LABORATORY CON	ITROL SAMPLE:	2235791					
Param	neter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solid	ls	mg/L	250	268	107	90-110	
SAMPLE DUPLICAT	E: 2235792						
			262983002	Dup		Max	
Param	neter	Units	Result	Result		RPD	Qualifiers
Total Dissolved Solid	ds	mg/L	N	1 C	ND.		5
SAMPLE DUPLICAT	E: 2235793						
			262982006	Dup		Max	
Param	neter	Units	Result	Result	RPD	RPD	Qualifiers
Total Dissolved Solid	ds	mg/L	21	9 2	29	4	5

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 - Huffaker Road

Pace Project No.:	262983											
QC Batch:	3105		Analys	is Method:	E	PA 300.0						
QC Batch Method:	EPA 300.0		Analys	is Descript	ion: 3	00.0 IC Anio	ns					
Associated Lab Sar	mples: 26298300	01, 262983002, 262	983003, 26	2983004, 2	262983005	, 262983006	6					
METHOD BLANK:	16004		N	Aatrix: Wat	er							
Associated Lab Sar	mples: 26298300	01, 262983002, 262	983003, 26 Blank	2983004, 2 Re	262983005 eporting	, 262983006	5					
Parar	neter	Units	Resul	t	Limit	MDL		Analyzed	Qua	alifiers		
Chloride Fluoride		mg/L mg/L		ND ND	0.25 0.30	0	.024 03 .029 03	/25/18 17:51 /25/18 17:51				
Sulfate		mg/L		ND	1.0	0	.017 03	/25/18 17:51				
LABORATORY CO	NTROL SAMPLE:	16005										
Parar	neter	Units	Spike Conc.	LCS Resu	lt	LCS % Rec	% Re Limit	ec is Qu	alifiers			
Chloride		 mg/L	10		9.6	96	g	0-110				
Fluoride		mg/L	10		10.8	108	g	0-110				
Sulfate		mg/L	10		10.5	105	ç	0-110				
MATRIX SPIKE & N	ATRIX SPIKE DU	PLICATE: 16006			16007							
		262979001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Мах	
Paramete	er Un	its Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg	g/L 1.9	10	10	11.9	11.9	100) 100	90-110	0	15	
Fluoride	mg	g/L ND	10	10	11.4	11.4	113	3 114	90-110	1	15	M1
Sulfate	mg	g/L 37.5	10	10	43.8	43.8	64	64	90-110	0	15	M1
MATRIX SPIKE SA	MPLE:	16008										

Parameter	Units	262979002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.2	10	12.8	96	90-110	
Fluoride	mg/L	ND	10	10.5	105	90-110	
Sulfate	mg/L	77.4	10	94.1	167	90-110 E	

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 Road

Pace Project No.: 262983

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.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

ANALYTE QUALIFIERS

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

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 - Huffaker Road

Pace Project No.: 262983

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch	
262983001	EB-01	EPA 3005A	2942	EPA 6020B	3201	
262983002	FB-01	EPA 3005A	2942	EPA 6020B	3201	
262983003	GWC-23	EPA 3005A	2942	EPA 6020B	3201	
262983004	FD-02	EPA 3005A	2942	EPA 6020B	3201	
262983005	GWC-7	EPA 3005A	2942	EPA 6020B	3201	
262983006	GWC-9	EPA 3005A	2942	EPA 6020B	3201	
262983001	EB-01	EPA 7470A	2968	EPA 7470A	3045	
262983002	FB-01	EPA 7470A	2968	EPA 7470A	3045	
262983003	GWC-23	EPA 7470A	2968	EPA 7470A	3045	
262983004	FD-02	EPA 7470A	2968	EPA 7470A	3045	
262983005	GWC-7	EPA 7470A	2968	EPA 7470A	3045	
262983006	GWC-9	EPA 7470A	2968	EPA 7470A	3045	
262983001	EB-01	SM 2540C	402965			
262983002	FB-01	SM 2540C	403061			
262983003	GWC-23	SM 2540C	403061			
262983004	FD-02	SM 2540C	403061			
262983005	GWC-7	SM 2540C	403061			
262983006	GWC-9	SM 2540C	403061			
262983001	EB-01	EPA 300.0	3105			
262983002	FB-01	EPA 300.0	3105			
262983003	GWC-23	EPA 300.0	3105			
262983004	FD-02	EPA 300.0	3105			
262983005	GWC-7	EPA 300.0	3105			
262983006	GWC-9	EPA 300.0	3105			

|--|

								ani di
San	nple C	ondit	ion l	Jpon Receipt	t			
5	<u>^</u>		De	1,7000	D	roject#		
Pace Analytical Client Name	:	<u>LA</u>	<u> </u>	ware	- [1.10# . 26	2983	
•	A .		r			WVT·LV		03/26/1
ourier:` 🔲 Fed Ex 🔲 UPS 🗍 USPS 🗍 Clie	nt 🖉 C	¢mmer				PM: BM	DUE Date:	03/20/ 4
racking #:			aale i	ntact: Tyes		CLIENT: GHPOW	35-001	
ustody Seal on Cooler/Box Present: , K_ yes		Ľ.	۵.۵۵		l			
acking Material: 🔲 Bubble Wrap 🔤 Bubble	e Bags	∐ № 	ne			Samples on ice, cooling pro	cess has begun	
hermometer Used <u>80</u>	Туре с	fice:	Wet	e Erozen: Vas N		Date and Initials of pe	rsog examining	
cooler Temperature	Bioloč	ncal n	29UC	Comments:		contents:		Ц
emp should be above freezing to 6°C	TVa4			1.				4
Chain of Custody Present:				2.				1
Chain of Custody Filled Out:				3.				1
Chain of Custody Relinquished:				4.				4
Sampler Name & Signature on COC:				5.				<u> </u>
Samples Arrived within Hold Time:				6.				H
Short Hold Time Analysis (<72nr):		1216		7.				1
Rush Turn Around Time Requested:	El Ves			8.				4
Sufficient Volume:	- Kres			9.				
Correct Containers Used:	· Eres							↓
-Pace Containers Used:	Yes			10.				<u> </u>
Containers Intact:	 □Yes		DINA	11.				1
Filtered volume received for Dissolved tests	Chies			12.				
Sample Labels match COC.	- 1	W				•		11
-Includes date/time/tu/Analysis Wadix All containers needing preservation have been checked.	A Yes			13.				
we are the product press, attaching are found to be in	_			ł				
compliance with EPA recommendation.	Yes			In this I where		Lot # of added	<u></u>	+-1
Annual VCA coliform TOC O&G WI-DRO (water)	⊡Ye		-	completed		preservative		↓
	⊡Y≎:			14.				₽4
Handrasse in VOA Vials (>6mm):	⊡Ye			15.				<u> </u>
Trip Black Present	eY⊡		NIA	16				
Trio Blank Custody Seals Present	⊡Ye		ENIN			,		11
Pace Trip Blank Lot # (if purchased):								↓
	_					Field Data Required?	Y / N	T
Client Notification/ Resolution:			Date	/Time:		, nin mark inden og i		
Person Contacted:	<u></u>							<u> </u>
				·				<u> </u>
								
								
								
		ļ					·	<u> </u>
•						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 05, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 265118

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on May 17, 2018. 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.

REV06052018_report reissued per consultant request to add Ba data for GWC-10.

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

Sincerely,

Batery Mc Damil

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

Enclosures

cc: Whitney Law, Geosyntec Consultants Noelia Muskus, Geosyntec Consultants Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc.





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 265118

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265118001	GWC-10	Water	05/15/18 13:55	05/17/18 11:05
265118002	FD-01	Water	05/15/18 00:00	05/17/18 11:05
265118003	GWC-21	Water	05/15/18 16:35	05/17/18 11:05
265118004	GWC-6	Water	05/16/18 10:50	05/17/18 11:05
265118005	GWC-8	Water	05/16/18 12:35	05/17/18 11:05
265118006	FB-01	Water	05/16/18 13:20	05/17/18 11:05
265118007	EB-01	Water	05/16/18 13:25	05/17/18 11:05



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:265118

Lab ID	Sample ID	Method	Analysts	Analytes Reported
265118001	GWC-10	EPA 6020B	CSW	2
		EPA 300.0	RLC	2
265118002	FD-01	EPA 6020B	CSW	1
		EPA 300.0	RLC	2
265118003	GWC-21	EPA 300.0	RLC	1
265118004	GWC-6	EPA 6020B	CSW	1
265118005	GWC-8	EPA 300.0	RLC	1
265118006	FB-01	EPA 6020B	CSW	2
		EPA 300.0	RLC	3
265118007	EB-01	EPA 6020B	CSW	2
		EPA 300.0	RLC	3



Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Date: 06/05/2018 12:11 PM

Sample: GWC-10 Lab ID: 265118001			Collecte	Collected: 05/15/18 13:55		Received: 05/	17/18 11:05 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Barium Calcium	0.16 48.4	mg/L mg/L	0.010 25.0	0.00078 0.69	1 50	05/17/18 12:10 05/17/18 12:10	05/17/18 15:52 05/17/18 15:57	7440-39-3 7440-70-2	M6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride Sulfate	1.4 29.1	mg/L mg/L	0.25 1.0	0.024 0.017	1 1		05/17/18 18:57 05/17/18 18:57	16887-00-6 14808-79-8	M1



Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Sample: FD-01	Lab ID:	265118002	Collected	: 05/15/18	8 00:00	Received: 05/	17/18 11:05 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Calcium	48.9	mg/L	25.0	0.69	50	05/17/18 12:10	05/17/18 16:49	7440-70-2	
300.0 IC Anions 28 Days	Analytical I	Method: EPA	300.0						
Chloride Sulfate	1.3 29.1	mg/L mg/L	0.25 1.0	0.024 0.017	1 1		05/17/18 19:58 05/17/18 19:58	16887-00-6 14808-79-8	



Pace Project No.: 265118

Sample: GWC-21	Lab ID:	265118003	Collected	d: 05/15/18	3 16:35	Received: 05/	/17/18 11:05 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								
Chloride	3.2	mg/L	0.25	0.024	1		05/17/18 20:19	16887-00-6	



Project: Plant Hammond - Huffaker Road										
Pace Project No.:	265118									
Sample: GWC-6		Lab ID: 265118004		Collecte	Collected: 05/16/18 10:50			0 Received: 05/17/18 11:05 Matrix: Wate		
Param	eters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	3	Analytical	Method: EPA	6020B Prep	aration Met	hod: EF	A 3005A			
Boron		0.042	mg/L	0.040	0.0039	1	05/17/18 12:10	05/17/18 16:55	7440-42-8	



	Project:	Plant Hammond - Huffaker Road
--	----------	-------------------------------

Pace Project No.: 265118

Sample: GWC-8	Lab ID:	265118005	Collected	d: 05/16/18	3 12:35	Received: 05	/17/18 11:05 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								
Fluoride	0.32	mg/L	0.30	0.029	1		05/17/18 20:40	16984-48-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Sample: FB-01 Lab ID: 265118006			Collected	Collected: 05/16/18 13:20		Received: 05/	Received: 05/17/18 11:05 Matrix: Water		
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Prep	aration Metl	hod: E	PA 3005A			
Boron	ND	mg/L	0.040	0.0039	1	05/17/18 12:10	05/17/18 17:07	7440-42-8	
Calcium	ND	mg/L	0.50	0.014	1	05/17/18 12:10	05/17/18 17:07	7440-70-2	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	0.11J	mg/L	0.25	0.024	1		05/17/18 21:00	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		05/17/18 21:00	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		05/17/18 21:00	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Sample: EB-01 Lab ID: 265118007			Collected	Collected: 05/16/18 13:25		Received: 05/	Received: 05/17/18 11:05 Matrix: Water		
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Prep	aration Metl	hod: E	PA 3005A			
Boron	ND	mg/L	0.040	0.0039	1	05/17/18 12:10	05/17/18 17:12	7440-42-8	
Calcium	0.036J	mg/L	0.50	0.014	1	05/17/18 12:10	05/17/18 17:12	7440-70-2	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	0.082J	mg/L	0.25	0.024	1		05/17/18 21:21	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		05/17/18 21:21	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		05/17/18 21:21	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Associated Lab Samples:

QC Batch:	6305
QC Batch Method:	EPA 3005A

 3005A
 Analysis Description:
 6020B MET

 265118001, 265118002, 265118004, 265118006, 265118007

EPA 6020B

Analysis Method:

METHOD BLANK: 30425						
Associated Lab Samples:						
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Barium	mg/L	ND	0.010	0.00078	05/17/18 15:40	
Boron	mg/L	ND	0.040	0.0039	05/17/18 15:40	
Calcium	mg/L	ND	0.50	0.014	05/17/18 15:40	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	 .1	0.10	100	80-120	
Boron	mg/L	1	1.0	105	80-120	
Calcium	mg/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 30427 30428												
		265118001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Barium	mg/L	0.16	.1	.1	0.25	0.26	86	102	75-125	6	20	
Boron	mg/L	0.044	1	1	1.0	1.1	100	102	75-125	2	20	
Calcium	mg/L	48.4	1	1	50.7	52.5	231	407	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.


Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Associated Lab Samples:

QC Batch: 6298

QC Batch:6298Analysis Method:QC Batch Method:EPA 300.0Analysis Descript

 00.0
 Analysis Description:
 300.0 IC Anions

 265118001, 265118002, 265118003, 265118005, 265118006, 265118007

EPA 300.0

 METHOD BLANK:
 30395
 Matrix:
 Water

 Associated Lab Samples:
 265118001, 265118002, 265118003, 265118005, 265118006, 265118007

		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	05/17/18 18:15	
Fluoride	mg/L	ND	0.30	0.029	05/17/18 18:15	
Sulfate	mg/L	ND	1.0	0.017	05/17/18 18:15	

LABORATORY CONTROL SAMPLE: 30396

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	9.9	99	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIK		ATE: 30397			30398							
		265118001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.4	10	10	11.6	11.6	102	102	90-110	0	15	
Fluoride	mg/L	0.15J	10	10	10.1	10.1	100	99	90-110	0	15	
Sulfate	mg/L	29.1	10	10	36.6	36.6	75	75	90-110	0	15	M1

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



QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

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.

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 Road

Pace Project No.: 265118

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265118001	GWC-10	EPA 3005A	6305	EPA 6020B	6314
265118002	FD-01	EPA 3005A	6305	EPA 6020B	6314
265118004	GWC-6	EPA 3005A	6305	EPA 6020B	6314
265118006	FB-01	EPA 3005A	6305	EPA 6020B	6314
265118007	EB-01	EPA 3005A	6305	EPA 6020B	6314
265118001	GWC-10	EPA 300.0	6298		
265118002	FD-01	EPA 300.0	6298		
265118003	GWC-21	EPA 300.0	6298		
265118005	GWC-8	EPA 300.0	6298		
265118006	FB-01	EPA 300.0	6298		
265118007	EB-01	EPA 300.0	6298		

	-	
	88 6	
	÷.	
	19	
	SI	
	a .	
r	18	
1	<i>a</i> ,	
- 1	R	
	1	

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

п

Section / Required	A 1 Client Information:	Section B Required Project Information			Sectio	n C e Informa	tion:						ſ		Page :	-	ğ	_
Company	Georgia Power - Coal Combustion Residuals	Report To: Lauren Petty / Jo	iju Abraham		Attenti	on: So	csinvoice	salsou	hernc	o.com			Т					
Address.	42 Inverness Center Parkway	Copy To: Geosyntec			Compe	iny Name							-	1000		and a second		11 m 11
	Birmingham, AL 35242				Addres	2								and the second	Regul	atory Age	ncy	Contraction of the
Email:	Impetty@southernco.com	Purchase Order #: SCS10.	348606		Pace	note:							-	Contraction of the local distance	110	100000	141.00	104-10-00
Phone:	(832)265-5614 Fax	Project Name: Hammond	Huffaker Road Resam	ple	Lace	roject Ma	unager.	Detsy.m	daniei	opaceia	DS.COM,				IPIC	C.A.	5	
Requeste	ad Due Date: 2 den 7 PM	Project #:			Face F	LOTIG #.	328.6		2/3	1000	Request	ed Analvsi	s Filtered	(N/N)	No. No.	M	C 1000 0	22.23
		() ()			E					-	-	11	_	E				
	MATRIX	CODE CODE	COLLECTED	2		Ч	reservat	ives	1/1	2	2	5	-		1			
	SAMPLE ID Solifoid	6=GRAB C=C	TART	9	Si				tsaT	(0.008)	(802.0)	(2020)) (2022)	_		(N/X) 80			
# MƏTI	One Character per box. We (A.Z. 0.91, -) Ar Sample Ids must be unique Tissue	с с з с с с с с с с с с с с с с с с с с	TIME DATE	Wanara lanvs	# OF CONTAINER	HNO3 HS20¢	NªOH HCI	Methanol Na2S2O3	Diher A	Chloride	Calcium (Floored			Residual Chlon			
1.0	GWC-10	int 6 9/15/1	6 1350 Sidig	1355	2					٢	4 4	1			2			
2	10-Cl	m1 6 5/15/18	5 - 5/15/18	ş	12	_				λ	1 1				2			
3	GWC-21	m2 6 5/12/19	\$ 1630 5/5/8	1635	=					7	4	1		9	5	CLI	ande	erly
4	GWC-6	w c s/ie/	8 1045 5/16/18	1050	-	~					_			J	3			-
5	Gwc-8	w G 5/16	1/11/15 1230 5/11/18	1235	i i							7		1	2			
9	FB-01	wr G 5/8/1	8 1315 STIC/18	1320	N	-				>	141	144		4	5			-
4	EB-01	with Shelf	8 1320 5/16/18	1325	2					γ	4 8	4 7 4		_	2			
8														14	4			
6				N		A									elio			
9				ę	Þ		Z	A							_			
Ħ							t I		ĥ	\downarrow	5	10			_			
12												1	Ŧ	#	-1			
	ADDITIONAL COMMENTS	RELINQUISHED BY	I AFFILIATION	DATE	EL .	Æ	H. M. S.	ACCEPTI	D BY 14	FFILIAT	NO		DATE	TIME	1	SAMPLE	CONDITIO	NS
	Z-Day Tay	Ral Miran Geo	sure RPH	5/11/2	501 2	0	Mo	lier 1	When	may		051	16/18	9691				
		Morlia m	anders 0	05/14/14	01	- 00	M'L	ce 1	50	Va/	6	S	1/1/18	1000			_	
							her	0-	A	Enl	Jo	5	17168	1105	448	\succ	\succ	2
		_	a state of the sta			Actification and	N. CONTRACT	(internet			Sec. 1	-	1000	Contract in				
Pag	LIC+ · JCC· 4	0	SAMPLER NAME	ANDIS UNA	INKE					11		5		A State of the second se	c	uo p		1
e 16	TTCOV +CM	0	PKINI Name	01 SAMPLE	N.	de 1	Murra	1		Ĺ					Wb IU	N) CBIAB	oler stody	N) ICf Mbjea N)
6 of 1			SIGNATURE	of SAMPLE	De la	1.	0			2	a i e signe	5/16	118		91	ICe ICe	nD Seg Co	(Y) Inta (Y)
7	265118				1)											

2 3 4

Sa	mple Condition	Upon Receipt	JOH: 265118	
Face Analytical Client Name	: GA Pou	ver	PM: BM Due Date: CLIENT: GAPower-irR	05/21/1
Courier: Fed Ex UPS USPS Clie	nt Commercial	Pace Other	Optional Proj. Due Date:	
Custody Seal on Cooler/Box Present: Uyes	no Seals	intact: yes	no	
Packing Material: Bubble Wrag Bubble	Bags None	Other		
Thermometer Used THROS	Type of Ice:	Blue None	Samples on ice, cooling process has be	egun
Cooler Temperature Temp should be above freezing to 6°C	Biological Tissue	is Frozen: Yes No Comments:	Date and Initials of person examined to the second	ining
Chain of Custody Present:	Yes No N/A	1.		
Chain of Custody Filled Out:		2.		
Chain of Custody Relinquished:		3.		
Sampler Name & Signature on COC:		4.		
Samples Arrived within Hold Time:	TYES NO NA	5.		
Short Hold Time Analysis (<72hr):		6.		
Rush Turn Around Time Requested:		7. 48 hrtA	-T	
Sufficient Volume:		8.		
Correct Containers Used:		9.		
-Pace Containers Used:	Hyes DNo DN/A			1.1
Containers Intact:		10.		
Filtered volume received for Dissolved tests		11.	Tel Ban	
Sample Labels match COC:	Tyes No N/A	12.		
-Includes date/time/ID/Analysis Matrix:	M/			
All containers needing preservation have been checked.		13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	Pyes DNo DN/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	Yes Deto	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	TYes No DA			
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution:			Field Data Bequired? Y / N	4
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) Page 17 of 17



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

May 18, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 265121

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on May 17, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc.





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 265121

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265121

Lab ID	Sample ID	Matrix	Date Collected	Date Received
265121001	GWC-20	Water	05/15/18 18:38	05/17/18 11:05
265121002	GWC-18	Water	05/16/18 11:12	05/17/18 11:05



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:265121

Lab ID	Sample ID	Method	Analysts	Analytes Reported
265121001		EPA 300.0	RLC	1
265121002	GWC-18	EPA 6020B	CSW	1



Project: Plant Hammond - Huffaker R	Road
-------------------------------------	------

Pace Project No.: 265121

Sample: GWC-20	Lab ID:	265121001	Collected	d: 05/15/18	3 18:38	Received: 05	5/17/18 11:05 N	Aatrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical	Method: EP	A 300.0						
Sulfate	41.0	mg/L	1.0	0.017	1		05/17/18 21:42	2 14808-79-8	



Project: Pace Project No.:	Plant Hammo 265121	nd - Huffaker Ro	ad							
Sample: GWC-18		Lab ID:	265121002	Collecte	ed: 05/16/1	8 11:12	Received: 05/	17/18 11:05 M	atrix: Water	
				Report						
Param	eters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	3	Analytical	Method: EPA	6020B Prep	paration Me	thod: EF	PA 3005A			
Calcium		40.0	ma/L	25.0	0.69	50	05/17/18 12:10	05/17/18 17:24	7440-70-2	



Project:	Plant Han	nmond - Huff	aker Road												
Pace Project No.:	265121														
QC Batch:	6305			Analys	is Meth	nod:	EF	PA 6020B							
QC Batch Method:	EPA 300	5A		Analys	is Des	cription:	60	20B MET							
Associated Lab San	nples: 20	65121002													
METHOD BLANK:	30425			N	latrix:	Water									
Associated Lab San	nples: 20	65121002													
Paran	neter		Units	Blank Resul	t	Reporti Limit	ng	MDL		An	alyzed	Qua	alifiers		
Calcium			mg/L		ND		0.50	(0.014	05/17	/18 15:4	0			
LABORATORY COM	NTROL SA	MPLE: 304	26												
				Spike	I	LCS		LCS	%	6 Rec					
Paran	neter		Units	Conc.	R	Result		% Rec	L	imits	Q	ualifiers	_		
Calcium			mg/L	1		1.0		103		80-1	20				
MATRIX SPIKE & M	IATRIX SP	IKE DUPLIC	ATE: 30427			3042	28								
				MS	MSD)									
5			265118001	Spike	Spike	e M	S .	MSD	MS	5	MSD	% Rec		Max	• •
Paramete	er	Units	Result	Conc.	Conc	. Res	ult	Result	% R	ec	% Rec	Limits	RPD	<u> </u>	Qual
Calcium		mg/L	48.4	1		1	50.7	52.5		231	407	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.



Project:	Plant Hammo	nd - Huffal	ker Road											
Pace Project No.:	265121													
QC Batch:	6298			Analys	is Metho	d:	EPA 300.0							
QC Batch Method:	EPA 300.0			Analys	is Descri	iption:	300.0 IC Ai	nions						
Associated Lab San	nples: 26512	21001												
METHOD BLANK:	30395			N	latrix: W	/ater								
Associated Lab San	nples: 26512	21001												
Paran	neter		Units	Blank Resul	t	Reporting Limit	ME	DL	Ar	alyzed	Qua	alifiers		
Sulfate			mg/L		ND	1	.0	0.017	05/17	7/18 18:1	5		_	
LABORATORY COM	NTROL SAMPL	.E: 3039	6											
				Spike	LC	CS	LCS	C,	% Rec					
Paran	neter		Units	Conc.	Re	sult	% Rec		Limits	Q	ualifiers	_		
Sulfate			mg/L	10		10.2	10)2	90-′	110				
MATRIX SPIKE & M	IATRIX SPIKE	DUPLICAT	TE: 30397			30398								
				MS	MSD									
_			265118001	Spike	Spike	MS	MSD	M	S	MSD	% Rec		Max	-
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% F	Rec	% Rec	Limits	RPD	RPD	Qual
Sulfate		mg/L	29.1	10	1	0 36.	6 36.	6	75	75	90-110	0	15	M1

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



QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265121

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.

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 RoadPace Project No.:265121

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
265121002	GWC-18	EPA 3005A	6305	EPA 6020B	6314
265121001	GWC-20	EPA 300.0	6298		

Section	d Client Information:	Section B Required Project Information:	Section C Invoice Information:		Page :	Of
ompai	N Georgia Power - Coal Combustion Residuals A 1	Report To: Lauren Petty / Joju Abraham	Attention: scsinvoices@southern	co.com		
	Birmingham, AL 35242	copy to Geosyntec	Company Name: Address:		Regulatory	gency
mail.	Impetty@southernco.com	Purchase Order #: SCS10348606	Pace Quote:			
request	(832)265-5614 Fax ed Due Date: つ ひんり ークテ	Project Name: Hammond Huffaker Road Resample	Pace Project Manager: betsy mcdaniel	@pacelabs.com,	State / Loc	ation
	NAT AN		r doe r tuile * 328.6	Requested Analysis Filt	vred (Y/N)	State State
	MATRIX	coof COLLECTED	Preservatives	22		
	SAMPLE ID	wee Dv wr wr wr wr wr wr wr wr wr wr wr wr wr	1 COLLECTIO	(90209) (0.002 1591	(NVA) OU	
# M3TI	One Character per box. We (A-Z, 0-9 /, -) Ar Coner Sample Ids must be unique Tissue	St of A W St of	Offner Mefthanol Machanol HCI HSSO4 HSSO4 SAMPLE TEMP A SAMPLE TEMP A	sezvisna) shailuz) muisla)	Residual Chlori	
1	GWC-20	NT Closhis lie 1835 oshiglig 1838	1	~	2	F
2	GWC-18	WT G 05/16/15 1108 05/16/18 112		7	2	-10
3						
4						
5				The second		
9			N N DETIK			
7		t	TTEM			
8		T T J				
6						
9						
=						
12						
Subset	ADDITIONAL COMMENTS	RELINQUISHED BY I AFFILIATION DATE	TIME ACCEPTED BY /	AFFILIATION DATE	TIME SAW	PLE CONDITIONS
~*	-day TAT	Moulia When ben 05/13/	18 10:00 Milee Nour	RN / Pace 5/17/1	0001 8	
			Cheerla He	tits in	1054.8	XX
	104.000104					
Pa	TTTCOT·HOM	SAMPLER NAME AND SIGN	LATURE	and the second second	C	
ge 11		PRINT Name of SAMPL	ER: Noelia Musicus		Ceived	N) ubjez ojet N) N) N)
of 1		SIGNATURE OF SAMPL	ER: Mollia Murhun	DATE Signed: 05/16	18 H	
12	171692		1			

à

Pace Analytical Client Name	e: GA Ppu	Upon Receipt	WO#: 2651 21	te: 05/21/18
Courier: C Fed Ex UPS USPS Clie	ent Commercial	Pace Other	CLIENT: GAPower -(R Proj. Due Date:	an a
Custody Seal on Cooler/Box Present:	no Seals	intact: yes	no	
Packing Material: Bubble Wrag	e Bags None	Other		
Thermometer Used THROS	Type of Ice:	Blue None	Samples on ice, cooling process	has begun
Cooler Temperature 418°C	Biological Tissue	is Frozen: Yes No	Date and Initials of person,	examining
Temp should be above freezing to 6°C		Comments:	contents: 5// 1//	8124
Chain of Custody Present:	Yes No N/A	1.		
Chain of Custody Filled Out:	Pres No N/A	2.		
Chain of Custody Relinquished:	BYes DNO DN/A	3.		
Sampler Name & Signature on COC:	Tes No N/A	4.		
Samples Arrived within Hold Time:	TYPES NO DNA	5.		
Short Hold Time Analysis (<72hr):		6.		
Rush Turn Around Time Requested:		7. 48 hrt A	T	
Sufficient Volume:		8.		
Correct Containers Used:		9.		
-Pace Containers Used:	HVes DNO DN/A			
Containers Intact:		10.		
Filtered volume received for Dissolved tests	Yes No TANA	11.		
Sample Labels match COC:		12		
-Includes date/time/ID/Analysis Matrix:	M/			
All containers needing preservation have been checked.	Eres INO INA	13		
All containers needing preservation are found to be in compliance with EPA recommendation.				
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	Yes Mo	Initial when	Lot # of added	
Samples checked for dechlorination:		14	preservative	
Headspace in VOA Vials (>6mm):		15		
Trip Blank Present:		16		
Trip Blank Custody Seals Present		10.		
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution: Person Contacted:	Date/Ti	ime:	Field Data Required? Y	N
Project Manager Review:			Date:	

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



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

October 15, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 2610158

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc. Rebecca Thornton, Pace Analytical Atlanta





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 2610158

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610158001	GWA-4	Water	10/04/18 10:50	10/05/18 11:30
2610158002	GWA-1	Water	10/04/18 12:06	10/05/18 11:30
2610158003	FD-04	Water	10/04/18 00:00	10/05/18 11:30
2610158004	GWC-7	Water	10/04/18 14:12	10/05/18 11:30
2610158005	GWC-8	Water	10/04/18 16:02	10/05/18 11:30



SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610158001	GWA-4	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610158002	GWA-1	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610158003	FD-04	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610158004	GWC-7	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610158005	GWC-8	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Sample: GWA-4	Lab ID: 2610158001 Collected: 10/04/18 10:50 Received: 10/05/18 11:30 Matri					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	0.00078	1	10/09/18 14:10	10/11/18 21:38	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 21:38	7440-38-2	
Barium	0.050	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 21:38	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 21:38	7440-41-7	
Boron	0.10	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 21:38	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 21:38	7440-43-9	
Calcium	77.8	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 21:43	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 21:38	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 21:38	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 21:38	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 21:38	7439-92-1	
Nickel	0.0013J	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 21:38	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 21:38	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 21:38	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 21:38	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 21:38	7440-62-2	
Zinc	0.0058J	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 21:38	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	490	mg/L	25.0	10.0	1		10/08/18 17:48		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	6.1	mg/L	0.25	0.024	1		10/10/18 15:08	16887-00-6	
Fluoride	0.24J	mg/L	0.30	0.029	1		10/10/18 15:08	16984-48-8	
Sulfate	209	mg/L	10.0	0.17	10		10/11/18 04:29	14808-79-8	M1



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Sample: GWA-1	Lab ID:	2610158002	Collecte	ed: 10/04/18	3 12:06	Received: 10/	05/18 11:30 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: E	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 21:49	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 21:49	7440-38-2	
Barium	0.039	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 21:49	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 21:49	7440-41-7	
Boron	0.021J	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 21:49	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 21:49	7440-43-9	
Calcium	15.9J	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 21:55	7440-70-2	D3
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 21:49	7440-47-3	
Cobalt	0.00058J	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 21:49	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 21:49	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 21:49	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 21:49	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 21:49	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 21:49	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 21:49	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 21:49	7440-62-2	
Zinc	0.0030J	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 21:49	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	112	mg/L	25.0	10.0	1		10/08/18 17:48		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.4	mg/L	0.25	0.024	1		10/10/18 16:18	16887-00-6	В
Fluoride	0.17J	mg/L	0.30	0.029	1		10/10/18 16:18	16984-48-8	
Sulfate	5.2	ma/L	1.0	0.017	1		10/10/18 16:18	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Sample: FD-04	Lab ID:	2610158003	Collecte	ed: 10/04/18	3 00:00	Received: 10/	05/18 11:30 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: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 22:12	7440-36-0	
Arsenic	0.0054	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 22:12	7440-38-2	
Barium	0.080	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 22:12	7440-39-3	
Beryllium	0.00020J	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 22:12	7440-41-7	
Boron	0.050	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 22:12	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 22:12	7440-43-9	
Calcium	26.7	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 22:18	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 22:12	7440-47-3	
Cobalt	0.025	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 22:12	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 22:12	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 22:12	7439-92-1	
Nickel	0.11	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 22:12	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 22:12	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 22:12	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 22:12	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 22:12	7440-62-2	
Zinc	0.23	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 22:12	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	282	mg/L	25.0	10.0	1		10/08/18 17:49		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.9	mg/L	0.25	0.024	1		10/10/18 19:20	16887-00-6	
Fluoride	0.20J	mg/L	0.30	0.029	1		10/10/18 19:20	16984-48-8	
Sulfate	133	ma/L	1.0	0.017	1		10/10/18 19:20	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Sample: GWC-7	Lab ID:	2610158004	Collecte	ed: 10/04/18	3 14:12	Received: 10/	05/18 11:30 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	10/09/18 14:10	10/11/18 22:23	7440-36-0	
Arsenic	0.0049J	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 22:23	7440-38-2	
Barium	0.080	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 22:23	7440-39-3	
Beryllium	0.00020J	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 22:23	7440-41-7	
Boron	0.048	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 22:23	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 22:23	7440-43-9	
Calcium	26.1	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 22:29	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 22:23	7440-47-3	
Cobalt	0.024	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 22:23	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 22:23	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 22:23	7439-92-1	
Nickel	0.11	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 22:23	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 22:23	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 22:23	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 22:23	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 22:23	7440-62-2	
Zinc	0.22	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 22:23	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	287	mg/L	25.0	10.0	1		10/08/18 17:49		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	2.0	mg/L	0.25	0.024	1		10/10/18 18:35	16887-00-6	
Fluoride	0.19J	mg/L	0.30	0.029	1		10/10/18 18:35	16984-48-8	
Sulfate	167	ma/L	10.0	0.17	10		10/11/18 02:58	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Sample: GWC-8	Lab ID:	2610158005	Collecte	ed: 10/04/18	8 16:02	Received: 10/	05/18 11:30 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EP	A 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 22:35	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 22:35	7440-38-2	
Barium	0.11	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 22:35	7440-39-3	
Beryllium	ND	mg/L	0.015	0.00025	5	10/09/18 14:10	10/12/18 17:39	7440-41-7	D3
Boron	0.047J	mg/L	0.20	0.020	5	10/09/18 14:10	10/12/18 17:39	7440-42-8	D3
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 22:35	7440-43-9	
Calcium	264	mg/L	25.0	0.69	50	10/09/18 14:10	10/11/18 22:41	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 22:35	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 22:35	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 22:35	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 22:35	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 22:35	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 22:35	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 22:35	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 22:35	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 22:35	7440-62-2	
Zinc	0.0031J	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 22:35	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	292	mg/L	25.0	10.0	1		10/08/18 17:49		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.3	mg/L	0.25	0.024	1		10/10/18 18:58	16887-00-6	
Fluoride	0.28J	mg/L	0.30	0.029	1		10/10/18 18:58	16984-48-8	
Sulfate	45.4	mg/L	1.0	0.017	1		10/10/18 18:58	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

QC Batch:	15013	3	A	Analysis Method:		EPA 6020B
QC Batch Method:	EPA 3	005A	A	Analysis Description:		6020B MET
Associated Lab Samp	oles:	2610158001, 2610	158002, 261015	58003, 2610158004,	2610	0158005

METHOD BLANK: 67190

Matrix: Water

Associated Lab Samples: 2610158001, 2610158002, 2610158003, 2610158004, 2610158005

		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/11/18 17:43	
Arsenic	mg/L	ND	0.0050	0.00057	10/11/18 17:43	
Barium	mg/L	ND	0.010	0.00078	10/11/18 17:43	
Beryllium	mg/L	ND	0.0030	0.000050	10/11/18 17:43	
Boron	mg/L	ND	0.040	0.0039	10/11/18 17:43	
Cadmium	mg/L	ND	0.0010	0.000093	10/11/18 17:43	
Calcium	mg/L	ND	0.50	0.014	10/11/18 17:43	
Chromium	mg/L	ND	0.010	0.0016	10/11/18 17:43	
Cobalt	mg/L	ND	0.010	0.00052	10/11/18 17:43	
Copper	mg/L	ND	0.025	0.0013	10/11/18 17:43	
Lead	mg/L	ND	0.0050	0.00027	10/11/18 17:43	
Nickel	mg/L	ND	0.010	0.00095	10/11/18 17:43	
Selenium	mg/L	ND	0.010	0.0014	10/11/18 17:43	
Silver	mg/L	ND	0.010	0.00095	10/11/18 17:43	
Thallium	mg/L	ND	0.0010	0.00014	10/11/18 17:43	
Vanadium	mg/L	ND	0.010	0.0019	10/11/18 17:43	
Zinc	mg/L	ND	0.010	0.0021	10/11/18 17:43	

LABORATORY CONTROL SAMPLE: 67191

Parameter	Unite	Spike	LCS Result	LCS % Rec	% Rec	Qualifiers
	01113		TCSUIL	70 1100	Linit3	Qualifiers
Antimony	mg/L	.1	0.10	102	80-120	
Arsenic	mg/L	.1	0.098	98	80-120	
Barium	mg/L	.1	0.097	97	80-120	
Beryllium	mg/L	.1	0.10	100	80-120	
Boron	mg/L	1	0.98	98	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.099	99	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	101	80-120	
Lead	mg/L	.1	0.10	100	80-120	
Nickel	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Silver	mg/L	.1	0.097	97	80-120	
Thallium	mg/L	.1	0.098	98	80-120	
Vanadium	mg/L	.1	0.10	100	80-120	
Zinc	mg/L	.1	0.10	103	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 - Huffaker Road

Pace Project No.: 2610158

MATRIX SPIKE & MATRIX SPIKE	E DUPLIC	ATE: 67194			67195							
			MS	MSD								
		2610117002	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	.1	.1	0.11	0.11	108	110	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	108	75-125	2	20	
Barium	mg/L	0.028	.1	.1	0.13	0.13	101	103	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	0.096	0.096	96	96	75-125	0	20	
Boron	mg/L	6.9	1	1	9.9	8.0	295	107	75-125	21	20	R1
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	104	75-125	1	20	
Calcium	mg/L	286	1	1	348	284	6160	-242	75-125	20	20	M6
Chromium	mg/L	ND	.1	.1	0.10	0.10	102	102	75-125	1	20	
Cobalt	mg/L	0.016	.1	.1	0.12	0.12	102	99	75-125	2	20	
Copper	mg/L	ND	.1	.1	0.10	0.096	100	96	75-125	4	20	
Lead	mg/L	ND	.1	.1	0.098	0.099	98	99	75-125	1	20	
Nickel	mg/L	0.0024J	.1	.1	0.10	0.10	101	99	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.11	0.11	105	105	75-125	0	20	
Silver	mg/L	ND	.1	.1	0.097	0.097	97	97	75-125	0	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	99	75-125	1	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	105	106	75-125	1	20	
Zinc	mg/L	0.0034J	.1	.1	0.10	0.10	98	99	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: Pace Project No :	Plant Hammond - 2610158	Huffaker Road								
QC Batch:	14910		Analysis M	lethod:	SM 2540C					
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total	Dissolve	ed Solids			
Associated Lab Sar	mples: 26101580	01, 2610158002,	2610158003, 26	10158004, 26 ²	10158005					
LABORATORY CO	NTROL SAMPLE:	66856								
			Spike	LCS	LCS	%	Rec			
Para	neter	Units	Conc.	Result	% Rec	Lii	mits	Q	ualifiers	
Total Dissolved Sol	ds	mg/L	400	400	100		84-108			
SAMPLE DUPLICA	TE: 66857									
			2610112003	Dup			Max			
Parar	neter	Units	Result	Result	RPD		RPD		Qualifiers	
Total Dissolved Sol	ds	mg/L	23	8 2	232	3		10		
SAMPLE DUPLICA	TE: 66858									
			2610117001	Dup			Max			
Para	neter	Units	Result	Result	RPD		RPD		Qualifiers	
Total Dissolved Sol	ids	mg/L	70	0 6	615	13		10	D6	

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 - Huffaker Road

Pace Project No.:	261015	8											
QC Batch:	15084			Analys	sis Method	: E	PA 300.0						
QC Batch Method:	EPA 3	00.0		Analys	sis Descrip	tion: 3	00.0 IC Anio	ons					
Associated Lab Sam	nples:	2610158001,	2610158002, 2	610158003	8, 2610158	004, 26101	58005						
METHOD BLANK:	67495			1	Matrix: Wa	ter							
Associated Lab Sam	nples:	2610158001,	2610158002, 2	610158003	8, 2610158	004, 26101	58005						
				Blanl	K R	eporting							
Param	neter		Units	Resu	lt	Limit	MDL		Analyzed	Qua	alifiers		
Chloride			mg/L		0.16J	0.25	. C	0.024 10)/10/18 14:23	3			
Fluoride			mg/L		ND	0.30	0 0	0.029 10)/10/18 14:23	3			
Sulfate			mg/L		ND	1.0	0 0	0.017 10)/10/18 14:23	\$			
LABORATORY CON	NTROL S	AMPLE: 67	/496										
D			11-26-	Spike	LCS	5	LCS	% Re	ec				
Param	neter		Units	Conc.	Resi	JIT	% Rec	Limi	ts Qu	lalifiers	-		
Chloride			mg/L	10)	10.5	105	ç	90-110				
Fluoride			mg/L	10)	10	100	ç	90-110				
Sulfate			mg/L	10)	10.7	107	Ĺ	90-110				
MATRIX SPIKE & M	IATRIX S		CATE: 67497			67498							
				MS	MSD								
Paramete	r	Units	2610158001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride		ma/L	6.1	10	10	16.5	16.5	104	4 105	90-110	0	15	
Fluoride		mg/L	0.24J	10	10	10.3	10.3	100	0 100	90-110	0	15	
Sulfate		mg/L	209	10	10	154	154	-555	5 -554	90-110	0	15	E,M1
MATRIX SPIKE SAM	MPLE:	67	7499										
				26101	58002	Spike	MS		MS	% Rec			

Parameter	Units	2610158002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.4	10	11.9	105	90-110	
Fluoride	mg/L	0.17J	10	10.2	100	90-110	
Sulfate	mg/L	5.2	10	15.6	104	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 - Huffaker Road

Pace Project No.: 2610158

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.
- D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- 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.
- R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610158001	GWA-4	EPA 3005A	15013	EPA 6020B	15073
2610158002	GWA-1	EPA 3005A	15013	EPA 6020B	15073
2610158003	FD-04	EPA 3005A	15013	EPA 6020B	15073
2610158004	GWC-7	EPA 3005A	15013	EPA 6020B	15073
2610158005	GWC-8	EPA 3005A	15013	EPA 6020B	15073
2610158001	GWA-4	SM 2540C	14910		
2610158002	GWA-1	SM 2540C	14910		
2610158003	FD-04	SM 2540C	14910		
2610158004	GWC-7	SM 2540C	14910		
2610158005	GWC-8	SM 2540C	14910		
2610158001	GWA-4	EPA 300.0	15084		
2610158002	GWA-1	EPA 300.0	15084		
2610158003	FD-04	EPA 300.0	15084		
2610158004	GWC-7	EPA 300.0	15084		
2610158005	GWC-8	EPA 300.0	15084		

	-
	193
	石 ?
	1
	2
	2
5	8
1	u.
1	d .
82	· · · ·

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

ITEM # ddress.	2480 Maner Road Manta, GA 30339 <u>Aham@southernco.com</u> (404)505-7239 Fax (404)505-7239 Fax	Copy To: Purchase O	Geosyn		1			HILDER	tion	VUISOS	/DICES/	Dsouth	ernco	com										
ITEM # nail: jabra	Allarita. GA 30339 Inam@Southernco.com (404)505-7239 Fax e Date Stand at TAT	Purchase O	- Annon	La				Com	anv Na	.em		10000						Т						
ITEM # Automatic jabra	inam@southernco.com (404)505-7239 Fax = Date Standard 1AT	Purchase O						Addre	SSC									1	201	C. C	and a second	NA Distort		1.000
ITEM # ITEM #	e Date Standard TAT		rder #	SCS103486	06			Pace	Quote:									and the second s		2	Surator	y Agency		
ITEM # ITEM #	soare Standard TAT	Project Nam	e: Pl	ant Hammond	- Huffake	- Road		Pace	Project	Manage	a u	etsy.mod	aniel@	pacelat	DS COM.			1000	Sec. Sec.	Sale and	State / I	ocation	201 100 au	15.2.3
# M3 11		Project #.	SC	6581				Pace	Profile :	#: 32	8.3										0	-		100
# IN 3 I			E				F	F					(Call)	14100	Reque	sted Ar	nalysis	Filtered	(NIN)	Constanting of		100,000		
# M3 11	VIETAM	CODE	(nel of a		COLLECT	ED				Prese	rvative	ŝ	N/X	<	1	+				1				
# 1413 1 1	SAMPLE ID	Water DW Vater WY d St P	(G=GKAB Codes	STAR		END	1 COLLECTIO	SE					Test	+ State) •	isilus, aurou		- '9	ITO			(N/A) at			a de la compañía de l
	One Character per box. Wree (A-Z, 0-9 /, -) One An Chee Sample Ids must be unique Tissue	AN PO ST	3000 XIRTAM 39YT 3J9MA2	DATE	D JIME	ATE T	≣ MMPIETEMPA AMPIETEMPA	# OF CONTAINE	H5SO4 Dupreserved	HCI HNO3	HOBN	lonsriteM	Olher Analyses	III .qqA) elei9M	+,90h0m0.cu -	3	*/				Residual Chlorin			
1	GWA-4		WT O	1 Shola	of her	oil 8 1	50 20	5		5				7 7						_	2			
2	GWA-1		W G	lologing 11	43 10	H/18 17	0 30	5	-	3				5		-					2			
3	tD-of		WT C	Bilvoloi	101 -	H/18 -	1	17	-	3				-	7						2			
4	GWC-7		WT G	1 Silvola	ol ts	offes IL	12 21	30.	-	ĉ				7	7	-				-	2			
5	GwC-8		WT G	1 8/10/01	of the	byles 16	02 20	7	_	r				7	>						2			
6						+	+									+		Ħ		H				
7.1								1										5						1
8																	0)	A			I		D	12
6					0	7								0	6/	A						-	0	
0		-	(201	A		-					2	$\left \right\rangle$	A								En 2		
		M.	A	A	-						1					-				-	L			
2					\vdash		-		/											-				
State of the	ADDITIONAL COMMENTS	ATTAC ASSAULT	SELINQUIS	HED BY / AFF	LIATION	X	DATE	F	MR	1	Ac	CEPTED	BYIAF	FILATIC	N	1000	DA	μ	TIME		SA	APLE CON	SNOILIGI	10
tals list: Sb,A	s,Ba,Be,B,Cd,Ca,Cr,Co,Cu,Pb,Ni,Se,Ag,TI,V,Zn	V	locli	why i	Curlo	6	34/18	9	8	Na	nto	1)	ahi	4V			10/4	1118	180	6	_	-		
		N	orde	alit si	Lien	0(14/1	6 10	3	6	5/0	2003					ien	1/18-1	950	1				
		63	Sla	-m		101	118	10	20	2	F.	P N	31/1	100	/ paci	6	5/01	181/2	1000		-			
	01 10 100 · m0	-				_				X	10	al	12	SZ	N	/	101	150	2118	4 93	A.	8	2	X
Bag	8910197 · #0			SA	MPLER N	AME AND	SIGNA	TURE			<	1000		100				10.202	のない	- о	vo v			
e 16					SIGNAT		MDI ED	\leq	20	Ma	5	NSK	SC	No.	TE Cione	-				Wb IU	bevied	stody V)	Dier V)	səldu
of								1	inno	0 1	Ney	lon		5	infin - I	2 10	ho/c	611		31	вЯ	(XII (XII	269 (V/I	Sar

Sample Condition Upon Receipt Project # Courter: Fed Ex USPS Client Commendal Project # Not#: 261.0158 Project # Not#: 261.0158 Project # Causedy Seal on Cooler/Box Present: Seals intact: S				
Project # Courier: Fed Ex UPS USPS Commercial Project # Noticity 5: Control # Date bases Date bases Date bases Oustody Seal on Cooler/Box Present: Ores Project # Due bases 10/12/18 Oustody Seal on Cooler/Box Present: Ores Project # Due bases 10/12/18 Courier: Ores Distribution Distribution Distribution Distribution Distribution Distribution Control course/base for cours Main Distribution Distrib	Sa	ample Condition Upon Receipt		6
Courier: Fed Ex UPS USPS Client Commercial Pace other Tracking #:	Face Analytical	GAR POTORN	Project #	
Courter: Fed EX USPS Clarat Commendal Pace Other Coustody Sala on Color/Box Present: Lyos no Seals intact: Lyos Packing Material: Bubble Bags I/ None Other Dite Date: 10/12/18 Color Temporature S.Y. Type of loc: With the Date: 10/12/18 Color Temporature S.Y. Type of loc: With the Date: 10/12/18 Color Temporature S.Y. Type of loc: With the Date: 10/12/18 Color Temporature S.Y. Type of loc: With the Date: 10/12/18 Color Temporature S.Y. Type of loc: With the Date: 10/12/18 Contract S.Y. Samples Associations Comments: Date: Date: Date: Chain of Custody Present: Samples Associations S	Client Name	le. <u>GARIOUEL</u>		10158
Tracking #:	Courier: Fed Ex UPS USPS Clie	lient Commercial Pace Other	WOTT · ZC	
Custody Seal on Cooler/Box Present: Syss no Seals intact: Syss Children Construction Presentation Present: Sysse no Seals intact: Sysse Children Construction Present: Sysse None Children Construction Present: Sysse None Constructio	Tracking #:		PM: BM	Due Date: 10/12/18
Packing Material: Bubble Wrap Bubble Bags Nore Offer Thermometer Used 2.3 Type of Let: Wish Nore Biological Tissue is Frozen: Yes No Comments: Different and tells of person a some man Contents: Different and tells of person a some man Samples Arrived within Hold Time: Different and tells of person a some man Samples Arrived within Hold Time: Different and tells of person a some man Samples Arrived within Hold Time: Different and tells of person and tells Samples Arrived within Hold Time: Different and tells of person and tells Containers Used: Different and tells of person and tells Containers Used: Different and tells of person and tells Samples containers Used: Different and tells Containers meding presentation are found to be in compliance with Person and the some different Samples checked for dechormation: Different and the different and the different and the different and tells of person and tells Comments' Resolution: Different and the different and the different and tells Comments' Resolution: Different and tells of tells Trip Blank Lot 8 (if purchased): Different Notification Resolution: Different and tells Comments' Resolution: Different and tells Comments' Resolution: Different and tells Different Notification Resolution: Different and tells Comments' Resolution: D	Custody Seal on Cooler/Box Present:	es 🗌 no Seals intact: 🗠 yes 🗌	CLIENT. CHIOW	er-cor
Thermometer Used State Type of flas: Weiner Biological Tissue is Frozen: Yes the Biological Tissue is Frozen: Yes the Biological Tissue is Frozen: Yes the Contents: Description of the second	Packing Material: Bubble Wrap Bubb	ole Bags None Other		2
Color Temperature Heine Section Tissue is Frozen: Yes No Date and multiple Section Comments: Comments: Comments: Comments: Comments: Chain of Custody Reinquished: Section Sect	Thermometer Used <u>83</u>	Type of Ice: (Wer) Blue None	Samples on ice, cooling	process has begun
Chain of Custody Present: Image: Two Image: Two <t< th=""><th>Cooler Temperature 4°C</th><th>Biological Tissue is Frozen: Yes No Comments:</th><th>contents: /0</th><th>05/18 MR</th></t<>	Cooler Temperature 4°C	Biological Tissue is Frozen: Yes No Comments:	contents: /0	05/18 MR
Chain of Custody Filled Out: Image: Two Out 2 Chain of Custody Relinquished: Image: Two Out 2 Sampler Name & Signature on COC: Image: Two Out 2 Samples Arrived within Hold Time: Image: Two Out 2 Samples Arrived within Hold Time: Image: Two Out 2 Samples Arrived within Hold Time: Image: Two Out 2 Sufficient Volume: Image: Two Out 2 Sufficient Volume: Image: Two Out 2 Sufficient Volume: Image: Two Out 2 -Pace Containers Used: Image: Two Out 2 -Includes dateImmed10/Analysis Matrix: -Includes dateImmed10/Analysis Matrix: Al containers needing preservation are found to be in Ome Out 2 Image: Two Ome Out 2 Image: Transitions needing preservation: Image: Two Ome Out 2 -Includes dateImmed10/Analysis Image: Two Ome Out 2 -Includes date of odeCol	Chain of Custody Present:	Kers □No □N/A 1.		
Chain of Custody Relinquished: Image: Im	Chain of Custody Filled Out:	Tyes INO IN/A 2.		
Sampler Name & Signature on COC: Image: DNA 4. Samples Arrived within Hold Time: Image: DNA 5. Short Hold Time Analysis (c72hr): Image: DNA 5. Rush Turn Around Time Requested: Image: DNA 7. Sufficient Volume: Image: DNA 7. Correct Containers Used: Image: DNA 7. Image: Page Containers Interview on Image: DNA 7. Image: DNA 7. Image: Page Containers Interview on Image: DNA 7. Image: DNA 7. Image: DNA 7. Image:	Chain of Custody Relinquished:	Tyes INO IN/A 3.		
Samples Arrived within Hold Time: Image: Discrete Containers Containers Containers Used: Image: Discrete Containers	Sampler Name & Signature on COC:	erves DNo DN/A 4.		
Short Hold Time Analysis (<72hr):	Samples Arrived within Hold Time:	Tyes INO IN/A 5.		
Rush Turn Around Time Requested: Image: State Stat	Short Hold Time Analysis (<72hr):	□Yes ZNO □N/A 6.		
Sufficient Volume: Image: No I	Rush Turn Around Time Requested:	TYes ZNo DN/A 7.	<i>n</i>	
Correct Containers Used:	Sufficient Volume:	ETes INO IN/A 8.		· · · · · ·
Pace Containers Used: Pass NA NA Containers Intact: Pass NA 10. Filtered volume received for Dissolved tests Pass No PAA Sample Labels match COC: Pass Pass No PAA -Includes date/filmer/D/Analysis Matrix: Pass No NA 12. -Includes date/filmer/D/Analysis Matrix: Pass No NA 13. All containers needing preservation have been checked. Pass No NA 13. All containers needing preservation are found to be in compliance with EPA recommendation. Pass No NA exceptions: VOA, cottom, TOC, O&G, WI-DRD (water) Pass No NA 14. Headspace in VOA Vials (>6mm): Pass No NA 15. Initial when completed Priservative Samples checked for dechlorination: Pass No NA 16. Initial when completed Initial wh	Correct Containers Used:	Ves DNo DN/A 9.		20
Containers Intact: Piss No NA 10. Filtered volume received for Dissolved tests Piss No Pisk A 11. Sample Labels match COC: Image: Simple Control (Simple Control (-Pace Containers Used:			
Filtered volume received for Dissolved tests Image Inc. Image Inc. Image Inc. Sample Labels match COC: Image Inc. Image Inc. Image Inc. Image Inc. All containers needing preservation have been checked. Image Inc. Image Inc. Image Inc. Image Inc. All containers needing preservation have been checked. Image Inc. Im	Containers Intact:	Pres □No □N/A 10.		
Sample Labels match COC: • </td <td>Filtered volume received for Dissolved tests</td> <td>□Yes □No -EN/A 11.</td> <td></td> <td></td>	Filtered volume received for Dissolved tests	□Yes □No -EN/A 11.		
-includes date/time/ID/Analysis Matrix: Column (Column (C	Sample Labels match COC:	Eres INO IN/A 12.		
All containers needing preservation have been checked.	-Includes date/time/ID/Analysis Matrix:	<u> </u>		
All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, OAG, WI-DRO (water) 98 98 Wo Samples checked for dechlorination: 198 14. Headspace in VOA Vials (>6mm): 198 15. Trip Blank Present: 171 Pace Trip Blank Lot # (if purchased): 18. 198 198 10. 11. 11. 12. 13. 14. 14. 15. 171 18. 19. 10. 11. 12. 13. 14. 14. 14. 15. 16. 171 18. 19. 19. 10. 10. 11. 12. 13. 14. 14. 15. 16. 171 18. 19. 19. 19. 19. 19. 19. 19. 19. 10. 19. 10. 10. 10. 10. 11. 12. 13. 14. 14. 15. 16. 17. 18. <t< td=""><td>All containers needing preservation have been checked.</td><td>Pres DNo DN/A 13.</td><td></td><td></td></t<>	All containers needing preservation have been checked.	Pres DNo DN/A 13.		
Compliance will EPA recommendation: Vest Initial when completed Lot # of added preservative Samples checked for dechlorination: Vest No ZNA 14. Headspace in VOA Vials (>6mm): Vest No ZNA 15. Trip Blank Present: Vest No ZNA 16. Trip Blank Custody Seals Present Vest No ZNA Pace Trip Blank Lot # (if purchased):	All containers needing preservation are found to be in			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) Image: Second preservative Samples checked for dechlorination: Yes No 14. Headspace in VOA Vials (>6mm): Yes No 15. Trip Blank Present: Yes No 16. Trip Blank Custody Seals Present Yes No No.4 Pace Trip Blank Lot # (if purchased):	compliance with EPA recommendation.	Initial when	Lot # of added	
Samples checked for dechlorination: Image: Present in the second sec	exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)		preservative	
Headspace in VOA Vials (>6mm): I ves INO ZIAVA IS. Trip Blank Present: I ves INO INVA Trip Blank Custody Seals Present I ves INO INVA Pace Trip Blank Lot # (if purchased): I for INVA Pace Trip Blank Lot # (if purchased): I for INVA Person Contacted: Date/Time: Comments/ Resolution: I for Inva Person Contacted: I for Inva Image: I for Inva Project Manager Review: I for Inva	Samples checked for dechlorination:			
Trip Blank Present: Yes No No To. Trip Blank Custody Seals Present Yes No No No Pace Trip Blank Lot # (if purchased):	Headspace in VOA Vials (>6mm):			
Trip Blank Custody Seals Present Image: Constraint of the second sec	Trip Blank Present:	Lives Lino -Lin/A To.	•	
Pace Trip Blank Lot # (if purchased): Field Data Required? Y / N Person Contacted: Date/Time:	Trip Blank Custody Seals Present			
Client Notification/ Resolution:	Pace Trip Blank Lot # (if purchased):			
Person Contacted:	Client Notification/ Resolution:		Field Data Required?	Y / N
Comments/ Resolution:	Person Contacted:	Date/Time:		
Project Manager Review: Date:	Comments/ Resolution:			
Project Manager Review: Date:				
Project Manager Review: Date:	5			
Project Manager Review: Date:				
Project Manager Review: Date:				
Project Manager Heview:			Date:	
	Project manager Neview:			

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



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

October 15, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 2610159

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc. Rebecca Thornton, Pace Analytical Atlanta





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 2610159

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204


SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610159001	GWA-2	Water	10/04/18 09:49	10/05/18 11:30
2610159002	GWC-5	Water	10/04/18 11:05	10/05/18 11:30
2610159003	GWC-6	Water	10/04/18 12:58	10/05/18 11:30



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:2610159

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610159001		EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610159002	GWC-5	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610159003	GWC-6	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

Sample: GWA-2	Lab ID: 2610159001		Collected: 10/04/18 09:49		Received: 10/05/18 11:30 Matrix: Water				
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 16:23	10/12/18 16:22	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 16:22	7440-38-2	
Barium	0.18	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 16:22	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 16:22	7440-41-7	
Boron	0.082	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 16:22	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 16:22	7440-43-9	
Calcium	41.7	mg/L	25.0	0.69	50	10/09/18 16:23	10/12/18 16:28	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 16:22	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 16:22	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 16:22	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 16:22	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 16:22	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 16:22	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 16:22	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 16:22	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 16:22	7440-62-2	
Zinc	0.0041J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 16:22	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	233	mg/L	25.0	10.0	1		10/08/18 18:01		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.5	mg/L	0.25	0.024	1		10/10/18 17:26	16887-00-6	
Fluoride	0.25J	mg/L	0.30	0.029	1		10/10/18 17:26	16984-48-8	
Sulfate	17.4	mg/L	1.0	0.017	1		10/10/18 17:26	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

Sample: GWC-5	Lab ID: 2610159002		Collected: 10/04/18 11:05			Received: 10/	Received: 10/05/18 11:30 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	0.00078	1	10/09/18 16:23	10/12/18 17:20	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 17:20	7440-38-2		
Barium	0.084	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 17:20	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 17:20	7440-41-7		
Boron	0.066	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 17:20	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 17:20	7440-43-9		
Calcium	73.0	mg/L	25.0	0.69	50	10/09/18 16:23	10/12/18 17:25	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 17:20	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 17:20	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 17:20	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 17:20	7439-92-1		
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:20	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 17:20	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:20	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 17:20	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 17:20	7440-62-2		
Zinc	0.0028J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 17:20	7440-66-6	В	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C							
Total Dissolved Solids	385	mg/L	25.0	10.0	1		10/08/18 18:01			
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0							
Chloride	3.2	mg/L	0.25	0.024	1		10/10/18 17:49	16887-00-6		
Fluoride	0.16J	mg/L	0.30	0.029	1		10/10/18 17:49	16984-48-8		
Sulfate	90.3	mg/L	10.0	0.17	10		10/11/18 03:44	14808-79-8		



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

Sample: GWC-6	Lab ID: 2610159003		Collected: 10/04/18 12:58			Received: 10/	Received: 10/05/18 11:30 Matrix: Water			
5			Report		55			040.1	. .	
Parameters	_ Results _	Units	Limit	MDL		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	0.00078	1	10/09/18 16:23	10/12/18 17:31	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 17:31	7440-38-2		
Barium	0.19	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 17:31	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 17:31	7440-41-7		
Boron	0.038J	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 17:31	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 17:31	7440-43-9		
Calcium	65.5	mg/L	25.0	0.69	50	10/09/18 16:23	10/12/18 17:37	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 17:31	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 17:31	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 17:31	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 17:31	7439-92-1		
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:31	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 17:31	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:31	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 17:31	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 17:31	7440-62-2		
Zinc	0.0039J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 17:31	7440-66-6	В	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C							
Total Dissolved Solids	371	mg/L	25.0	10.0	1		10/08/18 18:01			
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0							
Chloride	2.2	mg/L	0.25	0.024	1		10/10/18 18:12	16887-00-6		
Fluoride	0.17J	mg/L	0.30	0.029	1		10/10/18 18:12	16984-48-8		
Sulfate	137	mg/L	10.0	0.17	10		10/11/18 04:07	14808-79-8		



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

QC Batch:	15051	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Sam	ples: 2610159001, 2	310159002, 2610159003	

Matrix: Water

METHOD BLANK: 67344

Associated Lab Samples:	2610159001, 2610159002, 26	10159003				
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/12/18 16:10	
Arsenic	mg/L	ND	0.0050	0.00057	10/12/18 16:10	
Barium	mg/L	ND	0.010	0.00078	10/12/18 16:10	
Beryllium	mg/L	ND	0.0030	0.000050	10/12/18 16:10	
Boron	mg/L	ND	0.040	0.0039	10/12/18 16:10	
Cadmium	mg/L	ND	0.0010	0.000093	10/12/18 16:10	
Calcium	mg/L	ND	0.50	0.014	10/12/18 16:10	
Chromium	mg/L	ND	0.010	0.0016	10/12/18 16:10	
Cobalt	mg/L	ND	0.010	0.00052	10/12/18 16:10	
Copper	mg/L	ND	0.025	0.0013	10/12/18 16:10	
Lead	mg/L	ND	0.0050	0.00027	10/12/18 16:10	
Nickel	mg/L	ND	0.010	0.00095	10/12/18 16:10	
Selenium	mg/L	ND	0.010	0.0014	10/12/18 16:10	
Silver	mg/L	ND	0.010	0.00095	10/12/18 16:10	
Thallium	mg/L	ND	0.0010	0.00014	10/12/18 16:10	
Vanadium	mg/L	ND	0.010	0.0019	10/12/18 16:10	
Zinc	mg/L	0.0029J	0.010	0.0021	10/12/18 16:10	

LABORATORY CONTROL SAMPLE: 67345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antinonau			0.44	400	00.400	
Antimony	mg/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	104	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	.1	0.10	104	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.11	106	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Copper	mg/L	.1	0.11	105	80-120	
Lead	mg/L	.1	0.10	103	80-120	
Nickel	mg/L	.1	0.11	106	80-120	
Selenium	mg/L	.1	0.10	101	80-120	
Silver	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.1	0.10	104	80-120	
Vanadium	mg/L	.1	0.11	105	80-120	
Zinc	mg/L	.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.



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

MATRIX SPIKE & MATRIX SPIK	E DUPLIC	ATE: 67346			67347							
			MS	MSD								
		2610159001	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	.1	.1	0.11	0.11	109	107	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	105	75-125	1	20	
Barium	mg/L	0.18	.1	.1	0.29	0.29	116	107	75-125	3	20	
Beryllium	mg/L	ND	.1	.1	0.096	0.094	96	94	75-125	2	20	
Boron	mg/L	0.082	1	1	1.0	1.0	95	92	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	102	75-125	2	20	
Calcium	mg/L	41.7	1	1	50.9	43.6	917	191	75-125	15	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	108	103	75-125	5	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	3	20	
Copper	mg/L	ND	.1	.1	0.10	0.10	104	100	75-125	4	20	
Lead	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20	
Nickel	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	103	101	75-125	2	20	
Silver	mg/L	ND	.1	.1	0.10	0.099	104	99	75-125	4	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	100	75-125	0	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	109	106	75-125	3	20	
Zinc	mg/L	0.0041J	.1	.1	0.11	0.10	101	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: Pace Project No :	Plant Hammond - 2610159	Huffaker Road								
QC Batch:	14931		Analysis	Method:	SM 2540C	SM 2540C				
QC Batch Method:	SM 2540C		Analysis	Description:	2540C Total [Dissolved Solid	s			
Associated Lab Sar	mples: 26101590	01, 2610159002,	2610159003							
LABORATORY CO	NTROL SAMPLE:	66900								
			Spike	LCS	LCS	% Rec				
Parar	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers			
Total Dissolved Soli	ds	mg/L	400	406	102	84-108	3			
SAMPLE DUPLICA	TE: 66901									
			261016400	1 Dup		Max	(
Parar	neter	Units	Result	Result	RPD	RPE	Qualifiers	_		
Total Dissolved Soli	ds	mg/L	11.	0J 17	.0J	43	10 D6			
SAMPLE DUPLICA	TE: 66902									
			261016200	2 Dup		Max	(
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers			
Total Dissolved Soli	ds	mg/L	1	35	128	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.



Analysis Method:

EPA 300.0

Project.	Plant Hammond - Huffaker Road
FIUJECI.	Fiant hammonu - munaker Kuau

Pace Project No.:	2610159
-------------------	---------

QC Batch:	15084

QC Batch Method: EPA 300.0 Associated Lab Samples: 261015	9001, 2610159002,	Analysis 2610159003	Description:	300.0 IC Anion	S	
METHOD BLANK: 67495		Ма	trix: Water			
Associated Lab Samples: 261015	9001, 2610159002,	2610159003				
		Blank	Reporting	J		
Parameter	Units	Result	Limit	MDL	Analyz	ed Qualifiers
Chloride	mg/L	0.1	6J 0	.25 0.0	024 10/10/18	14:23
Fluoride	mg/L	1	ND 0	.30 0.0	029 10/10/18	14:23
Sulfate	mg/L	1	ND	1.0 0.0	017 10/10/18	14:23
LABORATORY CONTROL SAMPLE	: 67496					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10	100	90-110	
Sulfate	ma/l	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIK	E DUPLIC	ATE: 67497			67498							
			MS	MSD								
		2610158001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	6.1	10	10	16.5	16.5	104	105	90-110	0	15	
Fluoride	mg/L	0.24J	10	10	10.3	10.3	100	100	90-110	0	15	
Sulfate	mg/L	209	10	10	154	154	-555	-554	90-110	0	15	E,M1

MATRIX SPIKE SAMPLE:	67499						
		2610158002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	1.4	10	11.9	105	90-110	
Fluoride	mg/L	0.17J	10	10.2	100	90-110	
Sulfate	mg/L	5.2	10	15.6	104	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 - Huffaker Road

Pace Project No.: 2610159

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- B Analyte was detected in the associated method blank.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- 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 - Huffaker Road

Pace Project No.: 2610159

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610159001	GWA-2	EPA 3005A	15051	EPA 6020B	15111
2610159002	GWC-5	EPA 3005A	15051	EPA 6020B	15111
2610159003	GWC-6	EPA 3005A	15051	EPA 6020B	15111
2610159001	GWA-2	SM 2540C	14931		
2610159002	GWC-5	SM 2540C	14931		
2610159003	GWC-6	SM 2540C	14931		
2610159001	GWA-2	EPA 300.0	15084		
2610159002	GWC-5	EPA 300.0	15084		
2610159003	GWC-6	EPA 300.0	15084		

Pace Aralytical

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

Required	d Client Information:	Section B Required P	roject li	nformation				Sec	tion C	rmation									Pag			ð	
Company	V: Georgia Power - Coal Combustion Residuals	Report To:	Joju A	Vbraham / L	auren Petty			Atte.	ntion:	scsin	voices	@south	ternco.	com			Γ	r	1				
Address.	2480 Maner Road	Copy To:	Geos	yntec				Corr	N Anedu	ame													
	Atlanta, GA 30339							Add	ress:								19 A	and a state	Re	egulatory	Agency	13 - A	and and
Email:	jabraham@southernco.com	Purchase O	hrder #	SCS10	348606			Pac	e Quote.														
hone:	(404)506-7239 Fax	Project Nam	ne:	Plant Ham	nond - Huff.	aker Road		Pac	e Projec	t Manage	er. b	letsy.mcd.	aniel@p	acelabs	s.com,		100	Souther State	Distances of the	State / Lo	cation	S. S. S. S.	1111
Requeste	ed Due Date Standerd TAT	Project #:	S	wess				Pac	e Profile	# 32	28.3									GA			
ſ			ŀ				ſ	F	-				1990		Request	ed Analy	sis Filter	(N/A) pa.	THE REAL PROPERTY.	S. A. CHILD			
	AUGLER	1000	(f) ef (f)	(dWO	COLLE	ECTED		1		Prese	ervative	0	N/A	5	~							1. St. St. St. St. St. St. St. St. St. St	
	SAMPLE ID SoliSolid	Nation DW	seboo bilev ee	0=0 BAHD=0	TAAT		9	s correction					fest	State) *						(N/A) (
# MƏTI	One Character per box, Of (A-Z, 0-91, -) Offer Sample ids must be unique Tissue	WP AR 15	 a) adob XIRTAM 		TIME	DATE	TIME	# OF CONTAINERS	H2SO4 Unpreserved	нст НИОЗ	HOBN	Methanol Mazszo3	other F sezylsnA	Hetals (App. III + TDS.Chloride, Flu						annold) leubisaß	22		
-F	GWA-2		53	1/1/0 3	9 0939	31/1/01	6449	4	-	3				XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	0					2			
2	GWC-S		in C	1/4/01 5	1055	81/12/01	Soll	ý	-	m			1	XX	0					2			
6	Gwl-6		1-3	5 10/1/18	8421	10/1/18	1258	5		M			Г	R	0			_		5			
4				-									1							5			
5									-														
9					1		1	0	1					\vdash									
7						/	T	Y	8	1							•						
œ									1	\mathbb{A}		, i											
6											[Y	No.										
10														-									
11																			$\left \right $				
12														-						ί			
	АОДІТІОНАЦ СОММЕНТЯ		RELINQL	IISHED BY	AFFILIATIO	3, - N	DATE		TME		AC	CEPTED	BY I AFF		Z	記念	DATE	IWL	100	SAN	IPLE CON	DITTONS	1
letals list	t: Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Cu,Pb,Ni,Se,Ag,Tl,V,Zn	2	P	M	P		31/1/2	180	2	Na	20		R. V.	5		<u> </u>	14/19	180	6	-	-		1
		IN.	and	20	ilahu	2	1/1/0	8 19	B	11	151	au	1			N.	14/18	13	A	-			
		les.	151	cent			10/5/	18/10	002	2	A	n.	SUVE	100	pact	1	0/5/1	1001	0	-			
										1	20	Lal	MAN	an		10/1	25/18	3112	4 02	1 st	Q	R	R
Pa	104.764.04.60				SAMPLE	R NAME A	ND SIGN	ATURE	100	1000			A STATE	AN AL				tangen i		00			
ge 1	ACTATOZ . HOM				PRIN	T Name o	f SAMPLE	ER:	ich-	Na	NUCO	5							Juid	pevie	<u>مولاً</u> () er id	səld
4 of					SIGN	IATURE 0	f SAMPLE	:R:	0	0	M	7		DAT	E Signer	101	91/18		TEM	Book	N/A)	000) N/Y)	ms2 Intact
15										5	•	A											
	2610159																						

miling	Sam	ple Co	ndition	Upon Receip	t		
Pace Analytical	Client Name:	4	1A	Power	Project #		
	Onerne Harrie.		4	1			
Courier: 🗌 Fed Ex 🗌 UF	S USPS Clien		mercial	Pace Other	MO# :	2610159	
Tracking #:					PM: BM	Due Date:	10/12/18
Custody Seal on Cooler/Bo	ox Present: 🖉 yes	no	Seals	intact: Ves	CLIENT:	CAPower-CCR	
Packing Material: Bubb	le Wrap 🔄 Bubble	Bags 🦯	None	Other			
Thermometer Used	83	Type of I	ce: Wet	Blue None	Samples on ice, o	cooling process has begun	
Cooler Temperature Temp should be above freezing	4°C.	Biologic	al Tissue	is Frozen: Yes No Comments:	o Date and Init contents:_	ials of person examining	2
Chain of Custody Present:		Ares D	No □N/A	1.			
Chain of Custody Filled Out:		Tres D	No □N/A	2.			
Chain of Custody Relinquish	ed:	Types D	No □N/A	3.			
Sampler Name & Signature	on COC:	ETYes 🗆	No ⊡N/A	4.			
Samples Arrived within Hold	Time:	Types D	No 🗆 N/A	5.			
Short Hold Time Analysis (<72hr):	🗆 Yes 🛛	No 🗆 N/A	6.			
Rush Turn Around Time R	equested:	🗆 Yes 🛛	No □N/A	7.			
Sufficient Volume:		Ates 0	No 🗆 N/A	8.			N
Correct Containers Used:		+Tyes 🗆	No 🗆 N/A	9.			
-Pace Containers Used:		_BYes []	No 🗆 N/A	```			
Containers Intact:		Ales D	No □N/A	10.			
Filtered volume received for	Dissolved tests	🗆 Yes 🗆	No -EN/A	11.			
Sample Labels match COC:	-4	-Eres 🗆	No 🗆 N/A	12.			
-Includes date/time/ID/An	alysis Matrix:	w					
All containers needing preservatio	n have been checked.	Pres 🗆	No 🗆 N/A	13.		58 - 3	
All containers needing preserva compliance with EPA recommen	tion are found to be in ndation.	, Tes 🗆	No 🗆 N/A				
exceptions: VOA, coliform, TOC, O	&G, WI-DRO (water)	🗆 Yes 📿	No	completed	preservative		
Samples checked for dechlo	orination:	□Yes □	No EN/A	14.			
Headspace in VOA Vials (>	6mm):	□Yes □	No EN/A	15.			
Trip Blank Present:		□Yes □		16.			
Trip Blank Custody Seals Pr	resent	⊡Yes ⊂	NO ON/A				
Pace Trip Blank Lot # (if pur	chased):	-		-			
Client Notification/ Besolu	tion:				Field Data Requ	ired? Y / N	
Person Contacted:			Date	/Time:			
Comments/ Resolution:							
							0
Project Manager Review	v:				Date:		

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



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

October 15, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 2610162

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc. Rebecca Thornton, Pace Analytical Atlanta





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 2610162

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610162001	GWA-3	Water	10/04/18 10:30	10/05/18 11:30
2610162002	GWA-11	Water	10/04/18 12:10	10/05/18 11:30
2610162003	GWC-10	Water	10/04/18 13:35	10/05/18 11:30
2610162004	GWC-22	Water	10/04/18 14:40	10/05/18 11:30
2610162005	GWC-21	Water	10/04/18 15:49	10/05/18 11:30
2610162006	GWC-19	Water	10/04/18 17:05	10/05/18 11:30



SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610162001	GWA-3	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610162002	GWA-11	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610162003	GWC-10	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610162004	GWC-22	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610162005	GWC-21	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610162006	GWC-19	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Sample: GWA-3	Lab ID:	2610162001	Collecte	ed: 10/04/18	8 10:30	Received: 10/	05/18 11:30 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	0.00078	1	10/09/18 16:23	10/12/18 17:48	7440-36-0	
Arsenic	0.00080J	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 17:48	7440-38-2	
Barium	0.16	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 17:48	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 17:48	7440-41-7	
Boron	0.16	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 17:48	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 17:48	7440-43-9	
Calcium	75.2	mg/L	25.0	0.69	50	10/09/18 16:23	10/12/18 17:54	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 17:48	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 17:48	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 17:48	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 17:48	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:48	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 17:48	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:48	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 17:48	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 17:48	7440-62-2	
Zinc	0.0043J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 17:48	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	472	mg/L	25.0	10.0	1		10/08/18 18:02		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	3.4	mg/L	0.25	0.024	1		10/10/18 23:55	16887-00-6	
Fluoride	0.24J	mg/L	0.30	0.029	1		10/10/18 23:55	16984-48-8	
Sulfate	117	ma/l	1.0	0.017	1		10/10/18 23:55	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Sample: GWA-11	Lab ID:	2610162002	Collecte	ed: 10/04/18	8 12:10	Received: 10/	05/18 11:30 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	0.00078	1	10/09/18 16:23	10/12/18 18:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 18:00	7440-38-2	
Barium	0.033	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 18:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 18:00	7440-41-7	
Boron	0.035J	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 18:00	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 18:00	7440-43-9	
Calcium	21.3J	mg/L	25.0	0.69	50	10/09/18 16:23	10/12/18 18:05	7440-70-2	D3
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 18:00	7440-47-3	
Cobalt	0.00072J	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 18:00	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 18:00	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 18:00	7439-92-1	
Nickel	0.0023J	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 18:00	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 18:00	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 18:00	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 18:00	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 18:00	7440-62-2	
Zinc	0.0046J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 18:00	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	135	mg/L	25.0	10.0	1		10/08/18 18:02		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.8	mg/L	0.25	0.024	1		10/11/18 00:41	16887-00-6	
Fluoride	0.15J	mg/L	0.30	0.029	1		10/11/18 00:41	16984-48-8	
Sulfate	15.6	ma/L	1.0	0.017	1		10/11/18 00:41	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Sample: GWC-10	Lab ID:	2610162003	Collecte	ed: 10/04/18	8 13:35	Received: 10/	05/18 11:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 16:23	10/12/18 18:30	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 18:30	7440-38-2	
Barium	0.20	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 18:30	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 18:30	7440-41-7	
Boron	0.038J	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 18:30	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 18:30	7440-43-9	
Calcium	51.2	mg/L	25.0	0.69	50	10/09/18 16:23	10/12/18 18:36	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 18:30	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 18:30	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 18:30	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 18:30	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 18:30	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 18:30	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 18:30	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 18:30	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 18:30	7440-62-2	
Zinc	0.0033J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 18:30	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	222	mg/L	25.0	10.0	1		10/08/18 18:02		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.1	mg/L	0.25	0.024	1		10/10/18 21:38	16887-00-6	
Fluoride	0.16J	mg/L	0.30	0.029	1		10/10/18 21:38	16984-48-8	
Sulfate	29.5	mg/L	1.0	0.017	1		10/10/18 21:38	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Sample: GWC-22	Lab ID:	2610162004	Collecte	ed: 10/04/18	8 14:40	Received: 10/	Received: 10/05/18 11:30 Matrix: Water		
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 16:23	10/12/18 18:41	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 18:41	7440-38-2	
Barium	0.10	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 18:41	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 18:41	7440-41-7	
Boron	0.065	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 18:41	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 18:41	7440-43-9	
Calcium	50.4	mg/L	25.0	0.69	50	10/09/18 16:23	10/12/18 18:47	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 18:41	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 18:41	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 18:41	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 18:41	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 18:41	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 18:41	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 18:41	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 18:41	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 18:41	7440-62-2	
Zinc	0.0030J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 18:41	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	215	mg/L	25.0	10.0	1		10/08/18 18:02		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.7	mg/L	0.25	0.024	1		10/10/18 22:01	16887-00-6	
Fluoride	0.14J	mg/L	0.30	0.029	1		10/10/18 22:01	16984-48-8	
Sulfate	6.4	ma/L	1.0	0.017	1		10/10/18 22:01	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Sample: GWC-21	Lab ID:	2610162005	Collected: 10/04/18 15:49			Received: 10/05/18 11:30 Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	A 3005A				
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 16:23	10/12/18 18:53	7440-36-0		
Arsenic	0.0034J	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 18:53	7440-38-2		
Barium	0.079	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 18:53	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 18:53	7440-41-7		
Boron	0.029J	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 18:53	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 18:53	7440-43-9		
Calcium	48.6	mg/L	25.0	0.69	50	10/09/18 16:23	10/12/18 18:58	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 18:53	7440-47-3		
Cobalt	0.0065J	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 18:53	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 18:53	7440-50-8		
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 18:53	7439-92-1		
Nickel	0.012	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 18:53	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 18:53	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 18:53	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 18:53	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 18:53	7440-62-2		
Zinc	0.0077J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 18:53	7440-66-6	В	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C							
Total Dissolved Solids	152	mg/L	25.0	10.0	1		10/08/18 18:02			
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0							
Chloride	2.4	mg/L	0.25	0.024	1		10/10/18 22:23	16887-00-6		
Fluoride	0.15J	mg/L	0.30	0.029	1		10/10/18 22:23	16984-48-8		
Sulfate	19.3	mg/L	1.0	0.017	1		10/10/18 22:23	14808-79-8		



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Sample: GWC-19	Lab ID:	Lab ID: 2610162006		ed: 10/04/18	8 17:05	Received: 10/	Received: 10/05/18 11:30 Matrix: Water		
_			Report			_			
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 16:23	10/12/18 19:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 19:04	7440-38-2	
Barium	0.16	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 19:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 19:04	7440-41-7	
Boron	0.17	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 19:04	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 19:04	7440-43-9	
Calcium	43.7	mg/L	25.0	0.69	50	10/09/18 16:23	10/12/18 19:10	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 19:04	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 19:04	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 19:04	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 19:04	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 19:04	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 19:04	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 19:04	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 19:04	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 19:04	7440-62-2	
Zinc	0.013	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 19:04	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	231	mg/L	25.0	10.0	1		10/08/18 18:02		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.0	mg/L	0.25	0.024	1		10/10/18 22:46	16887-00-6	
Fluoride	0.21J	mg/L	0.30	0.029	1		10/10/18 22:46	16984-48-8	
Sulfate	15.9	mg/L	1.0	0.017	1		10/10/18 22:46	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

QC Batch:	15051			Analysi	s Method:	EPA 602	:0B
QC Batch Method:	EPA 3	8005A		Analysi	s Description:	6020B N	1ET
Associated Lab Samp	les:	2610162001,	2610162002,	2610162003,	2610162004,	2610162005,	2610162006

METHOD BLANK: 67344

Matrix: Water

Associated Lab Samples: 2610162001, 2610162002, 2610162003, 2610162004, 2610162005, 2610162006

	Blank	Reporting			
Units	Result	Limit	MDL	Analyzed	Qualifiers
mg/L	ND	0.0030	0.00078	10/12/18 16:10	
mg/L	ND	0.0050	0.00057	10/12/18 16:10	
mg/L	ND	0.010	0.00078	10/12/18 16:10	
mg/L	ND	0.0030	0.000050	10/12/18 16:10	
mg/L	ND	0.040	0.0039	10/12/18 16:10	
mg/L	ND	0.0010	0.000093	10/12/18 16:10	
mg/L	ND	0.50	0.014	10/12/18 16:10	
mg/L	ND	0.010	0.0016	10/12/18 16:10	
mg/L	ND	0.010	0.00052	10/12/18 16:10	
mg/L	ND	0.025	0.0013	10/12/18 16:10	
mg/L	ND	0.0050	0.00027	10/12/18 16:10	
mg/L	ND	0.010	0.00095	10/12/18 16:10	
mg/L	ND	0.010	0.0014	10/12/18 16:10	
mg/L	ND	0.010	0.00095	10/12/18 16:10	
mg/L	ND	0.0010	0.00014	10/12/18 16:10	
mg/L	ND	0.010	0.0019	10/12/18 16:10	
mg/L	0.0029J	0.010	0.0021	10/12/18 16:10	
	Units mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	BlankUnitsResultmg/LNDmg/L0.0029J	Blank Reporting Units Result Limit mg/L ND 0.0030 mg/L ND 0.0050 mg/L ND 0.0030 mg/L ND 0.0040 mg/L ND 0.0010 mg/L ND 0.010 mg/L ND 0.010 mg/L ND 0.010 mg/L ND 0.025 mg/L ND 0.010 mg/L <td>Blank Reporting Units Result Limit MDL mg/L ND 0.0030 0.00078 mg/L ND 0.010 0.00057 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00078 mg/L ND 0.0030 0.000050 mg/L ND 0.040 0.0039 mg/L ND 0.010 0.00093 mg/L ND 0.010 0.000093 mg/L ND 0.010 0.0016 mg/L ND 0.010 0.00052 mg/L ND 0.010 0.00027 mg/L ND 0.010 0.00095 mg/L ND 0.010 0.00095 mg/L ND 0.010 0.00095 mg/L ND 0.010 0.00014 mg/L ND 0.010 0.00014</td> <td>Blank Reporting Units Result Limit MDL Analyzed mg/L ND 0.0030 0.00078 10/12/18 16:10 mg/L ND 0.0050 0.00057 10/12/18 16:10 mg/L ND 0.010 0.00078 10/12/18 16:10 mg/L ND 0.010 0.00078 10/12/18 16:10 mg/L ND 0.0030 0.000050 10/12/18 16:10 mg/L ND 0.0040 0.0039 10/12/18 16:10 mg/L ND 0.0010 0.00093 10/12/18 16:10 mg/L ND 0.010 0.00093 10/12/18 16:10 mg/L ND 0.010 0.0016 10/12/18 16:10 mg/L ND 0.010 0.00052 10/12/18 16:10 mg/L ND 0.010 0.00027 10/12/18 16:10 mg/L ND 0.010 0.0014 10/12/18 16:10 mg/L ND 0.010 0.0014 10/12/18 16:10</td>	Blank Reporting Units Result Limit MDL mg/L ND 0.0030 0.00078 mg/L ND 0.010 0.00057 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00078 mg/L ND 0.010 0.00078 mg/L ND 0.0030 0.000050 mg/L ND 0.040 0.0039 mg/L ND 0.010 0.00093 mg/L ND 0.010 0.000093 mg/L ND 0.010 0.0016 mg/L ND 0.010 0.00052 mg/L ND 0.010 0.00027 mg/L ND 0.010 0.00095 mg/L ND 0.010 0.00095 mg/L ND 0.010 0.00095 mg/L ND 0.010 0.00014 mg/L ND 0.010 0.00014	Blank Reporting Units Result Limit MDL Analyzed mg/L ND 0.0030 0.00078 10/12/18 16:10 mg/L ND 0.0050 0.00057 10/12/18 16:10 mg/L ND 0.010 0.00078 10/12/18 16:10 mg/L ND 0.010 0.00078 10/12/18 16:10 mg/L ND 0.0030 0.000050 10/12/18 16:10 mg/L ND 0.0040 0.0039 10/12/18 16:10 mg/L ND 0.0010 0.00093 10/12/18 16:10 mg/L ND 0.010 0.00093 10/12/18 16:10 mg/L ND 0.010 0.0016 10/12/18 16:10 mg/L ND 0.010 0.00052 10/12/18 16:10 mg/L ND 0.010 0.00027 10/12/18 16:10 mg/L ND 0.010 0.0014 10/12/18 16:10 mg/L ND 0.010 0.0014 10/12/18 16:10

LABORATORY CONTROL SAMPLE: 67345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ma/l		0.11	108	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	104	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	.1	0.10	104	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.11	106	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Copper	mg/L	.1	0.11	105	80-120	
Lead	mg/L	.1	0.10	103	80-120	
Nickel	mg/L	.1	0.11	106	80-120	
Selenium	mg/L	.1	0.10	101	80-120	
Silver	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.1	0.10	104	80-120	
Vanadium	mg/L	.1	0.11	105	80-120	
Zinc	mg/L	.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.



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

MATRIX SPIKE & MATRIX SPIKE	DUPLIC	ATE: 67346			67347							
			MS	MSD								
		2610159001	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	.1	.1	0.11	0.11	109	107	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	105	75-125	1	20	
Barium	mg/L	0.18	.1	.1	0.29	0.29	116	107	75-125	3	20	
Beryllium	mg/L	ND	.1	.1	0.096	0.094	96	94	75-125	2	20	
Boron	mg/L	0.082	1	1	1.0	1.0	95	92	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	102	75-125	2	20	
Calcium	mg/L	41.7	1	1	50.9	43.6	917	191	75-125	15	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	108	103	75-125	5	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	3	20	
Copper	mg/L	ND	.1	.1	0.10	0.10	104	100	75-125	4	20	
Lead	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20	
Nickel	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	103	101	75-125	2	20	
Silver	mg/L	ND	.1	.1	0.10	0.099	104	99	75-125	4	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	100	75-125	0	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	109	106	75-125	3	20	
Zinc	mg/L	0.0041J	.1	.1	0.11	0.10	101	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: Pace Project No.:	Plant Hammond - 2610162	Huffaker Road						
QC Batch:	14931		Analysis M	lethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total D	Dissolved Solids		
Associated Lab Sar	nples: 26101620	01, 2610162002, 2	2610162003, 26	10162004, 261	0162005, 2610	162006		
LABORATORY COI	NTROL SAMPLE:	66900						
			Spike	LCS	LCS	% Rec		
Paran	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Soli	ds	mg/L	400	406	102	84-108		
SAMPLE DUPLICA	TE: 66901							
_			2610164001	Dup		Max		
Paran	neter	Units	Result	Result		RPD	Qualifiers	_
Total Dissolved Soli	ds	mg/L	11.0)J 17.	OJ	43	10 D6	
SAMPLE DUPLICA	TE: 66902							
			2610162002	Dup		Max		
Paran	neter	Units	Result	Result	RPD	RPD	Qualifiers	_
Total Dissolved Soli	ds	mg/L	13	5 1	28	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.



Project:	Plant Ham	mond - Huff	aker Road										
Pace Project No.:	2010102			A in a li in	ia Mathad	. r	DA 200 0						
QC Batch:	15084			Analys	is ivietnoa	: E	PA 300.0						
QC Batch Method:	EPA 300.	.0		Analys	is Descrip	tion: 3	00.0 IC Anio	ns					
Associated Lab Sar	mples: 26	510162001,	2610162002, 2	610162003	, 2610162	004, 26101	62005, 2610	162006					
METHOD BLANK:	67495			Ν	Aatrix: Wa	iter							
Associated Lab Sar	nples: 26	510162001,	2610162002, 2	610162003	, 2610162	004, 26101	62005, 2610	162006					
				Blank	. F	Reporting							
Para	neter		Units	Resul	t	Limit	MDL	/	Analyzed	Qua	alifiers		
Chloride			mg/L	(0.16J	0.25	0	.024 10/	10/18 14:23	3			
Fluoride			mg/L		ND	0.30	0	.029 10/	10/18 14:23	3			
Sulfate			mg/L		ND	1.0	0	.017 10/	10/18 14:23	3			
			400										
LABORATORY CO	NTROL SAN	VIPLE: 674	496	Sniko		2	109	% Por					
Para	neter		Units	Conc	Resi	ult	% Rec	/ inits	, 	alifiers			
Chlorido						10.5	105				-		
Eluoride			mg/L	10		10.5	105	90	-110 -110				
Sulfate			mg/L	10		10 7	100	90)-110)-110				
			g/ =										
MATRIX SPIKE & M	ATRIX SPI	KE DUPLIC	ATE: 67497			67498							
				MS	MSD								
Deveryor		l la ta	2610158001	Spike	Spike	MS	MSD	MS % Data	MSD	% Rec		Max	0
Paramete	er	Units		Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Quai
Chloride		mg/L	6.1	10	10	16.5	16.5	104	105	90-110	0	15	
Fluoride		mg/L	0.24J	10	10	10.3	10.3	100	100	90-110	0	15	
Sulfate		mg/L	209	10	10	154	154	-555	-554	90-110	0	15	E,M1
MATRIX SPIKE SA	MPLE:	674	499										
Deres	notor	-	Linite	261015	58002	Spike	MS	N	IS	% Rec		0	fiore
Parar	netei		Units	Kes	uit		Result			LITTILS		Quall	ners
Chloride			mg/L		1.4	10	11	.9	105	90-	110		
Fluoride			mg/L		0.17J	10	10	.2	100	90-	110		
C. Ifete					~ /	(11)	16	n	111/1	U (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 - Huffaker Road

Pace Project No.: 2610162

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.
- D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- 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 - Huffaker Road

Pace Project No.: 2610162

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610162001	GWA-3	EPA 3005A	15051	EPA 6020B	15111
2610162002	GWA-11	EPA 3005A	15051	EPA 6020B	15111
2610162003	GWC-10	EPA 3005A	15051	EPA 6020B	15111
2610162004	GWC-22	EPA 3005A	15051	EPA 6020B	15111
2610162005	GWC-21	EPA 3005A	15051	EPA 6020B	15111
2610162006	GWC-19	EPA 3005A	15051	EPA 6020B	15111
2610162001	GWA-3	SM 2540C	14931		
2610162002	GWA-11	SM 2540C	14931		
2610162003	GWC-10	SM 2540C	14931		
2610162004	GWC-22	SM 2540C	14931		
2610162005	GWC-21	SM 2540C	14931		
2610162006	GWC-19	SM 2540C	14931		
2610162001	GWA-3	EPA 300.0	15084		
2610162002	GWA-11	EPA 300.0	15084		
2610162003	GWC-10	EPA 300.0	15084		
2610162004	GWC-22	EPA 300.0	15084		
2610162005	GWC-21	EPA 300.0	15084		
2610162006	GWC-19	EPA 300.0	15084		

on A	Section B	Section C	-	
d Client Information:	Required Project Information:	Invoice Information:	Page: Of	
Georgia Power - Coal Combustion Residue	als Report To: Joju Abraham / Lauren Petty	Attention scsinvoices@southernco.com		
Allanta GA 30339	Copy to: Geosymen	Address		
abraham@southernco.com	Purchase Order # SCS10348606	Pace Quote:	kegulatory Agency	
(404)506-7239 Fax	Project Name: Plant Hammond - Huffaker Road	Pace Project Manager. betsy modaniel@pacelabs.cr	m, State / Location	
d Due Date: Struck and TAT	Project #. (SU 58)	Pace Profile # 328.3	GA Analucic Ellored (VAN	
	MATRIX CODE	Preservatives	quesce Atlaysis Filtered (1/N	
SAMPLE ID	Dmhung Water DW de Water WY Cude Water WY Cude Product P Cude Product SL See C C START END	s s s s fest s fest s f s f s f s f s f s f s s s s s s s	(N/A) 0	
One Character per box. (A.2, 0-9 / , -) Sample Ids must be unique	More Work Ar	Reverses of the contrainers of contrainers of contrainers of the contr	Residual Chlorin	
GWA-3	1 84501 12.01 84501 8 5	e:36 2 4 1 3 XX	/	
GWA-11	1 0 10.4.8 11:55 10.4.2	2% \$\$ 4 3 X X	N	
6-146-10	2 & 0 8 ye 13:20 0 8 ye 3	XX 33-55-55	/ (G) / (I)	
CN1-22	2 316 0 137 18 318 18 20 10 1 2	X X X X X	/ C	
614-2)	Z P 107-18 12-39 10-2-19	5 45 2 H I 3 X X	2	
GW C-19	Ξ \ 2 \ 12 \ 12 \ 12 \ 12 \ 12 \ 12 \ 12	2.cs- 23 4 1 3 X Y	0 N	
	6			
			20	
		X C S		
			;	
ADDITTONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE TIME ACCEPTED BY / AFFILIATION	DATE TIME SAMPLE CONDITIONS	
tt: Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Cu,Pb,Ni,Se,Ag,TI,V,Zn	DAN GADIES IN	0.4.18 18:00 Narchos 1:10 hum	10/1/18 1800	
	Nardos Tilahun 10	0/4/18/1950 275/aw	10/5/15 1450-	
	littlaw 1	25/15 BOO Mill Non Van	e 10/2/18 1000	
0.00.000.#0[]		Malninaw	10/05/12/130468 8 8	
910107 . #OW		ID SIGNATURE	r ou C	
	SIGNATURE of	SAMPLER: CARBO	istaned: ////////////////////////////////////	

a minutes and a minutes of the second s	Sample Con	dition	Upon Receipt			tà
Pace Analytical Olioph	Name:	K	Parizon	Project #		
Client	Name. <u>G</u>	(F	10000		610162	
Courier: Fed Ex UPS USPS Tracking #:		nercial -	Pace Other		Due Date:	10/12/18
Custody Seal on Cooler/Box Present:	Jyes no	Seals	intact: Ves	CLIENT: GA	Power-CCR	
Packing Material: Bubble Wran	Bubble Bags	None	Other			
Thermometer Used	<u>5</u> Type of Ic	e: Wet	Blue None	Samples on ice, coo	ling process has begun	_
Cooler Temperature 4 0 Temp should be above freezing to 6°C	Biologica	l Tissue	is Frozen: Yes No Comments:	contents:	0/05/18 MR	-
Chain of Custody Present:		o □N/A	1.			
Chain of Custody Filled Out:	•□Yes □N	o □n/A	2.			
Chain of Custody Relinquished:	Yes DN	lo 🗆 N/A	3.			
Sampler Name & Signature on COC:	Tyes DN	lo 🗆 N/A	4.			
Samples Arrived within Hold Time:		lo 🗆 N/A	5.			
Short Hold Time Analysis (<72hr):	🗆 Yes 🛃	10 □N/A	6.			
Rush Turn Around Time Requested:	🗆 Yes 🗷	ío ⊡n/a	7.	· · · · · · · · · · · · · · · · · · ·		
Sufficient Volume:	, et es DA	lo □N/A	8.			
Correct Containers Used:	• Tves DN	ic 🗆 N/A	9.			
-Pace Containers Used:		lo □N/A	*			
Containers Intact: •		lo □N/A	10.			
Filtered volume received for Dissolved tes	sts 🗆 🖓 es 🗆 N	IO -EN/A	11.			
Sample Labels match COC:		lo 🗆 N/A	12.			
-Includes date/time/ID/Analysis M	latrix: \mathcal{W}					
All containers needing preservation have been ch	ecked.	No 🗆 N/A	13.			
All containers needing preservation are found compliance with EPA recommendation.	to be in 🖉 es 🗆 N	io ⊡N/A			,	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (wa	ater) 🗆 Yes 🖓	10	Initial when completed	Lot # of added preservative		
Samples checked for dechlorination:	⊡¥es ⊡t	NO EN/A	14.			
Headspace in VOA Vials (>6mm):	⊡Yes ⊡t	NO ZN/A	15.			
Trip Blank Present:	⊡¥es ⊡t	NO UN/A	16.			
Trip Blank Custody Seals Present	□¥es □t	NO ÓN/A	5.			
Pace Trip Blank Lot # (if purchased):						
Client Notification/ Resolution:				Field Data Require	d? Y/N	e.
Person Contacted:		Date/	/Time:			
Comments/ Resolution:						
				<i>b</i>		
Project Manager Review:		-		Date:		

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



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

October 15, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 2610212

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 08, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc. Rebecca Thornton, Pace Analytical Atlanta





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 2610212

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610212

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610212001	GWC-9	Water	10/05/18 10:35	10/08/18 11:00



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:2610212

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610212001	GWC-9	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610212

Sample: GWC-9	Lab ID: 2610212001		Collected: 10/05/18 10:35		Received: 10/08/18 11:00 Matrix: Wate		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	0.00078	1	10/10/18 13:15	10/12/18 21:24	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/10/18 13:15	10/12/18 21:24	7440-38-2	
Barium	0.070	mg/L	0.010	0.00078	1	10/10/18 13:15	10/12/18 21:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/10/18 13:15	10/12/18 21:24	7440-41-7	
Boron	0.017J	mg/L	0.040	0.0039	1	10/10/18 13:15	10/12/18 21:24	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/10/18 13:15	10/12/18 21:24	7440-43-9	
Calcium	37.8	mg/L	25.0	0.69	50	10/10/18 13:15	10/12/18 21:30	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/10/18 13:15	10/12/18 21:24	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/10/18 13:15	10/12/18 21:24	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/10/18 13:15	10/12/18 21:24	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/10/18 13:15	10/12/18 21:24	7439-92-1	
Nickel	0.0025J	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 21:24	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/10/18 13:15	10/12/18 21:24	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 21:24	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/10/18 13:15	10/12/18 21:24	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 21:24	7440-62-2	
Zinc	0.0044J	mg/L	0.010	0.0021	1	10/10/18 13:15	10/12/18 21:24	7440-66-6	В
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	236	mg/L	25.0	10.0	1		10/09/18 16:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	1.6	mg/L	0.25	0.024	1		10/11/18 11:07	16887-00-6	
Fluoride	0.18J	mg/L	0.30	0.029	1		10/11/18 11:07	16984-48-8	
Sulfate	81.9	mg/L	5.0	0.085	5		10/11/18 15:20	14808-79-8	


Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610212						
QC Batch: 15129		Analysis Meth	nod: EP/	A 6020B		
QC Batch Method: EPA 3005A		Analysis Des	cription: 602	20B MET		
Associated Lab Samples: 2610212001						
METHOD BLANK: 67679		Matrix:	Water			
Associated Lab Samples: 2610212001						
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/12/18 19:18	
Arsenic	mg/L	ND	0.0050	0.00057	10/12/18 19:18	
Barium	mg/L	ND	0.010	0.00078	10/12/18 19:18	
Beryllium	mg/L	ND	0.0030	0.000050	10/12/18 19:18	
Boron	mg/L	ND	0.040	0.0039	10/12/18 19:18	
Cadmium	mg/L	ND	0.0010	0.000093	10/12/18 19:18	
Calcium	mg/L	ND	0.50	0.014	10/12/18 19:18	
Chromium	mg/L	ND	0.010	0.0016	10/12/18 19:18	
Cobalt	mg/L	ND	0.010	0.00052	10/12/18 19:18	
Copper	mg/L	ND	0.025	0.0013	10/12/18 19:18	
Lead	mg/L	ND	0.0050	0.00027	10/12/18 19:18	
Nickel	mg/L	ND	0.010	0.00095	10/12/18 19:18	
Selenium	mg/L	ND	0.010	0.0014	10/12/18 19:18	
Silver	mg/L	ND	0.010	0.00095	10/12/18 19:18	
Thallium	mg/L	ND	0.0010	0.00014	10/12/18 19:18	
Vanadium	mg/L	ND	0.010	0.0019	10/12/18 19:18	
Zinc	mg/L	0.0024J	0.010	0.0021	10/12/18 19:18	

LABORATORY CONTROL SAMPLE: 67680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ma/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.096	96	80-120	
Beryllium	mg/L	.1	0.098	98	80-120	
Boron	mg/L	1	0.96	96	80-120	
Cadmium	mg/L	.1	0.10	101	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	.1	0.099	99	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.096	96	80-120	
Nickel	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Silver	mg/L	.1	0.099	99	80-120	
Thallium	mg/L	.1	0.095	95	80-120	
Vanadium	mg/L	.1	0.10	102	80-120	
Zinc	mg/L	.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.



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610212

MATRIX SPIKE & MATRIX SPIKE	DUPLIC	ATE: 67681			67682							
			MS	MSD								
		2610208001	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	.1	.1	0.12	0.12	119	117	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	105	75-125	1	20	
Barium	mg/L	0.081	.1	.1	0.18	0.17	95	91	75-125	2	20	
Beryllium	mg/L	ND	.1	.1	0.11	0.11	107	105	75-125	2	20	
Boron	mg/L	0.15	1	1	1.2	1.2	106	106	75-125	0	20	
Cadmium	mg/L	ND	.1	.1	0.11	0.11	107	108	75-125	1	20	
Calcium	mg/L	39.6	1	1	41.8	41.2	229	168	75-125	1	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	107	105	75-125	2	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20	
Copper	mg/L	ND	.1	.1	0.11	0.10	106	104	75-125	3	20	
Lead	mg/L	ND	.1	.1	0.10	0.099	100	99	75-125	1	20	
Nickel	mg/L	ND	.1	.1	0.11	0.10	107	104	75-125	3	20	
Selenium	mg/L	ND	.1	.1	0.11	0.11	106	105	75-125	1	20	
Silver	mg/L	ND	.1	.1	0.11	0.10	106	105	75-125	1	20	
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	2	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	111	111	75-125	1	20	
Zinc	mg/L	0.0029J	.1	.1	0.11	0.11	110	105	75-125	4	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 -	Huffaker Road						
Pace Project No.:	2610212							
QC Batch:	15066		Analysis N	lethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis D	escription:	2540C Total Di	issolved Solids		
Associated Lab Sar	mples: 26102120	001						
LABORATORY CO	NTROL SAMPLE:	67393						
			Spike	LCS	LCS	% Rec		
Parar	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Sol	ids	mg/L	400	396	99	84-108		
SAMPLE DUPLICA	.TE: 67394							
			2610166001	Dup		Max		
Para	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	1020	0 1010	00	1	10	_
SAMPLE DUPLICA	TE: 67395							
			2610210001	Dup		Max		
Para	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	81	3 82	28	2	10	-

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



Project: Plant Hammond - Huffaker Road

Pace Proje

ect	No.:	2610212

QC Batch: 15085		Analysis	Method:	EPA 300.0				
QC Batch Method: EPA 300.0		Analysis	Description:	300.0 IC Anio	ons			
Associated Lab Samples: 2610212	2001							
METHOD BLANK: 67500		Mat	rix: Water					
Associated Lab Samples: 2610212	2001							
		Blank	Reporting	g				
Parameter	Units	Result	Limit	MDL		Analyz	ed	Qualifiers
Chloride	mg/L	N	1D ().25 (0.024	10/11/18 (06:47	
Fluoride	mg/L	1	ND ().30 (0.029	10/11/18 (06:47	
Sulfate	mg/L	١	ND	1.0 (0.017	10/11/18 (06:47	
LABORATORY CONTROL SAMPLE:	67501							
		Spike	LCS	LCS	%	6 Rec		
Parameter	Units	Conc.	Result	% Rec	L	_imits	Qualif	fiers
Chloride	mg/L	10	10.5	105		90-110		
Fluoride	mg/L	10	10.2	102		90-110		
Sulfate	ma/L	10	10.8	108		90-110		

MATRIX SPIKE & MATRIX SPIK	E DUPLIC	CATE: 67502			67503							
			MS	MSD								
		2610208001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.5	10	10	12.0	12.0	105	105	90-110	0	15	
Fluoride	mg/L	0.21J	10	10	10.3	10.3	101	101	90-110	0	15	
Sulfate	mg/L	10.6	10	10	20.5	20.5	99	99	90-110	0	15	

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



QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610212

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.

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 RoadPace Project No.:2610212

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610212001	GWC-9	EPA 3005A	15129	EPA 6020B	15152
2610212001	GWC-9	SM 2540C	15066		
2610212001	GWC-9	EPA 300.0	15085		

Pace Analytical

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

Image: market biology	Company	Georgia Power - Coal Combustion Residuals	Report To: Initiation: Report To: Initiation:	Attention co	ation: reinvoicee@southemco.com		Page :	of	-
	Address	2480 Maner Road	Copy To Geosvitec	Company Name					
		Atlanta, GA 30339	noutinan	Address.		A Contraction of the Contraction	Danidate	And Andrew	10000000
	Email:	abraham@southernco.com	Purchase Order # SCS10348606	Pace Quote:			regulat	And Andered	
Manual Control Manual	hone:	(404)506-7239 Fax	Project Name. Plant Hammond - Huffaker Road	Pace Project Ma	inager betsy modaniel@pacelabs com.		State /	Location	2.1.24.00
	requeste	d Due Date Structord TRY	Project #	Pace Profile #	328.3			GA	
	F				Request	ed Analysis Filtered (Y/N)	A CARA		Contraction of the second
		MATRIX	cope cone cone cone cone cone cone cone con	ط	reservatives		-12		
		SAMPLE ID Sevisade	The value of the v	s correction	tsə (eisi2 ishu2.abroo		(N/A) (
1 1 1 3 X/N N 2 0 0 0 0 0 0 3 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1<	# W3TI	One Character per box. We (A.2, 0-9 / , -) Ar Sample Ids must be unique Tasse	с 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Read of the second seco	HCI Metals (App. III + Metals (A		annoln') IsubisaR		
1 <td>-F</td> <td>Guca</td> <td>wr 6 10/5/18 1025 10/0/6 10</td> <td>035 4 1 3</td> <td>XXX</td> <td></td> <td>2</td> <td></td> <td>~</td>	- F	Guca	wr 6 10/5/18 1025 10/0/6 10	035 4 1 3	XXX		2		~
Absolute Absolute <td< td=""><td>7</td><td>/</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></td<>	7	/							1
Babel 12 of 1 Babel 12 of 1 Babel 12 of 1 Babel 12 of 1	3	/							
Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance Balance	4								
6 7	S		/				-		
2 8 8 9 <td>9</td> <td></td> <td>4</td> <td><u> </u></td> <td></td> <td></td> <td></td> <td></td> <td></td>	9		4	<u> </u>					
8 00 13 14 00 0 <td>7</td> <td></td> <td>Ý/</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td>	7		Ý/	1					
10 10 10 10 10 10 11 12 00110044 001110 01111 01111 01111 11 12 00110044 012 012 012 01111 01111 12 00110 012 115 012 01111 01111 01111 01111 12 00110 012 115 012 012 01111 01111 01111 13 012 012 012 012 012 012 01111 01111 01111 14 012 012 012 012 012 012 01111 01111 01111 01111 15 0111 012 012 012 012 01111 01111 0111 01111 16 0111 0111 0111 0111 0111 0111 0111 0111 10 0111 0111 0111 0111 0111 0111 0111 10 0111 0111 0111 0111 0111 0111 10 0111 0111 0111 0111 0111 0111 10 01111 0111 0111 <td>8</td> <td></td> <td></td> <td>V</td> <td>4.</td> <td></td> <td></td> <td></td> <td></td>	8			V	4.				
11 12 12 12 10 11 11 12 11 12 11 12 11 12 <td< td=""><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	6								
13 Лопполи солчента силионето вт летимом силионето вт литимом	1								
12 ADDITIONAL CONVERTS ADDITIONAL CONVERTS ADDITIONAL CONVERTS ADDITIONAL CONVERTS RELATION RELATIONAL RELA	11								
ADDITIONAL CONVERTS RELATION DATE THE TAPELLATION DATE THE ACCEPTED BY AFFLATION DATE THE AC	12					/			
And Intersent in the Name Part Intersent in the Name Part Intersent in the Name Nouli mutur 10/5/18 14/15 Nouli mutur Nouli mutur 10/5/18 14/15 10/5/18 Nouli mutur 10/5/18 14/15 10/5/18 Nouli mutur 10/5/18 10/7 7 Nouli mutur 10/5/18 10/12 10/5/18 Nouli mutur 10/5/18 10/10 25 Moit : 2610212 Sampler 10/10 10/5/18 Nouli mutur 10/16 10/10 25 Nouli mutur 10/16 10/16 10/16 Nouli muture 10/16 10/16 10/16 Nouli mutur 10/16	「小学を	ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE TIME	ACCEPTED BY / AFFILIATION	DATE TIME	/	SAMPLE CONDITION	5
Mollie Mo	Aetais list	Sb.As,Ba.Be.B.Cd.Ca.Cr.Co.Cu.Pb.Ni.Se.Ag.Tl,V.Zn	P.U.M.J.	15/18 1415	Malia Murhus	10/00/18 1415		\neq	
MOH: 2610212 MOH: 2610212 Rampler NAME AND SIGNATURE PRINT Name of SAMPLER: P. M. M. C. C. O. C. O. C. C. O. C. C. O. C.			Mollia Murdan 101	10/18 00/4C	Mille Norwer/Parce	5+60 81/8/01		/	
MO:#: 2610212 камрсет име об samples PRINT name of samples: P.C. И. И. С. Сообе signad. В signad. В signad. В Notes of samples: D. M. В. С. М. В. С. М. В. С. В. С. Сообе signad. В signad. В Pafe 15 of 10 - 212 Signad. В Pafe 15 - 20 - 212 Signad. В Pafe 15 - 20 - 212 Pafe 16 - 20 - 212 Pafe 17 - 212			_		healingtake	10/2/18 1100	57	メメ	×
PRINT Name of SAMPLER: P. CL MULT Name of SAMPLER: P. CL MULT OF Societ Cooler (YM) (Societ Cooler (YM) (S	P	LIN:#: 2610212	2 SAMPLER NAME AND	D SIGNATURE			65.63		
	age 12		PRINT Name of S SIGNATURE of S	SAMPLER: Pull	MULTOUS DATE Sland		оч ам	N) sieq (N) (N)	icf ubjea
	! of 1			16-11 MJ-	D . 10/2	118	31		PS

Sar	nple Cond	dition	Upon Receipt	NO:	. 20105
Pace Analytical	$\cap \Lambda$	0	P	M	~ 2010212
Client Name	:6#=	POU	jer ci	IENT.	Due Date: 10
	at Comm	ercial	Pace Other		CAPower-CCR
Tracking #:			-		Proj. Duc.
Custody Seal on Cooler/Box Present:	no no	Seals	intact:yes	no	Floj, Name.
Packing Material: Bubble Wrap	Bags 🗌 N	lone	Other		
Thermometer Used 082	Type of Ice	: Wet	Blue None	Sample	s on ice, cooling process has begun
Cooler Temperature 7: 50	Biological	Tissue	is Frozen: Yes No	Dat	e and Initials of person examining
Temp should be above freezing to 6°C			Comments:		10/0/10 -10
Chain of Custody Present:		□N/A	1.		
Chain of Custody Filled Out:	TYes DNo	□N/A	2.		
Chain of Custody Relinquished:	ØYes □No	□n/a	3.		
Sampler Name & Signature on COC:	Yes No	□N/A	4.		
Samples Arrived within Hold Time:	Yes No	□N/A	5.		
Short Hold Time Analysis (<72hr):	QYes GNO	□n/A	6.		
Rush Turn Around Time Requested:	🗆 Yes 🗖 🗖 🗖	N/A	7.		
Sufficient Volume:	EYes DNo	□N/A	8.		
Correct Containers Used:	Yes DNc	□N/A	9.		
-Pace Containers Used:	Hes DNo	□N/A			
Containers Intact:	Pres No	□n/A	10.		
Filtered volume received for Dissolved tests	□Yes □No	EN/A	11.		
Sample Labels match COC:	Ves GNo	□N/A	12 Rods present	but	not listed on coc
-Includes date/time/ID/Analysis Matrix:	Car		(24-10	18/1	8
All containers needing preservation have been checked.	Pres ONO	⊡N/A	13.	/ '	
All containers needing preservation are found to be in compliance with EPA recommendation.	Yes ONO	□N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (Water			Initial when completed	Lot # of preserv	added ative
Samples checked for dechlorination:	□Yes □No		14.	P	
Headspace in VOA Vials (>6mm):	□Yes □No		15		
Trip Blank Present:	□Yes □No		16		
Trip Blank Custody Seals Present	□Yes □No		1		
Pace Trip Blank Lot # (if purchased):	I LEAD ALL STORES				
Client Notification/ Resolution:					
Person Contacted:		Date/	Time	Field D	ata Hequired? Y 7 N
Comments/ Resolution:					
		4 <u>0</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

October 15, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 2610208

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 08, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc. Rebecca Thornton, Pace Analytical Atlanta





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 2610208

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610208

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610208001	GWC-18	Water	10/05/18 10:00	10/08/18 11:00
2610208002	GWC-20	Water	10/05/18 10:00	10/08/18 11:00



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:2610208

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610208001		EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610208002	GWC-20	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3



ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610208

Sample: GWC-18	Lab ID:	2610208001	Collecte	ed: 10/05/18	8 10:00	Received: 10/	08/18 11:00 Ma	atrix: Water	
Parameters	Posults	Unite	Report	МП	DE	Prepared	Analyzed		Qual
							Analyzeu	CAS NO.	
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	10/10/18 13:15	10/12/18 19:29	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/10/18 13:15	10/12/18 19:29	7440-38-2	
Barium	0.081	mg/L	0.010	0.00078	1	10/10/18 13:15	10/12/18 19:29	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/10/18 13:15	10/12/18 19:29	7440-41-7	
Boron	0.15	mg/L	0.040	0.0039	1	10/10/18 13:15	10/12/18 19:29	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/10/18 13:15	10/12/18 19:29	7440-43-9	
Calcium	39.6	mg/L	25.0	0.69	50	10/10/18 13:15	10/12/18 19:35	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.0016	1	10/10/18 13:15	10/12/18 19:29	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/10/18 13:15	10/12/18 19:29	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/10/18 13:15	10/12/18 19:29	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/10/18 13:15	10/12/18 19:29	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 19:29	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/10/18 13:15	10/12/18 19:29	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 19:29	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/10/18 13:15	10/12/18 19:29	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 19:29	7440-62-2	
Zinc	0.0029J	mg/L	0.010	0.0021	1	10/10/18 13:15	10/12/18 19:29	7440-66-6	В
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	235	mg/L	25.0	10.0	1		10/09/18 16:57		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	1.5	mg/L	0.25	0.024	1		10/11/18 15:42	16887-00-6	
Fluoride	0.21J	mg/L	0.30	0.029	1		10/11/18 15:42	16984-48-8	
Sulfate	10.6	mg/L	1.0	0.017	1		10/11/18 15:42	14808-79-8	



ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610208

Sample: GWC-20	Lab ID:	2610208002	Collecte	ed: 10/05/18	8 10:00	Received: 10/	08/18 11:00 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	0.00078	1	10/10/18 13:15	10/12/18 20:21	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/10/18 13:15	10/12/18 20:21	7440-38-2	
Barium	0.12	mg/L	0.010	0.00078	1	10/10/18 13:15	10/12/18 20:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/10/18 13:15	10/12/18 20:21	7440-41-7	
Boron	0.017J	mg/L	0.040	0.0039	1	10/10/18 13:15	10/12/18 20:21	7440-42-8	
Cadmium	0.00011J	mg/L	0.0010	0.000093	1	10/10/18 13:15	10/12/18 20:21	7440-43-9	
Calcium	52.7	mg/L	25.0	0.69	50	10/10/18 13:15	10/12/18 20:27	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/10/18 13:15	10/12/18 20:21	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/10/18 13:15	10/12/18 20:21	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/10/18 13:15	10/12/18 20:21	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/10/18 13:15	10/12/18 20:21	7439-92-1	
Nickel	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:21	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/10/18 13:15	10/12/18 20:21	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:21	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/10/18 13:15	10/12/18 20:21	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 20:21	7440-62-2	
Zinc	ND	mg/L	0.010	0.0021	1	10/10/18 13:15	10/12/18 20:21	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	256	mg/L	25.0	10.0	1		10/09/18 16:57		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	2.2	mg/L	0.25	0.024	1		10/11/18 12:16	16887-00-6	
Fluoride	0.17J	mg/L	0.30	0.029	1		10/11/18 12:16	16984-48-8	
Sulfate	38.9	mg/L	1.0	0.017	1		10/11/18 12:16	14808-79-8	



Project: Plant Hammond - Huffaker Road

Doco Drojoct No 2610209

Pace Project No.: 26102	08						
QC Batch: 1512	9	Analysis Meth	nod: EF	PA 6020B			
QC Batch Method: EPA	3005A	Analysis Deso	cription: 60	20B MET			
Associated Lab Samples:	2610208001, 2610208002						
METHOD BLANK: 67679		Matrix:	Water				
Associated Lab Samples:	2610208001, 2610208002						
	·	Blank	Reporting				
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers	
Antimony	mg/L	ND	0.0030	0.00078	10/12/18 19:18		
Arsenic	mg/L	ND	0.0050	0.00057	10/12/18 19:18		
Barium	mg/L	ND	0.010	0.00078	10/12/18 19:18		
Beryllium	mg/L	ND	0.0030	0.000050	10/12/18 19:18		
Boron	mg/L	ND	0.040	0.0039	10/12/18 19:18		
Cadmium	mg/L	ND	0.0010	0.000093	10/12/18 19:18		
Calcium	mg/L	ND	0.50	0.014	10/12/18 19:18		
Chromium	mg/L	ND	0.010	0.0016	10/12/18 19:18		
Cobalt	mg/L	ND	0.010	0.00052	10/12/18 19:18		
Copper	mg/L	ND	0.025	0.0013	10/12/18 19:18		
Lead	mg/L	ND	0.0050	0.00027	10/12/18 19:18		
Nickel	mg/L	ND	0.010	0.00095	10/12/18 19:18		
Selenium	mg/L	ND	0.010	0.0014	10/12/18 19:18		
Silver	mg/L	ND	0.010	0.00095	10/12/18 19:18		
Thallium	mg/L	ND	0.0010	0.00014	10/12/18 19:18		
Vanadium	mg/L	ND	0.010	0.0019	10/12/18 19:18		
Zinc	mg/L	0.0024J	0.010	0.0021	10/12/18 19:18		

LABORATORY CONTROL SAMPLE: 67680

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.096	96	80-120	
Beryllium	mg/L	.1	0.098	98	80-120	
Boron	mg/L	1	0.96	96	80-120	
Cadmium	mg/L	.1	0.10	101	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	.1	0.099	99	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.096	96	80-120	
Nickel	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Silver	mg/L	.1	0.099	99	80-120	
Thallium	mg/L	.1	0.095	95	80-120	
Vanadium	mg/L	.1	0.10	102	80-120	
Zinc	mg/L	.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.



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610208

MATRIX SPIKE & MATRIX SPIKE	DUPLIC	ATE: 67681			67682							
			MS	MSD								
		2610208001	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	.1	.1	0.12	0.12	119	117	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	105	75-125	1	20	
Barium	mg/L	0.081	.1	.1	0.18	0.17	95	91	75-125	2	20	
Beryllium	mg/L	ND	.1	.1	0.11	0.11	107	105	75-125	2	20	
Boron	mg/L	0.15	1	1	1.2	1.2	106	106	75-125	0	20	
Cadmium	mg/L	ND	.1	.1	0.11	0.11	107	108	75-125	1	20	
Calcium	mg/L	39.6	1	1	41.8	41.2	229	168	75-125	1	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	107	105	75-125	2	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20	
Copper	mg/L	ND	.1	.1	0.11	0.10	106	104	75-125	3	20	
Lead	mg/L	ND	.1	.1	0.10	0.099	100	99	75-125	1	20	
Nickel	mg/L	ND	.1	.1	0.11	0.10	107	104	75-125	3	20	
Selenium	mg/L	ND	.1	.1	0.11	0.11	106	105	75-125	1	20	
Silver	mg/L	ND	.1	.1	0.11	0.10	106	105	75-125	1	20	
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	2	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	111	111	75-125	1	20	
Zinc	mg/L	0.0029J	.1	.1	0.11	0.11	110	105	75-125	4	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 -	Huffaker Road						
Pace Project No.:	2610208							
QC Batch:	15066		Analysis I	Method:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis I	Description:	2540C Total D	issolved Solids		
Associated Lab Sar	mples: 26102080	01, 2610208002						
LABORATORY CO	NTROL SAMPLE:	67393						
			Spike	LCS	LCS	% Rec		
Parar	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Soli	ds	mg/L	400	396	99	84-108		
SAMPLE DUPLICA	TE: 67394							
			261016600 ⁻	1 Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	;
Total Dissolved Soli	ds	mg/L	102	00 101	00	1	10	
SAMPLE DUPLICA	TE: 67395							
			261021000 ⁻	1 Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	;
Total Dissolved Soli	ds	mg/L	8	13 8	28	2	10	

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



Project: Plant Hammond - Huffaker Road

Pace	Pro	ject No.	: 26	610208

QC Batch: 15085		Analysis N	/lethod:	EPA 300.0				
QC Batch Method: EPA 300.0		Analysis D	Description:	300.0 IC An	ons			
Associated Lab Samples: 2610208	001, 2610208002							
METHOD BLANK: 67500		Matr	ix: Water					
Associated Lab Samples: 2610208	001, 2610208002							
Parameter	Units	Blank Result	Reporting Limit	g MDI	-	Analyz	ed	Qualifiers
Chloride	mg/L	N	D ().25	0.024	10/11/18	06:47	
Fluoride	mg/L	N	D ().30	0.029	10/11/18	06:47	
Sulfate	mg/L	Ν	D	1.0	0.017	10/11/18	06:47	
LABORATORY CONTROL SAMPLE:	67501							
		Spike	LCS	LCS	%	6 Rec		
Parameter	Units	Conc.	Result	% Rec	L	imits	Qualifi	ers
Chloride	mg/L	10	10.5	105	5	90-110		
		10	10.2	102	2	90-110		
Fluoride	mg/∟	10		-				

MATRIX SPIKE & MATRIX SPIK	E DUPLIC	CATE: 67502			67503							
			MS	MSD								
		2610208001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.5	10	10	12.0	12.0	105	105	90-110	0	15	
Fluoride	mg/L	0.21J	10	10	10.3	10.3	101	101	90-110	0	15	
Sulfate	mg/L	10.6	10	10	20.5	20.5	99	99	90-110	0	15	

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



QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610208

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.

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 RoadPace Project No.:2610208

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610208001	GWC-18	EPA 3005A	15129	EPA 6020B	15152
2610208002	GWC-20	EPA 3005A	15129	EPA 6020B	15152
2610208001	GWC-18	SM 2540C	15066		
2610208002	GWC-20	SM 2540C	15066		
2610208001	GWC-18	EPA 300.0	15085		
2610208002	GWC-20	EPA 300.0	15085		

	5	1
	10	2
	1 A	1
	ş	1
-	2	
1	No	
	1	

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

Section Required	A d Client Information.	Section B						Sectio	u C					2201			הובובח ס		. `				
Company	Y Georgia Power - Coal Combristion Residuate	Renord To:	Project	Information;				Invoic	e Informa	ation:									. 0000			/	
Address.	2480 Maner Road	Conv To:	nlor	Abraham / Lau	ren Petty			Attenti	on St	csinvoid	ces@so	uthern	co.con				Г		raye.			-	
	Atlanta, GA 30339	copy to:	Geos	iyntec				Compt	any Name								Т						
Email:	jabraham@southernco.com	Durchaea O	Indor H					Addres	35.								1	0.504.246	Date:	A location		Concernence of the	
Phone:	(404)506-7239 Fax	Project Nam		BID111048	9099			Pace (Juote:										nAnu	iatory A	Annah		-
Requeste	od Due Date Standard rAT	Project #:	15	~ 6 58 (ie - nutra	Ker Hoad		Pace P	rofile #	ace a	betsy.n	cdaniel	Opacela	bs com,				Concession of the second	Stat	e/Loca	tion	Service of	100
			þ							0.000		505	N WAR	Requ	ested A	alvsis F	Clared D	INI	the second	GA	- VIC-186	A support	1000
	MATRIX	CODE	(liel of s	(dwoo	COLLEC	CTED	,		ā	eruasa.	tivec	107	NU										
	SAMPLE ID Soutsed	an a	P O DIEV 99	=) 8440=0	÷		COLLECTIO	L					. (e)te)	ietlu2,ebi			2	2	(N/)				門
# MƏTI	One Character per box. Where (A-Z, 0-9 / , -) A the Converting the unique Trauve	2 A 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	BOOD XIRTAI 2002 XIRTAI 2002 XIRTAI 2002 XIRTAI 2002 XIRTAI 2002 XIRTAI 2003 XIRTAI 20				TA 9M31 3J9M	PF CONTRINERS	103 204	H0 I:	thanol 25203	190 2. 2023/1604	S + III ddA) sisi	oul H, ebnoind , Fluor	-61	é	1		() onnoln) (hiorine (
T.	GWC-18		4 5	CS NO F.	44 1	S In-	AS TSS	- nu	NH N ZH	PN DH	eN 9M	40	eM 3		-				Res	-			-
2	GWC-20		1 15	10.5 10.	3	21 BY	S La			-			X	_	-				5	1			-
3			1	20	-	8	z	-	n				~						2				1
4																-							
5		V	1	0		+	-				_			_	-						Y		
9					N		+			-					_	+					1		
7					4	5/	08	0						-	_	+					1	10	
8			-		+	-	4	γ	1						-	-						05	
ŋ			-		-	-			/	1	-					-							2
6			-		-	-	-			-	4	1					_					+	æ
11			+		+				+				/	1			_					+	
12					+	-		-		-	+	-			A	1						1	
のないない	ADDITIONAL COMMENTS	REI	LINQUISI	HED BY / AFFILI	ATION	10 M	THE	Duff	100	a contracted		and a state	-				/		-				
• Metals list. St	b.Ås.Ba.Be.B.Cd,Ca,Cr,Co,Cu,Pb,Ni,Se,Ag,TI,V,Zn	1001	N N	1 420	of should	10+CI	-740		(CCEPTED	BYIAF	, ILIATIO	-		DATE	4	TIME		SAMPL	E CONDIT	SNOI	÷
		Mal	101	NV/ 110	1	0 21	1 ACVO	2051		Sol .	5.0	2	when	2		20 01	18	398				_	
		5	512	and .	wal	6/01	1 20%	0745	SA	Ko	NSUL	5	Pay	0	_	1/2/0	8 0	1995					
						-			e	has	ro.	#	S	V	0	8/10	2111	20	25	A	\geq		
F	10.4 . OC 4 0 000	a		SAME	PLER NA	ME AND SI	GNATUR	ц	100 C	Sale 2	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	いたの	1000	1020	- Contraction	いいたか		No. of Concession, Name		2		\downarrow	
age 1	MOM - ZOTAZA	c			PRINT Na	me of SAM	PLER:	DA.	N G	salati		and the	a later	1	A REAL PROPERTY			1	D ni	uo pə	٨ŗ	sə	
13 of					SIGNATU	RE of SAM	PLER	-	$\langle \rangle$	2	2	П	DAT	E Signe	4: /Q.	-50	2010		4M9T	Receiv (V/N)	belse2	(N/Y)	(N/A)
14	2610208																		1		;	_]

		pon Receip	
Sample	Condition 0	MO	F. 2010200
Pace Analytical Client Name:	APOW	PM: E	T: CAPower-CCR
	Commercial	Pace Other	Uproi: Due Date:
Courier: Fed Ex UPS USPS Client	Joonnoise		Proj. Name:
Tracking #:	no Seals ir	ntact:	
Custody Seal on Coolenbox Present	□ None	Other	
Packing Material: Bubble Wrap Bubble Dags	e of Ice:	Blue None 🗌 Sa	ples on ice, cooling process has begun
Thermometer Used <u>UOF</u> Bio	logical Tissue i	s Frozen: Yes No	Date and Initials of person examining
Cooler Temperature	-3	Comments:	10/0/10 0
Chain of Custody Present:	es 🗆 No 🗆 N/A	1.	
Chain of Custody Filled Out:	res 🗆 No 🗆 N/A	2.	
Chain of Custody Filinguished:	res INO IN/A	3.	
Sampler Name & Signature on COC:	Yes No N/A	4.	
Samples Arrived within Hold Time:	Yes INO IN/A	5.	
Short Hold Time Analysis (<72hr):	Yes AND IN/A	6.	
Rush Turn Around Time Requested:		7.	
Sufficient Volume:	Yes INO IN/A	8.	
Correct Containers Used:	Yes INO IN/A	9	
-Pace Containers Used:	es INO IN/A		
Containers Intact:		10	
Filtered volume received for Dissolved tests		11 200	
Sample Labels match COC:		12Rudi everent 1	that listed parac
-Includes date/time/ID/Analysis Matrix: C	-11/	(24-10/	dia
All containers needing preservation have been checked.		13	5/18
All containers needing preservation are found to be in compliance with EPA recommendation.	ves □No □N/A	13.	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (Water 5	es DNo	Initial when Lo completed pre	t # of added eservative
Samples checked for dechlorination:	es 🗆 No 🖉 N/A	14.	
Headspace in VOA Vials (>6mm):	es 🗆 No 🖾 N/A	15.	
Trip Blank Present:	es 🗆 No 🖾 N/A	16.	
Trip Blank Custody Seals Present	es ⊡No 🖾 🗖 🗛	uncest (2)	
Pace Trip Blank Lot # (if purchased):			
Client Notification/ Resolution:			
Person Contacted:	Date/Ti	Fiel me:	d Data Required? Y / N
Comments/ Resolution:	040711		-
	ie,		
		,	
Project Manager Review:			Date:

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



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

October 17, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 2610209

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 08, 2018. 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 report issued on October 15, 2018. The report has been revised to remove mercury, lithium, and molybdenum data from GWC-23 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,

Batery Mr Damil

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

Enclosures

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



REPORT OF LABORATORY ANALYSIS

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



CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 2610209

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610209001	GWC-23	Water	10/05/18 12:18	10/08/18 11:00
2610209002	FB-05	Water	10/05/18 13:05	10/08/18 11:00



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:2610209

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610209001	GWC-23	EPA 6020B	CSW	17
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610209002	FB-05	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3



ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Sample: GWC-23	Lab ID:	Lab ID: 2610209001		Collected: 10/05/18 12:18			Received: 10/08/18 11:00 Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	A 3005A				
Antimony	ND	mg/L	0.0030	0.00078	1	10/10/18 13:15	10/12/18 20:32	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	10/10/18 13:15	10/12/18 20:32	7440-38-2		
Barium	0.065	mg/L	0.010	0.00078	1	10/10/18 13:15	10/12/18 20:32	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/10/18 13:15	10/12/18 20:32	7440-41-7		
Boron	0.039J	mg/L	0.040	0.0039	1	10/10/18 13:15	10/12/18 20:32	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	10/10/18 13:15	10/12/18 20:32	7440-43-9		
Calcium	39.3	mg/L	25.0	0.69	50	10/10/18 13:15	10/12/18 20:38	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	10/10/18 13:15	10/12/18 20:32	7440-47-3		
Cobalt	0.00058J	mg/L	0.010	0.00052	1	10/10/18 13:15	10/12/18 20:32	7440-48-4		
Copper	ND	mg/L	0.025	0.0013	1	10/10/18 13:15	10/12/18 20:32	7440-50-8		
Lead	0.00042J	mg/L	0.0050	0.00027	1	10/10/18 13:15	10/12/18 20:32	7439-92-1		
Nickel	0.0014J	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:32	7440-02-0		
Selenium	ND	mg/L	0.010	0.0014	1	10/10/18 13:15	10/12/18 20:32	7782-49-2		
Silver	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:32	7440-22-4		
Thallium	ND	mg/L	0.0010	0.00014	1	10/10/18 13:15	10/12/18 20:32	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 20:32	7440-62-2		
Zinc	0.0048J	mg/L	0.010	0.0021	1	10/10/18 13:15	10/12/18 20:32	7440-66-6	В	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C							
Total Dissolved Solids	210	mg/L	25.0	10.0	1		10/09/18 16:57			
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0							
Chloride	1.6	mg/L	0.25	0.024	1		10/11/18 09:35	16887-00-6		
Fluoride	0.18J	mg/L	0.30	0.029	1		10/11/18 09:35	16984-48-8		
Sulfate	9.3	mg/L	1.0	0.017	1		10/11/18 09:35	14808-79-8		



ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Sample: FB-05	Lab ID:	2610209002	Collecte	ed: 10/05/18	3 13:05	Received: 10/	08/18 11:00 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: El	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	10/10/18 13:15	10/12/18 20:44	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/10/18 13:15	10/12/18 20:44	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	10/10/18 13:15	10/12/18 20:44	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/10/18 13:15	10/12/18 20:44	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	10/10/18 13:15	10/12/18 20:44	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/10/18 13:15	10/12/18 20:44	7440-43-9	
Calcium	0.021J	mg/L	0.50	0.014	1	10/10/18 13:15	10/12/18 20:44	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/10/18 13:15	10/12/18 20:44	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/10/18 13:15	10/12/18 20:44	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/10/18 13:15	10/12/18 20:44	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/10/18 13:15	10/12/18 20:44	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/10/18 13:15	10/12/18 20:44	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 20:44	7439-98-7	
Nickel	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:44	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/10/18 13:15	10/12/18 20:44	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/10/18 13:15	10/12/18 20:44	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/10/18 13:15	10/12/18 20:44	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/10/18 13:15	10/12/18 20:44	7440-62-2	
Zinc	0.010	mg/L	0.010	0.0021	1	10/10/18 13:15	10/12/18 20:44	7440-66-6	В
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.000036	1	10/11/18 10:20	10/11/18 17:32	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	31.0	mg/L	25.0	10.0	1		10/09/18 16:57		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride	0.17J	mg/L	0.25	0.024	1		10/11/18 09:58	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/11/18 09:58	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/11/18 09:58	14808-79-8	



Project:	Plant Ham	mond - Huf	faker Road										
Pace Project No.:	2610209												
QC Batch:	15185			Analys	is Meth	od: E	EPA 7470A						
QC Batch Method:	EPA 7470	A		Analys	is Desc	ription: 7	7470 Mercur	у					
Associated Lab San	nples: 26 ⁻	10209002											
METHOD BLANK:	67911			N	latrix: \	Water							
Associated Lab San	nples: 26 ⁻	10209002											
Paran	neter		Units	Blank Resulf	t	Reporting Limit	MDL		Analyzec	l Qu	alifiers		
Mercury			mg/L		ND	0.00050	0.00	0036 1	10/11/18 16	:47			
LABORATORY COM	NTROL SAM	IPLE: 67	/912										
_				Spike	L	.CS	LCS	% F	Rec				
Paran	neter		Units	Conc.	Re	esult	% Rec	Lim	nits	Qualifiers	_		
Mercury			mg/L	.0025		0.0026	104		80-120				
MATRIX SPIKE & M	IATRIX SPI		CATE: 67913			67914							
				MS	MSD								
Paramete	r	Unite	2610090002 Result	Spike Conc	Spike	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	RbD	Max	Qual
					CONC.			70 Kec					Quai
Mercury		mg/L	0.95 ug/L	.0025	.002	25 0.0032	2 0.0031	6	39 8	38 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 - Huffaker Road

Pace Project No.: 2610209

Copper

Lithium

Nickel

Silver

Zinc

Selenium

Thallium

Vanadium

Molybdenum

Lead

Face Floject No 2010209						
QC Batch: 15129	Analysis Meth	nod: E	PA 6020B			
QC Batch Method: EPA 30	05A	Analysis Description:		20B MET		
Associated Lab Samples: 2						
METHOD BLANK: 67679		Matrix:	Water			
Associated Lab Samples: 2	610209001, 2610209002					
		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/12/18 19:18	
Arsenic	mg/L	ND	0.0050	0.00057	10/12/18 19:18	
Barium	mg/L	ND	0.010	0.00078	10/12/18 19:18	
Beryllium	mg/L	ND	0.0030	0.000050	10/12/18 19:18	
Boron	mg/L	ND	0.040	0.0039	10/12/18 19:18	
Cadmium	mg/L	ND	0.0010	0.000093	10/12/18 19:18	
Calcium	mg/L	ND	0.50	0.014	10/12/18 19:18	
Chromium	mg/L	ND	0.010	0.0016	10/12/18 19:18	
Cobalt	mg/L	ND	0.010	0.00052	10/12/18 19:18	

ND

ND

ND

ND

ND

ND

ND

ND

ND

0.0024J

mg/L

0.025

0.050

0.010

0.010

0.010

0.010

0.0010

0.010

0.010

0.0050

0.0013

0.00027

0.00097

10/12/18 19:18

10/12/18 19:18

10/12/18 19:18

0.0019 10/12/18 19:18

0.00095 10/12/18 19:18

0.0014 10/12/18 19:18

0.00095 10/12/18 19:18

0.00014 10/12/18 19:18

0.0019 10/12/18 19:18

0.0021 10/12/18 19:18

LABORATORY CONTROL SAMPLE: 67680

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.096	96	80-120	
Beryllium	mg/L	.1	0.098	98	80-120	
Boron	mg/L	1	0.96	96	80-120	
Cadmium	mg/L	.1	0.10	101	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	.1	0.099	99	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.096	96	80-120	
Lithium	mg/L	.1	0.099	99	80-120	
Molybdenum	mg/L	.1	0.096	96	80-120	
Nickel	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Silver	mg/L	.1	0.099	99	80-120	
Thallium	mg/L	.1	0.095	95	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 Road

Pace Project No.: 2610209

LABORATORY CONTROL SAM	IPLE: 67	7680								
Parameter		Units	Spike Conc.	LC Res	S ult	LCS % Rec	% Rec Limits	Qualifiers		
Vanadium		mg/L	.1		0.10	102	80-120		-	
Zinc		mg/L	.1		0.10	104	80-120			
MATRIX SPIKE & MATRIX SPIK		CATE: 67681			67682					
			MS	MSD						
		2610208001	Spike	Spike	MS	MSD	MS MS	SD % Rec	Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec % F	Rec Limits	RPD RPD	Qual

Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Antimony	mg/L	ND	.1	.1	0.12	0.12	119	117	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	105	75-125	1	20	
Barium	mg/L	0.081	.1	.1	0.18	0.17	95	91	75-125	2	20	
Beryllium	mg/L	ND	.1	.1	0.11	0.11	107	105	75-125	2	20	
Boron	mg/L	0.15	1	1	1.2	1.2	106	106	75-125	0	20	
Cadmium	mg/L	ND	.1	.1	0.11	0.11	107	108	75-125	1	20	
Calcium	mg/L	39.6	1	1	41.8	41.2	229	168	75-125	1	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	107	105	75-125	2	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	2	20	
Copper	mg/L	ND	.1	.1	0.11	0.10	106	104	75-125	3	20	
Lead	mg/L	ND	.1	.1	0.10	0.099	100	99	75-125	1	20	
Lithium	mg/L	0.016J	.1	.1	0.12	0.12	106	102	75-125	3	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	106	107	75-125	1	20	
Nickel	mg/L	ND	.1	.1	0.11	0.10	107	104	75-125	3	20	
Selenium	mg/L	ND	.1	.1	0.11	0.11	106	105	75-125	1	20	
Silver	mg/L	ND	.1	.1	0.11	0.10	106	105	75-125	1	20	
Thallium	mg/L	ND	.1	.1	0.10	0.098	100	98	75-125	2	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	111	111	75-125	1	20	
Zinc	mg/L	0.0029J	.1	.1	0.11	0.11	110	105	75-125	4	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 -	Huffaker Road						
Pace Project No.:	2610209							
QC Batch:	15066		Analysis I	Method:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis [Description:	2540C Total D	issolved Solids		
Associated Lab Sar	mples: 26102090	01, 2610209002						
LABORATORY CO	NTROL SAMPLE:	67393						
			Spike	LCS	LCS	% Rec		
Parar	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Sol	ds	mg/L	400	396	99	84-108		
SAMPLE DUPLICA	TE: 67394							
			2610166007	1 Dup		Max		
Para	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ds	mg/L	1020	101	00	1	10	
SAMPLE DUPLICA	TE: 67395							
			261021000	1 Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	8	13 8	28	2	10	

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



Project: Plant Hammond - Huffaker Road

Pace Project No.:	2610209

QC Batch: 15085		Analysis N	/lethod:	EPA 300.0	C							
QC Batch Method: EPA 300.0		Analysis E	Description:	300.0 IC /	Anions							
Associated Lab Samples: 2610209	001, 2610209002											
METHOD BLANK: 67500		Matrix: Water										
Associated Lab Samples: 2610209	001, 2610209002											
		Blank	Reporting	g								
Parameter	Units	Result	Limit	Μ	IDL	Analyzed		Qualifiers				
Chloride	mg/L	N	D ().25	0.024	10/11/18	06:47					
Fluoride	mg/L	N	D (0.30	0.029	10/11/18	06:47					
Sulfate	mg/L	Ν	D	1.0	0.017	10/11/18	06:47					
LABORATORY CONTROL SAMPLE:	67501											
		Spike	LCS	LCS	c	% Rec						
Parameter	Units	Conc.	Result	% Rec		Limits	Qualifi	ers				
Chloride	mg/L	10	10.5	1	105	90-110						
Fluoride	mg/L	10	10.2	1	02	90-110						
Sulfate	mg/L	10	10.8	1	08	90-110						

MATRIX SPIKE & MATRIX SPIK	E DUPLIC	CATE: 67502			67503							
			MS	MSD								
		2610208001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.5	10	10	12.0	12.0	105	105	90-110	0	15	
Fluoride	mg/L	0.21J	10	10	10.3	10.3	101	101	90-110	0	15	
Sulfate	mg/L	10.6	10	10	20.5	20.5	99	99	90-110	0	15	

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



QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

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.

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 RoadPace Project No.:2610209

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch		
2610209001	GWC-23	EPA 3005A	15129	EPA 6020B	15152		
2610209002	FB-05	EPA 3005A	15129	EPA 6020B	15152		
2610209002	FB-05	EPA 7470A	15185	EPA 7470A	15229		
2610209001	GWC-23	SM 2540C	15066				
2610209002	FB-05	SM 2540C	15066				
2610209001	GWC-23	EPA 300.0	15085				
2610209002	FB-05	EPA 300.0	15085				

Pace Area Area

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

le: 1 of 1	Kegulatory Agency	State / Location	GA		2	(N/Y) anhol	Residual Ch	2	~			X010	Vin V	12	~	SAMPLE CONDITIONS		245 Y Y X		,(N) Bubjes Soci N/ Istody Baled N/P In C MP In C	
Pac		State of the state		sis Filtered (Y/N)		01101101	< </th <th></th> <th></th> <th></th> <th>2</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>10/2/2 USAS</th> <th>10/11/8/18/00</th> <th></th> <th></th> <th>10/05/18</th>				2						10/2/2 USAS	10/11/8/18/00			10/05/18
stion C cice Information: ention <u>scsinvoices@southernco.com</u>	r , fress	se Quote:	e Project Manager betsy modaniei@paceraus.com. e Profile #: 328.3	Requested Analy	Preservatives	test : Fluorida : Fluorida : Suifa Fluorida : Suifa	preserved processived processive		1 3 4 7 4			10/0					TIME ACCEPTED BY JAFFILIATION	145 Mile Newman Parce	11	odia Mushus	Belic Murpus DATE Signed:
Section B Required Project Information: Invo Report To: Joju Abraham / Lauren Petty Atte Copy To: Geosyntec	Add	Purchase Order # SCS10348606 Pac	Project # GAUG (70) Pac		COLLECTED	A COLLECTIO	% £ ₽ 5 ATRIX CODE MPLE TYPE MPLE TEMP &	VUT G IBIONIA TANK INSCHART TIME & *	WT G POSAB 1255 100021B 1385 009 4			011					RELINQUISHED BY / AFFILATION DATE 1	1/800 a Murphen is 10/10 09		SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER:	
Section A equired Client Information: company Georgia Power - Coal Combustion Residuals ddress 2480 Maner Road Allanta CA shore	mail jabraham@southernco.com	10018. (404)506-7239 Fax	- un Date Standord TAT F		MATRIX Direction Materia	SAMPLE ID Sourced One Character per box.	(A-Z, 0-9 /, -) Ar Ar Cher Cher Cher Cher Cher Cher Cher Che	GWC-23	+13-05					TA.		ADDITIONAL COMMENTER	Sb.As.Ba. Be R Cri C.	5 Are W	WO:#: 261 m2m		2610209
					_																
--	-------------	----------	----------	------------------------------------	--------------------	--															
Samp	ole Con	ditio	on Up	oon Rece	WO:	‡ :2610209															
(reaction	<u> </u>	0		~	PM: BI	Due Date: 10/15/1															
Pace Analytical Client Name:	G#	-10	We	1	CLIEN	T: CAPower-CCR															
		merci	ial C	Pace Oth	nei	Proj. Due Daic.															
Courier: Fed Ex UPS USPS Client						Proj. Name:															
Fracking #:	no no	S	eals in	tact:	yes 🔄 no																
Custody Seal on Cooler/Box Present:			ne [Other																	
Packing Material: Bubble Wrap Bubble	Bags L		Wed	Blue Nor	ne 🗌 Sa	amples on ice, cooling process has begut															
Thermometer Used 08/	Type of	ice.	esue is	s Frozen: Y	es No	contents: 0/8/18 CH															
Cooler Temperature 2.5C	Biologi	Callin	3540	Comments:	:	111															
Temp should be above freezing to 6°C	The second			1.																	
Chain of Custody Present:	Li Yes			2																	
Chain of Custody Filled Out:	L Yes			2.																	
Chain of Custody Relinquished:	Yes																				
Sampler Name & Signature on COC:	Yes			4.																	
Samples Arrived within Hold Time:	₽Yes	∐No		5.																	
Short Hold Time Analysis (<72hr):	□Yes	EN0	□N/A	6.																	
Rush Turn Around Time Requested:	□Yes	No	□N/A	7.																	
Sufficient Volume:	ElYes	□No	□n/A	8.																	
Correct Containers Used:	Yes	□N0	□N/A	9.																	
-Pace Containers Used:	Aes	□No	□N/A																		
Containers Intact:	2 Yes	No	□N/A	10.																	
Filtered volume received for Dissolved tests	□Yes	□No	EN/A	11.		• •															
Sample Labels match COC:	□Yes	GA6		12Rads	present	but not listed price															
-Includes date/time/ID/Analysis Matrix:	C	9/		1 4000	12410	12/12															
All containers needing preservation have been checked.	Pres	□No		13	CVU 10	19/18															
All containers needing preservation are found to be in compliance with EPA recommendation.	EYes	□No	□n/a	10.																	
exceptions: VOA, coliform, TOC, O&G, WI-DRO, CARd 5	□¥45			Initial when		Lot # of added															
Samples checked for dechlorination:				completed	1.1	preservative															
Headspace in VOA Vials (>6mm):	∐Yes	∐No	ØN/A	14.																	
Trip Blank Present:	□Yes	□No	CN/A	15.																	
Trip Blank Custody Seals Present	□Yes	□No	IN/A	16.																	
Pace Trip Blank Lot # (if purch	□Yes	No	ÉN/A			s,															
Climate Cot # (il purchased):						,															
Client Notification/ Resolution:																					
Person Contacted:			Date/T	imo:	F	Field Data Required? Y / N															
Comments/ Resolution:			outeri																		
			*)e																		
Project Manager Review:																					
						Date:															
ertification Office (i.e. out of hold in the second	rolina comr	oliance	samel																		
incorrect preservative,	out of temp	D. Incor	rect cor	a copy of t stainers)	his form will be :	sent to the North Carolina DEHNR															
						E Nu oraș															
						F-ALLC003rev.3. 11September2006 Page 15 c															



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

October 15, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 2610116

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc. Rebecca Thornton, Pace Analytical Atlanta





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 2610116

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610116001	FB-03	Water	10/03/18 16:49	10/04/18 12:30
2610116002	EB-02	Water	10/03/18 17:01	10/04/18 12:30



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:2610116

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610116001	— — FB-03	EPA 6020B	CSW	
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2610116002	EB-02	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		EPA 300.0	RLC	3



ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Sample: FB-03	Lab ID:	Lab ID: 2610116001			8 16:49	Received: 10/			
			Report						
Parameters	Results	Units	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	0.00078	1	10/09/18 14:10	10/11/18 20:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 20:00	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 20:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 20:00	7440-41-7	
Boron	0.0048J	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 20:00	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 20:00	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	10/09/18 14:10	10/11/18 20:00	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 20:00	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 20:00	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 20:00	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 20:00	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 20:00	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:00	7439-98-7	
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:00	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 20:00	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:00	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 20:00	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:00	7440-62-2	
Zinc	0.0026J	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 20:00	7440-66-6	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:29	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	15.0J	mg/L	25.0	10.0	1		10/08/18 17:48		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	0.071J	mg/L	0.25	0.024	1		10/09/18 07:23	16887-00-6	В
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 07:23	16984-48-8	
Sulfate	0.056J	ma/L	1.0	0.017	1		10/09/18 07:23	14808-79-8	



ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Sample: EB-02	Lab ID: 261	Lab ID: 2610116002		Collected: 10/03/18 17:01			Received: 10/04/18 12:30 Matrix: Water				
			Report								
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual		
6020B MET ICPMS	Analytical Met	thod: EPA (6020B Prej	paration Met	hod: EF	PA 3005A					
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 14:10	10/11/18 20:06	7440-36-0			
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 14:10	10/11/18 20:06	7440-38-2			
Barium	ND	mg/L	0.010	0.00078	1	10/09/18 14:10	10/11/18 20:06	7440-39-3			
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 14:10	10/11/18 20:06	7440-41-7			
Boron	ND	mg/L	0.040	0.0039	1	10/09/18 14:10	10/11/18 20:06	7440-42-8			
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 14:10	10/11/18 20:06	7440-43-9			
Calcium	ND	mg/L	0.50	0.014	1	10/09/18 14:10	10/11/18 20:06	7440-70-2			
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 14:10	10/11/18 20:06	7440-47-3			
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 14:10	10/11/18 20:06	7440-48-4			
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 14:10	10/11/18 20:06	7440-50-8			
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 14:10	10/11/18 20:06	7439-92-1			
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 14:10	10/11/18 20:06	7439-93-2			
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:06	7439-98-7			
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:06	7440-02-0			
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 14:10	10/11/18 20:06	7782-49-2			
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 14:10	10/11/18 20:06	7440-22-4			
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 14:10	10/11/18 20:06	7440-28-0			
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 14:10	10/11/18 20:06	7440-62-2			
Zinc	0.0029J	mg/L	0.010	0.0021	1	10/09/18 14:10	10/11/18 20:06	7440-66-6			
7470 Mercury	Analytical Met	thod: EPA	7470A Prep	paration Met	hod: EP	A 7470A					
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:32	7439-97-6			
300.0 IC Anions 28 Days	Analytical Met	thod: EPA (300.0								
Chloride	0.098J	mg/L	0.25	0.024	1		10/09/18 09:16	16887-00-6	В		
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 09:16	16984-48-8			
Sulfate	ND	mg/L	1.0	0.017	1		10/09/18 09:16	14808-79-8			



Project:	Plant Hamr	mond - Huffa	ker Road										
Pace Project No.:	2610116												
QC Batch:	15032			Analys	is Meth	od: E	EPA 7470A						
QC Batch Method:	EPA 7470	A		Analys	is Desc	ription: 7	470 Mercur	у					
Associated Lab San	nples: 26'	10116001, 2	610116002										
METHOD BLANK:	67254			N	latrix: \	Water							
Associated Lab San	nples: 26 [°]	10116001, 2	610116002										
				Blank		Reporting							
Paran	neter		Units	Result	t	Limit	MDL		Analyzed	l Qu	alifiers		
Mercury			mg/L		ND	0.00050	0.00	0036 ´	10/10/18 11	:47			
LABORATORY COM	NTROL SAM	IPLE: 672	55										
				Spike	L	.CS	LCS % Rec		Rec				
Paran	neter		Units	Conc.	Re	esult	% Rec	Lin	nits	Qualifiers	_		
Mercury			mg/L	.0025		0.0025	102		80-120				
MATRIX SPIKE & M	IATRIX SPI		TE: 67256			67257							
				MS	MSD								
_			269791027	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	: % Rec	: Limits	RPD	RPD	Qual
Mercury		mg/L	ND	.0025	.00	25 0.0026	0.0026	10	03 10	05 75-125	5 2	20	

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



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

-	

QC Batch: 1501	QC Batch: 15013		nod: EPA	6020B				
QC Batch Method: EPA	3005A	Analysis Description: 6020B MET						
Associated Lab Samples:	2610116001, 2610116002							
METHOD BLANK: 67190		Matrix:	Water					
Associated Lab Samples:	2610116001, 2610116002							
		Blank	Reporting					
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers		
Antimony	mg/L	ND	0.0030	0.00078	10/11/18 17:43			
Arsenic	mg/L	ND	0.0050	0.00057	10/11/18 17:43			
Barium	mg/L	ND	0.010	0.00078	10/11/18 17:43			
Beryllium	mg/L	ND	0.0030	0.000050	10/11/18 17:43			
Boron	mg/L	ND	0.040	0.0039	10/11/18 17:43			
Cadmium	mg/L	ND	0.0010	0.000093	10/11/18 17:43			
Calcium	mg/L	ND	0.50	0.014	10/11/18 17:43			
Chromium	mg/L	ND	0.010	0.0016	10/11/18 17:43			
Cobalt	mg/L	ND	0.010	0.00052	10/11/18 17:43			
Copper	mg/L	ND	0.025	0.0013	10/11/18 17:43			
Lead	mg/L	ND	0.0050	0.00027	10/11/18 17:43			
Lithium	mg/L	ND	0.050	0.00097	10/11/18 17:43			
Molybdenum	mg/L	ND	0.010	0.0019	10/11/18 17:43			
Nickel	mg/L	ND	0.010	0.00095	10/11/18 17:43			
Selenium	mg/L	ND	0.010	0.0014	10/11/18 17:43			
Silver	mg/L	ND	0.010	0.00095	10/11/18 17:43			
Thallium	mg/L	ND	0.0010	0.00014	10/11/18 17:43			
Vanadium	mg/L	ND	0.010	0.0019	10/11/18 17:43			
Zinc	mg/L	ND	0.010	0.0021	10/11/18 17:43			

LABORATORY CONTROL SAMPLE: 67191

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L		0.10	102	80-120	
Arsenic	mg/L	.1	0.098	98	80-120	
Barium	mg/L	.1	0.097	97	80-120	
Beryllium	mg/L	.1	0.10	100	80-120	
Boron	mg/L	1	0.98	98	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.099	99	80-120	
Cobalt	mg/L	.1	0.097	97	80-120	
Copper	mg/L	.1	0.10	101	80-120	
Lead	mg/L	.1	0.10	100	80-120	
Lithium	mg/L	.1	0.097	97	80-120	
Molybdenum	mg/L	.1	0.10	100	80-120	
Nickel	mg/L	.1	0.10	100	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Silver	mg/L	.1	0.097	97	80-120	
Thallium	mg/L	.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.



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

LABORATORY CONTROL S	SAMPLE: 67	'191										
			Spike	LCS	5	LCS	% Rec	;				
Parameter		Units	Conc.	Resu	ilt	% Rec	Limits	Qi	alifiers			
Vanadium		mg/L	.1		0.10	100	80	-120				
Zinc		mg/L	.1		0.10	103	80	-120				
MATRIX SPIKE & MATRIX S		CATE: 67194			67195							
			MS	MSD								
		2610117002	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	.1	.1	0.11	0.11	108	110	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.11	106	108	75-125	2	20	
Barium	mg/L	0.028	.1	.1	0.13	0.13	101	103	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	0.096	0.096	96	96	75-125	0	20	
Boron	mg/L	6.9	1	1	9.9	8.0	295	107	75-125	21	20	R1
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	104	75-125	1	20	
Calcium	mg/L	286	1	1	348	284	6160	-242	75-125	20	20	M6
Chromium	mg/L	ND	.1	.1	0.10	0.10	102	102	75-125	1	20	
Cobalt	mg/L	0.016	.1	.1	0.12	0.12	102	99	75-125	2	20	
Copper	mg/L	ND	.1	.1	0.10	0.096	100	96	75-125	4	20	
Lead	mg/L	ND	.1	.1	0.098	0.099	98	99	75-125	1	20	
Lithium	mg/L	ND	.1	.1	0.099	0.097	98	97	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	109	108	75-125	1	20	
Nickel	mg/L	0.0024J	.1	.1	0.10	0.10	101	99	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.11	0.11	105	105	75-125	0	20	
Silver	mg/L	ND	.1	.1	0.097	0.097	97	97	75-125	0	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	99	75-125	1	20	

.1

.1

0.11

0.10

0.11

0.10

105

98

106

99

75-125

75-125

20

1 20

1

.1

.1

ND

0.0034J

mg/L

mg/L

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

Vanadium

Zinc

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



Project:	Plant Hammond -	Huffaker Road						
Pace Project No.:	2610116							
QC Batch:	14910		Analysis Method:		SM 2540C			
QC Batch Method:	SM 2540C		Analysis [Description:	2540C Total D	issolved Solids		
Associated Lab Sar	mples: 26101160	01						
LABORATORY CO	NTROL SAMPLE:	66856						
			Spike	LCS	LCS	% Rec		
Parameter		Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Sol	ids	mg/L	400	400	100	84-108		
SAMPLE DUPLICA	.TE: 66857							
			2610112003	B Dup		Max		
Para	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	2	38 2	232	3	10	
SAMPLE DUPLICA	TE: 66858							
			2610117001	l Dup		Max		
Para	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	70	00 00	615	13	10 D6	

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 - Huffaker Road

Pace Project No.: 2610116

Project No.:	2010110	

QC Batch: 14939		Analysis	s Method:	EI	PA 300.0					
QC Batch Method: EPA 300	0.0	Analysis	s Descriptic	on: 30	0.0 IC Anio	ns				
Associated Lab Samples: 2	610116001, 2610116002									
METHOD BLANK: 66933		M	atrix: Wate	r						
Associated Lab Samples: 2	610116001, 2610116002									
		Blank	Re	porting						
Parameter	Units	Result	L	_imit	MDL		Analyzed	Qu	alifiers	
Chloride	mg/L	0.0)78J	0.25	0	.024 10/	08/18 16:40)		
Fluoride	mg/L		ND	0.30	0	.029 10/	08/18 16:40)		
Sulfate	mg/L		ND	1.0	0	.017 10/	08/18 16:40)		
	MPI E: 66034									
LABORATORT CONTROL 3A	IVII EE. 00954	Spike	LCS		LCS	% Re	c			
Parameter	Units	Conc.	Result		% Rec	Limits	s Qi	ualifiers		
Chloride	mg/L	10		10.3	103	9	0-110		_	
Fluoride	mg/L	10		10.2	102	9	0-110			
Sulfate	mg/L	10		11.0	110	9	0-110			
MATRIX SPIKE & MATRIX SP				66036						
	INE DOI LIGATE. 00933	, MS	MSD	00300						
	2610035001	Spike	Spike	MS	MSD	MS	MSD	% Rec	Max	
Parameter	Units Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD RPD	Qual

Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.7	10	10	11.7	11.7	101	101	90-110	0	15	
Fluoride	mg/L	0.076J	10	10	10.0	10.0	99	100	90-110	0	15	
Sulfate	mg/L	38.5	10	10	44.7	44.8	62	63	90-110	0	15	M1

MATRIX SPIKE SAMPLE:	66937						
_		2610037001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	3.1	10	13.4	103	90-110	
Fluoride	mg/L	0.22J	10	10.3	101	90-110	
Sulfate	mg/L	48.6	10	53.6	50	90-110 E	

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 Road

Pace Project No.: 2610116

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- B Analyte was detected in the associated method blank.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- 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.

R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:Plant Hammond - Huffaker RoadPace Project No.:2610116

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610116001	FB-03	EPA 3005A	15013	EPA 6020B	15073
2610116002	EB-02	EPA 3005A	15013	EPA 6020B	15073
2610116001	FB-03	EPA 7470A	15032	EPA 7470A	15116
2610116002	EB-02	EPA 7470A	15032	EPA 7470A	15116
2610116001	FB-03	SM 2540C	14910		
2610116001	FB-03	EPA 300.0	14939		
2610116002	EB-02	EPA 300.0	14939		

	1.000
	93
	专
	1
	S
	-
5	8
1	Seo
<u>کہ</u>	100
1.2	~

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

Section Require	n A S ed Client Information:	ection B tequired Project Information:	Section C Invoice Information:	Darro / Of /
Compa	ny Georgia Power - Coal Combustion Residuals R	teport To: Joju Abraham / Lauren Petty	Attention scsinvoices@southernco.com	
Addres	s. 2480 Maner Road	opy To: Geosyntec	Company Name	
	Atlanta, GA 30339		Address	Regulatory Agency
Email:	jabraham@southernco.com	urchase Order # SCS10348606	Pace Quote	
Phone:	(404)506-7239 Fax P	roject Name: Plant Hammond - Huffaker Road	Pace Project Manager betsy modaniel@pacelabs.com,	State / Location
Reques	sted Due Date Standard TAT P	roject # CN6701	Pace Profile # 3283	GA
			Requested Analysis Filtered	(YN)
	MATRIX	CODE to Def() CODE to Def() COLLECTED	Preservatives	
	SAMPLE ID Software	S S P WIT	s s s s s s s s s s s s s s s s s s s	(N/X) a
# W3TI	One Character per box. Wee (A-Z, 0-9 /, -) Other Sample Ids must be unique Tassee	3 C S S S S S S S S S S S S S S S S S S	акменсе теме ел ж ор соитыиее иозеелова н250л н250л иаОН Маслаа Масла	nnold) leubiseЯ
L.	FD-03	VT G 10/03/18 (639 10/03/18 1649		2
2	EB-02	WT 6 1000/10 1651 10/08/18 1701	V Y Y Y	~
3				
4				
2				
9				
7				
8		16	01100	Action
6				
10	Mer			A)
H	22			
12				
	ADDITIONAL COMMENTS	RELINCUISHED BY / AFFILIATION DATE	E TIME ACCEPTED BY / AFFILIATION DATE	TIME SAMPLE CONDITIONS
• Metals I	ist: Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Cu,Pb,Ni,Se,Ag,TI,V,Zn	Apellia Muluhun 10/00/1	e it: 45 Naudos 7: 12 hun [10/2/18	
KY M	Hals App II : LI Has Mo	Nardos Tilahun 10/3/	18 19:30 6756 10 101 413	19.30-
		Letts Low 10/4	18/1000 Mitty Nguyen / Pace 10/8/18	0001
			1 MADIMAN VOLGIA	8123020Y V V
Pa	MO#: 2610116	SAMPLER NAME AND SIGN	VATURE	
ge 1		PRINT Name of SAMPL	ER: Naclio Muskus) (səld səq βε οqλ)))))))
4 of		SIGNATURE of SAMPL	ER: Norlia Wfurling DATE Signed: 10/03/11	LEW Cool C
15	2610116			

Sample Condition Upon Receipt Project # Courier: Period Project # Courier: Period Project # Courier: Period Project # Decking Marcing #: Due Date: 10/11/18 Courier: Project # Due Date: 10/11/18 Color Temperature Project # Due Date: 10/11/18 Color Temperature Project # Due Date: 10/11/18 Color Temperature Project # Due Date: 10/11/18 Colar of Custop Present: Project # Due Date: 10/11/18 Colar of Custop Present: Project # Date: 10/11/18 Colar of Custop Present: Project # Date: 10/11/18 Sample Arrive with Hoft Time Project # 20/11/18 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>						
Project #	Sam	ple Condition	Upon Receipt	20		
Courier: Pet EX UPS USPS Client Commercial Pace Other Tracking #: 261.01116 Pri: Bi Due Date: 10/11/18 Due D	Face Analytical Client Name:	GTA Y	On or	Project #		
Courter: Fed: Ex. UPS USPS Client Commercial Prace Other PUL # . ZOUUIC Catadrag Seal on Cooler/Box Present: Lyss no Seals intact: Lyss Due Date: 18/11/18 Cooler Temperature Bubble Bags None Other Samples on tex. Colling process jus Bagun Cooler Temperature Colling Counter, USPS Type of tex: Fin: Bit Samples on tex. Colling process jus Bagun Colari of Custody Present: Colari of Custody				104.2	610116	
Custody Seal on Cooler/Box Present: 1945 no Seals Intact: 1945 CLINT: CRPouer-CCR Packing Material: Bubble Wrap Bubble Bage None Content Thermometr Used 9 Thermometr Used 9 Chain of Custody Present: 24 Comments: C	Courier: Fed Ex UPS USPS Client	t 🔲 Commercial 🛩	Pace Other		Due Date: 10/	11/18
Packing Material: Bubble Wrap Bubble Bag None Other Thermometer Used 9 Type of Icle: Will Bus None Dampites on ice, coding process tats bugs Color Tanperature 0 Will Bus None Dampites on ice, coding process tats bugs Thermometer Used 0 Will Bus None Dampites on ice, coding process tats bugs Thermometer Used 0 Will Bus None Dampites on ice, coding process tats bugs Thermometer Used 0 Will Bus None Dampites on ice, coding process tats bugs Thermometer Used 0 Will Bus None Dampites on ice, coding process tats bugs Thermometer Used 0 Will Bus None Dampites on ice, coding process tats bugs Chain of Custody Present: 0 Will Bus Dampites on ice, coding process tats bugs Short Hold Time Analysis (cr2thr): Will Bus Dampites on ice, coding process tats bugs Short Hold Time Analysis (cr2thr): Will Code Anal B Dampites on ice, coding process tats bugs Containers Intad: 0 Dampites on ice, coding process tats bugs Dampites on ice, coding procesets tats bugs Staff	Custody Seal on Cooler/Box Present:	no Seals i	ntact: Ves	CLIENT: GA	Power-CCR	
Thermometer Used 9.3 Type of Ice: (b) Blue None Bandles and tentility of Arconardian propersing the tengun Cooler Temperature 9.4 Comments: Date and tentility of Arconardian propersing the tengun Contain of Latisty Present: Comments: Date and tentility of Arconardian propersing the tengun Chain of Latisty Present: Comments: Comments: Chain of Latisty Present: Comments: Comments: Chain of Latisty Present: Comments: Comments: Samples Artives within Hold Time and tentility of Arconardian propersity and tengun Samples Artives within Hold Time: Cost Cost Sufficient Volume: Cost Cost No Correct Containers Used: Cost No No Pace Containers Needing preservation are functed. Cost No Samples artischer Michton Cost No No Samples artischer Michton Cost No No Samples artischer Michold Dianaysis Matrix: No	Packing Material: Bubble Wrap Bubble	Bags None	Other			
Color Temperature Disclogical Trisse is Frozen: Yas No Date and initial of derivan keymings on enterts: Chain of Custody Present: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Chain of Custody Present: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Chain of Custody Present: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Sampler Name & Signature on COC: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Sufficient Volume: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Sufficient Volume: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Intert and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Intert and initial of derivan keymings on enterts: Image and initial of derivan keymings on enterts: Image and initial of derivan keymings on en	Thermometer Used 8 3	Type of Ice: Wet)	Blue None	Samples on ice, coo	ling process has begun	
Chain of Custody Present: Image: Section 2014 Image: Section 2014 Image: Section 2014 Chain of Custody Palinquished: Image: Section 2014 Image: Section 2014 Image: Section 2014 Samples Arrived within Hold Time: Image: Section 2014 Image: Section 2014 Image: Section 2014 Samples Arrived within Hold Time: Image: Section 2014 Image: Section 2014 Image: Section 2014 Sufficient Volume: Image: Section 2014 Image: Section 2014 Image: Section 2014 Sufficient Volume: Image: Section 2014 Image: Section 2014 Image: Section 2014 Page: Containers Used: Image: Section 2014 Image: Section 2014 Image: Section 2014 Page: Containers Used: Image: Section 2014 Image: Section 2014 Image: Section 2014 Containers Intact: Image: Section 2014 Image: Section 2014 Image: Section 2014 Image: Section 2014 Filtered volume received for Dissolved tests Image: Section 2014 Image: Section 2014 </td <td>Cooler Temperature</td> <td>Biological Tissue i</td> <td>s Frozen: Yes No Comments:</td> <td>Date and Initia contents:</td> <td>s of person/examining</td> <td></td>	Cooler Temperature	Biological Tissue i	s Frozen: Yes No Comments:	Date and Initia contents:	s of person/examining	
Chain of Custody Filled Out: Image: Two	Chain of Custody Present:		1.			
Chain of Custody Relinquished: Image: Name Relinquished: Image: Relinquishe: Image: Relinquishe: <td< td=""><td>Chain of Custody Filled Out:</td><td></td><td>2.</td><td></td><td></td><td></td></td<>	Chain of Custody Filled Out:		2.			
Sampler Name 2. Signature on COC: Image: Two	Chain of Custody Relinquished:	, ZTes □No □N/A	3.			
Samples Arrived within Hold Time: Image: Simples Arrived within Hold Time (Comparison) Image: Simples (C72hr): Image: Simples (C72hr): <td>Sampler Name & Signature on COC:</td> <td>Ves DNo DN/A</td> <td>4.</td> <td></td> <td></td> <td></td>	Sampler Name & Signature on COC:	Ves DNo DN/A	4.			
Short Hold Time Analysis (<72hr):	Samples Arrived within Hold Time:	Fes No N/A	5.			
Rush Turn Around Time Requested: rs rs <td>Short Hold Time Analysis (<72hr):</td> <td></td> <td>6.</td> <td></td> <td></td> <td></td>	Short Hold Time Analysis (<72hr):		6.			
Sufficient Volume:	Rush Turn Around Time Requested:	□Yes □HO □N/A	7.			
Correct Containers Used: Image: No NA 9, -Pace Containers Used: Image: No NA 10, Containers Intact: Image: No NA 10, Filtered volume received for Dissolved tests Image: No NA 11, Sample Labels match COC: Image: No Image: No NA 12, -Includes date/time/ID/Analysis Matrix: Image: No NA 13, At containers needing preservation are found to be in completed Image: No Image: No Image: No Image: No Samples checked for dechlorination: Image: No NA 14, Image: No Image: No <td>Sufficient Volume:</td> <td>-Eres 🗆 No 🗆 N/A</td> <td>8.</td> <td></td> <td></td> <td></td>	Sufficient Volume:	-Eres 🗆 No 🗆 N/A	8.			
-Pace Containers Used: Image: Second and the secon	Correct Containers Used:	Ves DNo DN/A	9.			
Containers Intact: Image: Sime intact: </td <td>-Pace Containers Used:</td> <td></td> <td>×.</td> <td></td> <td></td> <td></td>	-Pace Containers Used:		×.			
Filtered volume received for Dissolved tests Image International Int	Containers Intact:	Pres INO IN/A	10.			
Sample Labels match COC: 4 75 No N/A 12. -Includes date/time/ID/Analysis Matrix: 4// 4// 13. All containers needing preservation have been checked. 75 No N/A 13. All containers needing preservation have been checked. 75 No N/A 13. All containers needing preservation are found to be in completed 75 No N/A exceptions: VOA, collorm, TOC, 0&G, WI-DPIO (water) res No N/A Yes No 2NA 14. 14. Headspace in VOA Vials (>6mm): res 2NO 2N/A 15. Trip Blank Present: Ives No 2N/A 16. Trip Blank Lot # (if purchased): 2NO 2N/A 16. 2N/A Pace Trip Blank Lot # (if purchased): 2NO 2N/A 16. 2N/A 16. Comments/ Resolution: 2NO 2N/A 16. 2N/A 16. 2N/A 16. Pace Trip Blank Lot # (if purchased): 2N/A 2N/A 2N/A 2N/A 2N/A 2N/A 2N/A 2N/A	Filtered volume received for Dissolved tests	TYes No EN/A	11.			
-Includes date/time/ID/Analysis Matrix: Q)	Sample Labels match COC:	Yes DNC DN/A	12.			
All containers needing preservation have been checked.	-Includes date/time/ID/Analysis Matrix:	$-\omega$				
All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) Headspace in VOA Vials (>6mm): exception: Pripe Blank Present: Pripe Blank Custody Seals Present Preson Contacted: Comments/ Resolution: Person Contacted: Comments/ Resolution: Person Contacted: Date: Project Manager Review:	All containers needing preservation have been checked.	-Eves ONO ON/A	13.			
exceptions: VOA. coliform, TOC. O&G, WI-DRO (water) res Initial when completed Lot # of added preservative Samples checked for dechlorination: res No ZNA 14. Headspace in VOA Vials (>6mm): res No ZNA 15. Trip Blank Present: res No ZNA 16. Trip Blank Custody Seals Present res No ZNA 16. Pace Trip Blank Lot # (if purchased):	All containers needing preservation are found to be in compliance with EPA recommendation.	Pres Ino In/A		1	2	
Samples checked for dechlorination: res No ZNVA 14. Headspace in VOA Vials (>6mm): res No ZNVA 15. Trip Blank Present: res No ZNVA 16. Trip Blank Custody Seals Present res No ZNVA 16. Pace Trip Blank Lot # (if purchased):	exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	Tres ENo	Initial when completed	Lot # of added preservative		
Headspace in VOA Vials (>6mm): res No IntrA 15. Trip Blank Present: res No IntrA 16. Trip Blank Custody Seals Present res No IntrA 16. Pace Trip Blank Lot # (if purchased): Image: Present Image: Present Image: Present Pace Trip Blank Lot # (if purchased): Image: Present Image: Present Image: Present Person Contacted: Image: Date/Time: Image: Present Image: Present Image: Present Image: Present Project Manager Review: Image: Present Image: Present Image: Present Image: Present	Samples checked for dechlorination:		14.			
Trip Blank Present: Trip Blank Custody Seals Present Pace Trip Blank Lot # (if purchased): Pace Trip Blank Lot # (if purchased): Person Contacted: Date/Time: Comments/ Resolution: Person Contacted: Date/Time: Date/Time: Date Project Manager Review:	Headspace in VOA Vials (>6mm):	Yes No ANA	15.		2	
Trip Blank Custody Seals Present Pace Trip Blank Lot # (if purchased): Client Notification/ Resolution: Person Contacted: Date/Time: Comments/ Resolution: Date/Time: Project Manager Review: Project Manager Review:	Trip Blank Present:	Ves DNo 217A	16.			
Pace Trip Blank Lot # (if purchased): Field Data Required? Y / N Client Notification/ Resolution:	Trip Blank Custody Seals Present		-			
Client Notification/ Resolution: Date/Time: Field Data Required? Y N Person Contacted:	Pace Trip Blank Lot # (if purchased):					
Person Contacted: Date/Time:	Client Notification/ Resolution:			Field Data Require	d? Y / N	
Comments/ Resolution:	Person Contacted:	Date/	Time:			
Project Manager Review: Date:	Comments/ Resolution:					
Project Manager Review: Date:						
Project Manager Review: Date:						
Project Manager Review: Date:						
Project Manager Review: Date:	·					
Project Manager Review: Date:	9 <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

October 15, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 2610161

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc. Rebecca Thornton, Pace Analytical Atlanta





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 2610161

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2610161001	FB-04	Water	10/04/18 17:00	10/05/18 11:30



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:2610161

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610161001		EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3



ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

Sample: FB-04	Lab ID:	2610161001	Collecte	ed: 10/04/18	8 17:00	Received: 10/	05/18 11:30 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Me	thod: EF	PA 3005A			
Antimony	ND	mg/L	0.0030	0.00078	1	10/09/18 16:23	10/12/18 17:42	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/09/18 16:23	10/12/18 17:42	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	10/09/18 16:23	10/12/18 17:42	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/09/18 16:23	10/12/18 17:42	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	10/09/18 16:23	10/12/18 17:42	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/09/18 16:23	10/12/18 17:42	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	10/09/18 16:23	10/12/18 17:42	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/09/18 16:23	10/12/18 17:42	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/09/18 16:23	10/12/18 17:42	7440-48-4	
Copper	ND	mg/L	0.025	0.0013	1	10/09/18 16:23	10/12/18 17:42	7440-50-8	
Lead	ND	mg/L	0.0050	0.00027	1	10/09/18 16:23	10/12/18 17:42	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/09/18 16:23	10/12/18 17:42	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 17:42	7439-98-7	
Nickel	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:42	7440-02-0	
Selenium	ND	mg/L	0.010	0.0014	1	10/09/18 16:23	10/12/18 17:42	7782-49-2	
Silver	ND	mg/L	0.010	0.00095	1	10/09/18 16:23	10/12/18 17:42	7440-22-4	
Thallium	ND	mg/L	0.0010	0.00014	1	10/09/18 16:23	10/12/18 17:42	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0019	1	10/09/18 16:23	10/12/18 17:42	7440-62-2	
Zinc	0.0042J	mg/L	0.010	0.0021	1	10/09/18 16:23	10/12/18 17:42	7440-66-6	В
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EP	A 7470A			
Mercury	ND	mg/L	0.00050	0.000036	1	10/10/18 08:25	10/10/18 12:34	7439-97-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	540C						
Total Dissolved Solids	ND	mg/L	25.0	10.0	1		10/08/18 18:02		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	0.17J	mg/L	0.25	0.024	1		10/10/18 19:43	16887-00-6	В
Fluoride	ND	ma/L	0.30	0.029	1		10/10/18 19:43	16984-48-8	
Sulfate	ND	ma/L	1.0	0.017	1		10/10/18 19:43	14808-79-8	



Project:	Plant Hamr	nond - Huffa	aker Road										
Pace Project No .:	2610161												
QC Batch:	15032			Analys	is Meth	iod: E	EPA 7470A						
QC Batch Method:	EPA 7470	A		Analys	is Desc	cription: 7	7470 Mercury	/					
Associated Lab San	nples: 26'	10161001											
METHOD BLANK:	67254			N	latrix: \	Water							
Associated Lab San	nples: 26 [°]	10161001											
Paran	neter		Units	Blank Result	t	Reporting Limit	MDL		Analyzed	Qua	alifiers		
Mercury			mg/L		ND	0.0005	0.00	0036 1	0/10/18 11:	47			
LABORATORY COM	NTROL SAM	IPLE: 672	55										
				Spike	L	CS	LCS	% R	Rec				
Paran	neter		Units	Conc.	R	esult	% Rec	Lim	its	Qualifiers	_		
Mercury			mg/L	.0025		0.0025	102		80-120				
MATRIX SPIKE & N	IATRIX SPIK		ATE: 67256			67257							
				MS	MSD								
			269791027	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	. .
Paramete	r	Units	Result	Conc.	Conc.	. Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury		mg/L	ND	.0025	.00	25 0.0026	0.0026	10	03 10	5 75-125	2	20	

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



Project: Plant Hammond - Huffaker Road

2610161 Pace Project No.

ce	Project No.	.: 26	1016

QC Batch:	15051		Analysis Meth	nod: l	EPA 6020B		
QC Batch Method:	EPA 3005A		Analysis Deso	cription: 6	6020B MET		
Associated Lab Samp	ples: 2610161001						
METHOD BLANK:	67344		Matrix:	Water			
Associated Lab Samp	ples: 2610161001						
			Blank	Reporting			
Parame	eter I	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony		mg/L	ND	0.003	0.00078	10/12/18 16:10	
Arsenic	I	mg/L	ND	0.005	0.00057	10/12/18 16:10	
Barium	I	mg/L	ND	0.01	0.00078	10/12/18 16:10	
Beryllium	I	mg/L	ND	0.003	0.000050	10/12/18 16:10	
Boron	1	mg/L	ND	0.04	0.0039	10/12/18 16:10	

Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/12/18 16:10	
Arsenic	mg/L	ND	0.0050	0.00057	10/12/18 16:10	
Barium	mg/L	ND	0.010	0.00078	10/12/18 16:10	
Beryllium	mg/L	ND	0.0030	0.000050	10/12/18 16:10	
Boron	mg/L	ND	0.040	0.0039	10/12/18 16:10	
Cadmium	mg/L	ND	0.0010	0.000093	10/12/18 16:10	
Calcium	mg/L	ND	0.50	0.014	10/12/18 16:10	
Chromium	mg/L	ND	0.010	0.0016	10/12/18 16:10	
Cobalt	mg/L	ND	0.010	0.00052	10/12/18 16:10	
Copper	mg/L	ND	0.025	0.0013	10/12/18 16:10	
Lead	mg/L	ND	0.0050	0.00027	10/12/18 16:10	
Lithium	mg/L	ND	0.050	0.00097	10/12/18 16:10	
Molybdenum	mg/L	ND	0.010	0.0019	10/12/18 16:10	
Nickel	mg/L	ND	0.010	0.00095	10/12/18 16:10	
Selenium	mg/L	ND	0.010	0.0014	10/12/18 16:10	
Silver	mg/L	ND	0.010	0.00095	10/12/18 16:10	
Thallium	mg/L	ND	0.0010	0.00014	10/12/18 16:10	
Vanadium	mg/L	ND	0.010	0.0019	10/12/18 16:10	
Zinc	mg/L	0.0029J	0.010	0.0021	10/12/18 16:10	

LABORATORY CONTROL SAMPLE: 67345

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	mg/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/L	.1	0.10	104	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	.1	0.10	104	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.11	106	80-120	
Cobalt	mg/L	.1	0.10	103	80-120	
Copper	mg/L	.1	0.11	105	80-120	
Lead	mg/L	.1	0.10	103	80-120	
Lithium	mg/L	.1	0.10	105	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Nickel	mg/L	.1	0.11	106	80-120	
Selenium	mg/L	.1	0.10	101	80-120	
Silver	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.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.



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

LABORATORY CONTROL S	AMPLE: 67	7345										
			Spike	LCS	5	LCS	% Rec	;				
Parameter		Units	Conc.	Resu	lt	% Rec	Limits	Qu	ualifiers	_		
Vanadium		mg/L	.1		0.11	105	80	-120				
Zinc		mg/L	.1		0.10	104	80	-120				
MATRIX SPIKE & MATRIX S		CATE: 67346			67347							
			MS	MSD								
		2610159001	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	.1	.1	0.11	0.11	109	107	75-125	2	20	
Arsenic	mg/L	ND	.1	.1	0.11	0.10	105	105	75-125	1	20	
Barium	mg/L	0.18	.1	.1	0.29	0.29	116	107	75-125	3	20	
Beryllium	mg/L	ND	.1	.1	0.096	0.094	96	94	75-125	2	20	
Boron	mg/L	0.082	1	1	1.0	1.0	95	92	75-125	3	20	
Cadmium	mg/L	ND	.1	.1	0.10	0.10	104	102	75-125	2	20	
Calcium	mg/L	41.7	1	1	50.9	43.6	917	191	75-125	15	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	108	103	75-125	5	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.10	105	103	75-125	3	20	
Copper	mg/L	ND	.1	.1	0.10	0.10	104	100	75-125	4	20	
Lead	mg/L	ND	.1	.1	0.099	0.098	99	98	75-125	1	20	
Lithium	mg/L	0.011J	.1	.1	0.11	0.11	97	95	75-125	2	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	107	102	75-125	5	20	
Nickel	mg/L	ND	.1	.1	0.10	0.10	104	101	75-125	3	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	103	101	75-125	2	20	
Silver	mg/L	ND	.1	.1	0.10	0.099	104	99	75-125	4	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	100	75-125	0	20	
Vanadium	mg/L	ND	.1	.1	0.11	0.11	109	106	75-125	3	20	
Zinc	mg/L	0.0041J	.1	.1	0.11	0.10	101	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 -	Huffaker Road						
Pace Project No.:	2610161							
QC Batch:	14931		Analysis M	/lethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis [Description:	2540C Total [Dissolved Solids		
Associated Lab Sa	mples: 26101610	001						
LABORATORY CO	NTROL SAMPLE:	66900						
			Spike	LCS	LCS	% Rec		
Para	meter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Dissolved Sol	ids	mg/L	400	406	102	84-108		
SAMPLE DUPLICA	TE: 66901							
			2610164001	Dup		Max		
Para	meter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L)J 17	.0J	43	10 D6	
SAMPLE DUPLICA	TE: 66902							
			2610162002	2 Dup		Max		
Para	meter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Dissolved Sol	ids	mg/L	13	35 1	28	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.



Project: Plant Hammond - Huffaker Road

QC Batch: 15084		Analysis Me	ethod:	EPA 300.0		
QC Batch Method: EPA 300.0		Analysis De	escription:	300.0 IC Anior	IS	
Associated Lab Samples: 2610161	001					
METHOD BLANK: 67495		Matrix	: Water			
Associated Lab Samples: 2610161	001					
		Blank	Reporting	J		
Parameter	Units	Result	Limit	MDL	Analyz	ed Qualifiers
Chloride	mg/L	0.16	J 0	.25 0.	024 10/10/18	14:23
Fluoride	mg/L	ND) 0	.30 0.	029 10/10/18	14:23
Sulfate	mg/L	ND)	1.0 0.0	017 10/10/18	14:23
LABORATORY CONTROL SAMPLE:	67496					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10	100	90-110	
laonao			407	407	00 440	

Parameter	Units	2610158001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.1	10	10	16.5	16.5	104	105	90-110	0	15	
Fluoride	mg/L	0.24J	10	10	10.3	10.3	100	100	90-110	0	15	
Sulfate	mg/L	209	10	10	154	154	-555	-554	90-110	0	15	E,M1

MATRIX SPIKE SAMPLE:	67499						
		2610158002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	1.4	10	11.9	105	90-110	
Fluoride	mg/L	0.17J	10	10.2	100	90-110	
Sulfate	mg/L	5.2	10	15.6	104	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 - Huffaker Road

Pace Project No.: 2610161

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- B Analyte was detected in the associated method blank.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- 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 - Huffaker RoadPace Project No.:2610161

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2610161001	FB-04	EPA 3005A	15051	EPA 6020B	15111
2610161001	FB-04	EPA 7470A	15032	EPA 7470A	15116
2610161001	FB-04	SM 2540C	14931		
2610161001	FB-04	EPA 300.0	15084		

	tical
0	ace Analy
6	A.

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

		Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abra	ham / Laure	h Petty			Attentior	SC	sinvoice	scosol	uthernc	o.com			Γ					5	
Image: Contraction Image:		Address.	2480 Maner Road	Copy To:	Geosynte	0				Compan	y Name	A CONTRACT AND INCOME.	A LOCAL DATE OF A LOCAL DATE O											
			Atlanta, GA 30339							Address.									1	がたいとう	Regula	orv Ager	2	1000
		mail: ja	abraham@southernco.com	Purchase Orde	er #:	SCS103486	36			Pace Qu	iote:													
Полнование Доллании (Прина) Полнование Доллании (Прина) Полнование Доллании (Прина) Полнование Доллании (Прина) Полнование	Manual Control Manual	hone:	(404)506-7239 Fax	Project Name:	Plan	It Hammond	- Huffaker	Road		Pace Pro	oject Mar	ager.	betsy.m	Icdaniel	gpacelat	'LLOO S			1.051401	L Strategy	State	/Locatio		and and
	Mathematical and	equested	Due Date Stondard TAT	Project #:						Pace Pro	ofile #.	328.3										GA		
	Market Line	F			(F	F	1			時間		Reques	ted Ana	ysis Filt	ered (Y/N					
			MATRIX	CODE	cOWP)		COLLECT	ED	N		Pr	eservat	ives	N/A	N	N	+	-	Ŧ	1			「「「	
MR21 MR21 MR2 MR2 </td <td></td> <td></td> <td>SAMPLE ID</td> <td>Water DW Vater WT d St</td> <td>see valid code (G=GRAB C=</td> <td>STAR1</td> <td></td> <td>END</td> <td>T COLLECTIO</td> <td>Sł</td> <td></td> <td></td> <td></td> <td>†ze⊺</td> <td>• (sisi2 +</td> <td>** V</td> <td></td> <td></td> <td>To lo</td> <td>3</td> <td>(N/A) 81</td> <td></td> <td></td> <td></td>			SAMPLE ID	Water DW Vater WT d St	see valid code (G=GRAB C=	STAR1		END	T COLLECTIO	Sł				†ze⊺	• (sisi2 +	** V			To lo	3	(N/A) 81			
1 TO - O4 Mr (S lobule levr lobile row (S 4 1 2) 1	1 70 - OH Mile levit [lobile] 70 - H Mile Mile <t< td=""><td># MƏTI</td><td>One Character per box. Whe (A-Z, 0-9 /, -) An Ar Sample Ids must be unique Tissee</td><td>AR AR 10 15</td><td>) ADDE TYPE (</td><td>DATE</td><td>D</td><td>ATE TIM</td><td>m AMPLE TEMP A</td><td># ОF СОИТАІИЕР Ипріезегуед</td><td>HNO3 H520¢</td><td>N^gOH HCI</td><td>Na2S2O3</td><td>Oiher Oiher</td><td>III .qqA) sletaM</td><td>Medice Apply</td><td></td><td>3</td><td>2</td><td></td><td>nnold) leubiseЯ</td><td></td><td></td><td></td></t<>	# MƏTI	One Character per box. Whe (A-Z, 0-9 /, -) An Ar Sample Ids must be unique Tissee	AR AR 10 15) ADDE TYPE (DATE	D	ATE TIM	m AMPLE TEMP A	# ОF СОИТАІИЕР Ипріезегуед	HNO3 H520¢	N ^g OH HCI	Na2S2O3	Oiher Oiher	III .qqA) sletaM	Medice Apply		3	2		nnold) leubiseЯ			
2 2 4 4 6 4 6 4 7 4 7 4 8 4 9 4 10 10 11 10 12 4 13 14 14 15 15 16 16 16 17 16 18 16 19 16 10 17 11 17 11 17 12 16 13 16 14 17 15 16 16 16 17 16 18 16 19 17 10 17 11 17 11 17 11 17 12 16 13 17 14 17 15 16 16 17 17 17 18 17 19 17 10 17 10 17 11 17	1 1 1 1 1 1 <td>E F</td> <td>76-04</td> <td></td> <td>ST</td> <td>10/al/ve (1</td> <td>245 10h</td> <td>HIP 170</td> <td>01.62</td> <td>- ナ</td> <td>3</td> <td></td> <td></td> <td></td> <td>1</td> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td>2</td> <td></td> <td></td> <td>1</td>	E F	76-04		ST	10/al/ve (1	245 10h	HIP 170	01.62	- ナ	3				1	7					2			1
a b b b b b b b c c b b c c b b c c b b c c b b c c b b c c c b c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c c <td>a a b b c c c c <t< td=""><td>2</td><td></td><td></td><td>-</td><td></td><td>+</td><td>+</td><td>_</td><td>T</td><td>+</td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td>\int</td><td>l</td><td></td><td></td></t<></td>	a a b b c c c c <t< td=""><td>2</td><td></td><td></td><td>-</td><td></td><td>+</td><td>+</td><td>_</td><td>T</td><td>+</td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td>\int</td><td>l</td><td></td><td></td></t<>	2			-		+	+	_	T	+	_								1	\int	l		
4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <td>4 10 10 10 10 10 10 10 10 10 10 10 10 10 10 11 12 10 10 10 10 10 10 10 11 12 10 10 10 10 10 10 10 10 12 11 12 10 10 10 10 10 10 10 12 10 10 10 10 10 10 10 10 10 13 10 10 10 10 10 10 10 10 10 14 10 10 10 10 10 10 10 10 10 14 10 10 10 10 10 10 10 10 10 15 10 10 10 10 10 10 10 10 10 15 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>\langle</td> <td></td> <td>$\overline{)}$</td> <td></td> <td></td> <td></td>	4 10 10 10 10 10 10 10 10 10 10 10 10 10 10 11 12 10 10 10 10 10 10 10 11 12 10 10 10 10 10 10 10 10 12 11 12 10 10 10 10 10 10 10 12 10 10 10 10 10 10 10 10 10 13 10 10 10 10 10 10 10 10 10 14 10 10 10 10 10 10 10 10 10 14 10 10 10 10 10 10 10 10 10 15 10 10 10 10 10 10 10 10 10 15 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10	3							\langle												$\overline{)}$			
в в	8 9 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>$\left\{ \right\}$</td> <td></td> <td>1</td> <td></td> <td></td> <td>11</td>	4						$\left\{ \right\}$													1			11
в в	1 1 <td>5</td> <td></td> <td></td> <td></td> <td>8</td> <td>\setminus</td> <td></td> <td>\backslash</td> <td></td> <td>1</td> <td></td> <td>n</td> <td>12</td>	5				8	\setminus												\backslash		1		n	12
7 10 <t< td=""><td>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td></t<> <td>6</td> <td></td> <td>1</td> <td>50</td> <td>2</td> <td></td> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1/2</td> <td></td>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6		1	50	2											9						1/2	
Bit Model Applie Applie <td>Bale Month Month</td> <td>1</td> <td>4</td> <td>0</td> <td></td> <td>-</td> <td>Ž</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Bale Month	1	4	0											-	Ž								
9 11<	10 11 12 Monthail Monthail Monthail Monthail Monthail 11 12 Addition Addition <t< td=""><td>8</td><td>20</td><td>\backslash</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td>4</td><td></td><td></td></t<>	8	20	\backslash										10	-							4		
10 11 11 11 12 ADDITONAL CONNENTS RELEACEDTS FOR AFFLIATION DATE 12 ADDITONAL CONNENTS RELEACEDTS FOR AFFLIATION DATE THE ADDITONAL CONNENTS RELEACEDTS FOR AFFLIATION DATE THE AGOTTONAL CONNENTS Mediate Appendix RELEACEDTS FOR AFFLIATION DATE THE AGOTTONAL CONNENTS Mediate Appendix RELEACEDTS FOR AFFLIATION DATE THE AGOTTONAL CONNENTS Mediate Appendix RELEACEDTS FOR AFFLIATION DATE THE AGOTTONAL CONNENTS Mediate Appendix RELEACEDTS FOR AFFLIATION DATE THE AGOTTONAL CONNENTS Mediate Appendix RECENTED FOR AFFLIATION DATE THE AGOTTONAL CONNENTS Mediate Appendix RECENTED FOR AFFLIATION DATE THE AGOTTONAL CONNENTS Mediate Appendix RECENTED FOR AFFLIATION DATE THE AFFLIATION ADDITIONAL CONNENT RECENTED FOR AFFLIATION DATE THE AFFLIATION ADDITIONAL CONNENT RECENTED FOR AFFLIATION DATE THE THE ADDITIONAL RECENTED FOR AFFLIATION DATE THE THE ADDITIONAL RECENTED FOR AFFLIATION DATE THE	10 11 11 12 ADDITOVAL COMPATIS Mail In the state are according to the state area are are according to the state according to the state according tot the accor	6										2		X								D		
11 12 ADDITIONAL CONNENTS RELINCUESTIED BY AFFLUATION DATE TWE ADDITIONAL CONNENTS 12 ADDITIONAL CONNENTS RELINCUESTIED BY AFFLUATION DATE TWE ADDITIONAL CONNENTS RAMPLE Marele ist Solution Marele ist Solution DATE THE ADDITIONAL CONNENTS RAMPLE RAMPLE Marele ist Solution March Argunua IO/U/IS 10/U/IS 10/U/IS 10/U/IS 10/U/IS 10/U/IS Marele ist Solution March Argunua March Argunua March Argunua March Argunua 10/U/IS 10/U/IS 10/U/IS March Argunua March Argunua March Argunua March Argunua 10/U/IS 10/0/IS 10/U/IS 10/U/IS March Argunua March Argunua March Argunua 10/U/IS 10/U/IS 10/U/IS 10/U/IS 10/U/IS March Argunua March Argunua March Argunua March Argunua 10/U/IS 10/U/IS 10/U/IS 10/U/IS March Argunua March Argunua March Argunua March Argunua 10/U/IS 10/U/IS 10/U/IS March Argunua March Argunua March Argunua March Argunua 10/U/IS 10/U/IS March Argunua March Argunua March Argunua	11 12 12 12 12 ADDITOVAL CONNENTS RELATIONAL CONNENTS 12 ADDITOVAL CONNENTS RELATIONAL CONNENTS RELATIONAL 12 ADDITOVAL CONNENTS RELATIONAL ADDITOVAL CONNENTS 12 ADDITOVAL CONNENTS RELATIONAL ADDITOVAL CONNENTS 12 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 13 ADDEL ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 14 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 14 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 14 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 15 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 16 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 17 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 18 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 19 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 19 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CONNENTS 19 ADDITOVAL CONNENTS ADDITOVAL CONNENTS ADDITOVAL CON	10										2	1						_					
12 12 ADDITIONAL COMMENTS RELINCUISTED BY AFTELATION DATE THE ACCEPTED BY AFTELATION DATE THE AAMPLE CONDITIONS WARE IS A A REAL MEDILICA MARCH MEDILICA MEDILICA MEDILICA MARCH MEDILICA MEDILICA MARCH MEDILICA MARCH MEDILICA MARCH MEDILICA MARCH MARCH MEDILICA MARCH MEDILICA MARCH MEDILICA MARCH MARCH <t< td=""><td>12 12 ADDITIONAL COMMENTS RELINCUISING DATE Nee ACCEPTED FI AFTLATION DATE Nee SAMPLE Medit Applicit Machine RELINCUISING DATE Nee AcceptED FI AFTLATION DATE Nee Medit Applicit Machine Relinition Date Nee Nee Nee Medit Applicit Machine Relinition Date Nee Nee Nee Medit Applicit Machine Relinition Divid State Relinition Date Relinition Model Applicit Applicit Machine Relinition Divid State Relinition Divid State Model Applicit Applicit Applicit Applicit Applicit Applicit Applicit Model Cold State Applicit Applicit Applicit Applicit Applicit Applicit Model Applicit Applicit Applicit Applicit Applicit Applicit Applicit Model Applicit Applicit Applicit Applicit Applicit Applicit Applicit Model Applicit Applicit Applicit Applici</td><td>Ц</td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td>$\left(\right)$</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	12 12 ADDITIONAL COMMENTS RELINCUISING DATE Nee ACCEPTED FI AFTLATION DATE Nee SAMPLE Medit Applicit Machine RELINCUISING DATE Nee AcceptED FI AFTLATION DATE Nee Medit Applicit Machine Relinition Date Nee Nee Nee Medit Applicit Machine Relinition Date Nee Nee Nee Medit Applicit Machine Relinition Divid State Relinition Date Relinition Model Applicit Applicit Machine Relinition Divid State Relinition Divid State Model Applicit Applicit Applicit Applicit Applicit Applicit Applicit Model Cold State Applicit Applicit Applicit Applicit Applicit Applicit Model Applicit Applicit Applicit Applicit Applicit Applicit Applicit Model Applicit Applicit Applicit Applicit Applicit Applicit Applicit Model Applicit Applicit Applicit Applici	Ц					-				$\left(\right)$													
ADDITIONAL COMMENTS RELACTION DATE THE ACCEPTED BY LATELATION DATE THE ACCEPTED BY LATELATION DATE THE SAMPLE CONDITIONS Weals let Sh. A.B. B. B. B. C.	ADDITOVAL COMMENTS RELANCEDED I AFTLATION DATE THE ACCEPTED BY AFTLATION DATE THE CAMPLE CONTINUES Write is have as a be accord.co.curph.vis.ed. Model App IV : Li, Hg, Ho Model App IV : Li, Hg, Ho DATE Model App IV : Li, Hg, Ho DATE AMPLE CONTINUES * Model App IV : Li, Hg, Ho Model App IV : Li, Hg, Ho Model App IV : Li, Hg, Ho DATE Model App IV : Li, Hg, Ho DATE EAMPLE CONTINUES * Model App IV : Li, Hg, Ho MDL & DATE Model App IV : Li, Hg, Ho DATE Model App IV : Li, Hg, Ho EAMPLE AND ACCOMPANY EAMPLE CONTINUES * Model App IV : Li, Hg, Ho MDL & DATE MDL ACCOMPANY MALE AND ACCOMPANY EAMPLE AND ACCOMPANY	12							7												T			1
Meals list Share B. B. Cocourby, Se Agencia Cocourb	Weale let Educacico curbinise ATIVIZINMach Curcuments is based according to the state and construction in the state and the state	1225	ADDITIONAL COMMENTS	RE	INDUIS	IED BY / AFF	NOLLATION	d A	ATE	TIME	1		ACCEPT	ED BY I A	FILIATIC	N	1000 M	DATE	L.	ME	1000	SAMPLE C	NOTTION	5
* Model APP IV: Li Ha, Mo * Model APP IV: Li Ha, Mo * Model APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo * Model APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo * Model APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo * Model APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo * Model APP IV: Li Ha, Mo Model APP IV: Li Ha, Mo Wolf APP IV: Li Ha, Mo Mo * Model APP IV: Li Ha, Mo Mo Mo Wolf APP IV: Li Ha, Mo Mo * Mo * 2610161 Ac Rameler: Mo Mo Mo Mo * Mo * 2610161 Ac Rameler: Mo Mo Mo Mo	• Medels App IV: Li, Hg, HoMouldos TilahunIo/4/18 (950)Mole NoronIo/4/18 (950)Moth: 2610161 $275/m$ $10/4/18$ (950) $10/5/m$ $10/5/m$ $10/5/m$ $10/5/m$ Moth: 2610161 $275/m$ $10/4/m$ $10/5/m$ $10/5/m$ $10/5/m$ $10/5/m$ $10/6/m$ Moth: 2610161 $10/4/m$ $10/4/m$ $10/4/m$ $10/6/m$ $10/5/m$ $10/6/m$ $10/6/m$ Moth: 2610161 $10/4/m$ $10/4/m$ $10/4/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ Moth: 2610161 $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ Moth: 2610161 $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ Moth: 2610161 $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ Moth: 2610161 $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ Moth: 20/6/m $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$ $10/6/m$	Metals list: 5	Sb,As,Ba,Ee,B,Cd,Ca,Cr,Co,Cu,Pb,Ni,Se,Ag,Tl,V,Zn	N	Joch	a h	Herdin	in loto	81/10	180	10	land	1 50	ilah	(rw			0/4/15	KIRC	0				<u> </u>
With Norven With Norven 10/5/K 1000 Woth: 2610161 Multi Norven 10/5/K 1000 Moth: 2610161 Sampler Name and Signature NACTIMAN 10/5/K 1/30 Moth: 2610161 Sampler Name of Sampler: Norven 10/5/K 1/30 Moth: 2610161 Sampler Name of Sampler: Norven 10/5/K 1/30 Moth: 2610161 Sampler Name of Sampler: Norven 10/5/K 1/30 Moth: 2610161 Sampler Name of Sampler: Norven 10/5/K 1/30	With Motion With Monon With Monon </td <td>+ Mete</td> <td>de Apo IV : Ci, Ha, Mo</td> <td>N</td> <td>ado</td> <td>Still</td> <td>hur</td> <td>10/</td> <td>4/18</td> <td>195</td> <td>206</td> <td>28</td> <td>Ree</td> <td>1</td> <td></td> <td></td> <td></td> <td>5/4/18</td> <td>2</td> <td>2</td> <td></td> <td></td> <td></td> <td>-</td>	+ Mete	de Apo IV : Ci, Ha, Mo	N	ado	Still	hur	10/	4/18	195	206	28	Ree	1				5/4/18	2	2				-
MO#:2610161 SAMPLER NAME AND SIGNATURE MAX (MMAN 10/05/18/130 42 × × Bab WO#:2610161 SAMPLER NAME AND SIGNATURE Max (MMAN 10/05/18/130 42 × × IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	WO#: 2610161 WANNOW 10/05/18/130 42 × × WO#: 2610161 Sampler Name of Sampler: Name of Sampler: Name of Sampler: Babe WO#: 2610161 Temp in c Color (0/05/18/1/30 42 × ×) Signation: Out Name of Sampler: Name of Sampler: Name of Sampler: Babe Babe Date Signed: Out/100 Temp in c Color (0/05/18/1/30 42 × ×) Babe Babe Date Signed: Out/100 Date Signed: Out/100 Date Signed: Out/100		n	4M	3 La	3		101	5/18	100-	0	Nil	1 22	Vac	Vav			1/5/01	5 10	00				<u> </u>
WO#:2610161 same of sampler. No. C. C. M. Joo 1. C. C. M. Joo 1. C. C. C. M. Joo 1. C. C. C. C. M. Joo 1. C.	WO#:2610161 Sampler NAME and Signature North of Sampler: North of Sampler: <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td></td><td>_</td><td>Zo</td><td>V</td><td>Um</td><td>n</td><td>2</td><td></td><td>50/0</td><td>8/18</td><td>113</td><td>40</td><td>X</td><td>X</td><td></td></th<>							_			_	Zo	V	Um	n	2		50/0	8/18	113	40	X	X	
MUH. ZOLULOL SIGNATURE of SAMPLER: Nocline H 01/20/ 10 TEMP II C 550160 SIGNATURE of SAMPLER: Mol Die Date Signed: (2/04/10 TEMP II C 550160	WOH · COLULOL PRINT Name of SAMPLER: No ella Museuri (2/04/10) TEMP in C (2/01) SIGNATURE of SAMPLER: No ella Museuri (2/04/10) TEMP in C (2/01) SIGNATURE of SAMPLER: No ella Museuri (2/04/10) TEMP in C (2/01) Bio 10 (2/04/10) TEMP in C (2/01)	Pa				SA	WPLER N	AME AND S	IGNATU	RE			10000	10.00					Non State			u	-	1
SIGNATURE of SAMPLER: $M_{OL} \mathcal{L}_{O}$ $M_{OL} \mathcal{L}_{O}$ DATE Signed: $(O/OV/IC)$ Respectively $\mathcal{L}_{O} \mathcal{L}_{O} \mathcal{L}_{O}$	SIGNATURE of SAMPLER: $M_{DL} \mathcal{L}_{D}$ $M_{DL} \mathcal{L}_{D} \mathcal{H}_{1} \mathcal{D} $	age ^	TOTOTOZ . HOM				PRINT N	ame of SA	MPLER:	Ne	eli	7	1034	05						Γ	D UI C	D DƏNI	л р м	səle
		3 0					SIGNAT	URE of SAI	APLER:	May	Pio.	Me	hard		PA	TE Signe	(D)	140	61		мэт	(X/N) C6 K6C6	56316 50016 (V/V)	mes

			- Charles -	
- winding	Sample Condition	Upon Receipt		5
Face Analytical Client Nor	no: Gar	Pornor	Project #	
Client Na	ne. <u>GG</u>	i u u u		
		Pace Other	WO#:2	610161
Tracking #:			PM: BM	Due Date: 10/12/1
Custody Seal on Cooler/Box Present:	ies 🗌 no Seals i	ntact: Ves	CLIENT: CAP	ower-CCR
Packing Material: Bubble Wrap Bub	bble BagsNone	Other		
Thermometer Used 83	Type of Ice: Wet) Blue None	Samples on ice, coolir	g process has begun
Cooler Temperature 4 °C	Biological Tissue i	s Frozen: Yes No	Date and Initials contents:	of person examining
Temp should be above freezing to 6°C		Comments:	1	
Chain of Custody Present:	Yes INO IN/A	1.		
Chain of Custody Filled Out:	YPS INO IN/A	2.		
Chain of Custody Relinquished:	Yes No N/A	3.		
Sampler Name & Signature on COC:	TYPES INO IN/A	4.		
Samples Arrived within Hold Time:	Yes No N/A	5.		
Short Hold Time Analysis (<72hr):	□Yes ₽No □N/A	6.		
Rush Turn Around Time Requested:	□Yes ZNO □N/A	7.		
Sufficient Volume:	ETes DNo DN/A	8.		
Correct Containers Used:	Yes INO IN/A	9.		
-Pace Containers Used:	Pres Ing In/A			
Containers Intact:		10.		
Filtered volume received for Dissolved tests	Tyes No -EN/A	11.		
Sample Labels match COC:	es 🗆 No 🗆 N/A	12.		
-Includes date/time/ID/Analysis Matrix:	$-\omega$			
All containers needing preservation have been checked		13.		
All containers needing preservation are found to be				
compliance with EPA recommendation.		Initial when	Lot # of added	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	Dives Mo	completed	preservative	
Samples checked for dechlorination:		14.		
Headspace in VOA Vials (>6mm):	TYes No ANA	15.		
Trip Blank Present:	es Ino In/A	16.	,	
Trip Blank Custody Seals Present	Dies DNO DN/A			
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution:			Field Data Required?	Y / N
Person Contacted:	Date/	Time:		
Comments/ Resolution:				
				·
N				
Project Manager Review:			Date:	

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



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

December 19, 2018

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 2612619

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on December 12, 2018. 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc. Rebecca Thornton, Pace Analytical Atlanta





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 2612619

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 Texas Certification #: T104704397-08-TX Virginia Certification #: 460204



SAMPLE SUMMARY

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2612619001	GWC-6	Water	12/11/18 13:25	12/12/18 16:15
2612619002	GWC-8	Water	12/11/18 12:30	12/12/18 16:15
2612619003	GWC-9	Water	12/11/18 11:19	12/12/18 16:15
2612619004	GWC-10	Water	12/11/18 10:15	12/12/18 16:15
2612619005	GWC-20	Water	12/11/18 15:33	12/12/18 16:15
2612619006	GWC-21	Water	12/11/18 14:40	12/12/18 16:15
2612619007	EB-01	Water	12/11/18 15:50	12/12/18 16:15
2612619008	FD-1	Water	12/11/18 00:00	12/12/18 16:15



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:2612619

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2612619001		EPA 300.0	RLC	1
2612619002	GWC-8	EPA 6020B	CSW	1
		EPA 300.0	RLC	1
2612619003	GWC-9	EPA 300.0	RLC	1
2612619004	GWC-10	EPA 6020B	CSW	2
		EPA 300.0	RLC	1
2612619005	GWC-20	EPA 300.0	RLC	2
2612619006	GWC-21	EPA 6020B	CSW	1
2612619007	EB-01	EPA 6020B	CSW	3
		EPA 300.0	RLC	2
2612619008	FD-1	EPA 6020B	CSW	2
		EPA 300.0	RLC	1



ANALYTICAL RESULTS

Project:	Plant Hammond - Huffaker Road									
Pace Project No.:	2612619									
Sample: GWC-6		Lab ID:	2612619001	Collected: 12/11/18 13:25			Received: 12/12/18 16:15		Matrix: Water	
				Report						
Param	eters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 2	8 Days	Analytica	Method: EPA	300.0						
Sulfate		110	ma/L	10.0	0.17	10		12/14/18 12:54	14808-79-8	M6



ANALYTICAL RESULTS

Proj	ect:	Plant Hammond -	Huffaker Road

Pace Project No.: 2612619

Sample:	GWC-8	Lab ID: 2	2612619002	Collected	: 12/11/18	12:30	Received: 12/	12/18 16:15 Ma	atrix: Water	
	Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analvzed	CAS No.	Qual
6020B M	ET ICPMS	Analytical N	Method: EPA 6	020B Prepa	aration Met	nod: EP	A 3005A			·
Calcium		64.3	mg/L	25.0	0.69	50	12/14/18 12:46	12/14/18 18:25	7440-70-2	M6
300.0 IC	Anions 28 Days	Analytical Method: EPA 300.0								
Chloride		2.3	mg/L	0.25	0.024	1		12/14/18 16:30	16887-00-6	


Sample: GWC-9	Lab ID: 2612619003	Collected:	12/11/18 11:19	Received
Pace Project No.:	2612619			
Project:	Plant Hammond - Huffaker Road			

Sample: GWC-9	Lab ID:	2612619003	Collected	1: 12/11/18	11:19	Received: 12/	12/18 16:15 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Sulfate	73.6	mg/L	5.0	0.085	5		12/14/18 16:51	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

Sample: GWC-10	Lab ID: 2	612619004	Collected	d: 12/11/18	8 10:15	Received: 12/	12/18 16:15 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical M	ethod: EPA 6	020B Prep	aration Met	hod: EF	PA 3005A			
Barium	0.18	mg/L	0.010	0.00078	1	12/14/18 12:46	12/14/18 19:11	7440-39-3	
Calcium	49.3	mg/L	25.0	0.69	50	12/14/18 12:46	12/14/18 19:17	7440-70-2	
300.0 IC Anions 28 Days	Analytical M	ethod: EPA 3	800.0						
Chloride	1.9	mg/L	0.25	0.024	1		12/14/18 17:12	16887-00-6	



	Pro	ject:	Plant Hammond -	Huffaker	Road
--	-----	-------	-----------------	----------	------

Pace Project No.: 2612619

Sample: GWC-20	Lab ID:	2612619005	Collected	1: 12/11/18	15:33	Received: 12/	12/18 16:15 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0						
Chloride Sulfate	1.8 41.8	mg/L mg/L	0.25 1.0	0.024 0.017	1 1		12/14/18 17:34 12/14/18 17:34	16887-00-6 14808-79-8	



Project: Plant Hammond - Huffaker Road	
--	--

Pace Project No.: 2612619

Sample: GWC-21	Lab ID:	2612619006	Collecte	d: 12/11/18	3 14:40	Received: 12/	12/18 16:15 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	hod: EP	A 3005A			
Nickel	0.0052J	mg/L	0.010	0.00095	1	12/14/18 12:46	12/14/18 19:22	7440-02-0	



Proje	ect:	Plant Hammond -	Huffaker	Road

Pace Project No.: 2612619

Sample: EB-01	Lab ID:	2612619007	Collecte	d: 12/11/18	15:50	Received: 12/	12/18 16:15 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical	Method: EPA 6	6020B Prep	aration Met	hod: E	PA 3005A	-		-
Barium	ND	mg/L	0.010	0.00078	1	12/14/18 12:46	12/14/18 19:34	7440-39-3	
Calcium	ND	mg/L	0.50	0.014	1	12/14/18 12:46	12/14/18 19:34	7440-70-2	
Nickel	ND	mg/L	0.010	0.00095	1	12/14/18 12:46	12/14/18 19:34	7440-02-0	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0						
Chloride	0.10J	mg/L	0.25	0.024	1		12/14/18 17:55	16887-00-6	В
Sulfate	ND	mg/L	1.0	0.017	1		12/14/18 17:55	14808-79-8	



Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

2612610

Sample: FD-1	Lab ID: 26	612619008	Collecte	d: 12/11/18	8 00:00	Received: 12/	12/18 16:15 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Me	ethod: EPA 6	020B Prep	aration Met	hod: EF	PA 3005A			
Barium	0.18	mg/L	0.010	0.00078	1	12/14/18 12:46	12/14/18 19:39	7440-39-3	
Calcium	48.3	mg/L	25.0	0.69	50	12/14/18 12:46	12/14/18 19:45	7440-70-2	
300.0 IC Anions 28 Days	Analytical Me	ethod: EPA 3	300.0						
Chloride	1.8	mg/L	0.25	0.024	1		12/14/18 19:41	16887-00-6	



QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

2612610 Pace Project No.:

ECLINO	2012019	

QC Batch:	18932		Analysis Method:	EPA 6020B
QC Batch Method:	EPA 30	005A	Analysis Description:	6020B MET
Associated Lab Samp	oles: 2	2612619002, 2612619004, 2612	2619006, 2612619007, 261	2619008

Matrix: Water

METHOD BLANK: 85500 Associated Lab Samples: 2612610002 2612610004 2612610006 2612610007 2612610008

		Blank	Reporting			
Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Barium	mg/L	ND	0.010	0.00078	12/14/18 18:08	
Calcium	mg/L	ND	0.50	0.014	12/14/18 18:08	
lickel	mg/L	ND	0.010	0.00095	12/14/18 18:08	

LABORATORY CONTROL SAMPLE: 85501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	0.97	97	80-120	
Nickel	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 85502 85503												
			MS	MSD								
		2612619002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Barium	mg/L	0.12	0.1	0.1	0.20	0.22	89	100	75-125	5	20	
Calcium	mg/L	64.3	1	1	64.3	65.6	0	130	75-125	2	20	M6
Nickel	mg/L	ND	0.1	0.1	0.095	0.097	95	96	75-125	2	20	

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



QUALITY CONTROL DATA

Project:	Plant Hamm	ond - Huffal	ker Road										
Pace Project No.:	2612619												
QC Batch:	18863			Analys	is Method	: E	PA 300.0						
QC Batch Method:	EPA 300.0			Analys	is Descrip	tion: 3	00.0 IC Anic	ons					
Associated Lab Sar	mples: 261	2619001, 26	612619002, 2	612619003,	, 2612619	004, 26126	619005, 2612	2619007, 3	2612619008	3			
METHOD BLANK:	85072			N	latrix: Wa	ter							
Associated Lab Sar	mples: 261	2619001, 26	612619002, 2	612619003,	, 2612619	004, 26126	619005, 2612	2619007, 2	2612619008	3			
				Blank	R	eporting							
Para	meter		Units	Result	t	Limit	MDL		Analyzed	Qu	alifiers		
Chloride			mg/L	0.	072J	0.25	5 C	.024 12	/14/18 12:12	2			
Sulfate			mg/L		ND	1.0) ().017 12	/14/18 12:12	2			
LABORATORY CO	NTROL SAM	PLE: 8507	3	Spiko			1.09	% Pc					
Para	meter		Units	Conc.	Resu	ılt	% Rec	Limit	s Qi	ualifiers			
Chloride			mg/L	10		10.2	102	9	0-110		-		
Sulfate			mg/L	10		10	100	9	0-110				
MATRIX SPIKE & N	MATRIX SPIK	E DUPLICA	TE: 85074	MS	MSD	85075							
		2	612619001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride		mg/L	2.9	100	100	101	104	99	101	90-110	3	15	
Sulfate		mg/L	110	100	100	199	196	89	86	90-110	1	15	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 Road

Pace Project No.: 2612619

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.

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 Road

Pace Project No.: 2612619

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2612619002	GWC-8	EPA 3005A	18932	EPA 6020B	18957
2612619004	GWC-10	EPA 3005A	18932	EPA 6020B	18957
2612619006	GWC-21	EPA 3005A	18932	EPA 6020B	18957
2612619007	EB-01	EPA 3005A	18932	EPA 6020B	18957
2612619008	FD-1	EPA 3005A	18932	EPA 6020B	18957
2612619001	GWC-6	EPA 300.0	18863		
2612619002	GWC-8	EPA 300.0	18863		
2612619003	GWC-9	EPA 300.0	18863		
2612619004	GWC-10	EPA 300.0	18863		
2612619005	GWC-20	EPA 300.0	18863		
2612619007	EB-01	EPA 300.0	18863		
2612619008	FD-1	EPA 300.0	18863		

~	ce Analytical
Ľ	Pacer

٢ C > こ こ た ひ こ こ ų C CUAIN

مر المراجعة المراجع ال	Samp	le Condition	Upon Receir	ot			
Face Ana	lvtical or	C. E.	1. 70 4		-		
	Client Name: _	OTA-P	ower		Project #		
· · · ·					110# · 2	61 261 9	
Courier: L Fed	Ex UPS USPS Client		Pace Other		WU# · Z	012013	
Custody Seal on (Cooler/Bay Breacht				PM: BM	Due Date:	12/14/18
Custouy Sear on t			s intact: Jyes		CLIENT: GAP	wer-CCR	
Packing Material:	Bubble Wrap Bubble Ba	s PNone	Other				
Thermometer Use	d <u>85</u> T	vpe of Ice: Wet	7 Blue None		Samples on ice, o	ooling processihas beg	jun
Cooler Temperatu	re / · 5 B re freezing to 6°C	iological Tissue	is Frozen: Yes N Comments:	a	contents:		
Chain of Custody F	resent:	Yes DNO DN/A	1.				
Chain of Custody F	illed Out:	Yes INO IN/A	2.			······································	
Chain of Custody F	ielinquished:	Yes No N/A	3.				
Sampler Name & S	ignature on COC:	Yes No NA	4.				
Samples Arrived w	thin Hold Time:	Yes INO IN/A	5.			<u> </u>	
Short Hold Time A	nalysis (<72hr): "C	Yes PNO DN/A	6.				
Rush Turn Around	Time Requested:		7.				
Sufficient Volume:	C		8.				
Correct Containers	Used: Æ		9.				
-Pace Container	ير s Used:						
Containers Intact:			10.		· · · · · · · · · · · · · · · · · · ·		
Filtered volume rec	eived for Dissolved tests	Yes No CHIA	11.				
Sample Labels mat	ch COC:		12.				
-Includes date/ti	 me/ID/Analysis Matrix:	W					
All containers needing	preservation have been checked.		13.				
All containers needing compliance with EPA	preservation are found to be in recommendation.	Yes ONO ON/A					
exceptions: VOA, colifer	m. TOC. O&G. WI-DRO (water)	Yes ENO	Initial when completed		Lot # of added		
Samples checked for	pr dechlorination:		14	+	preservative		• -
Headspace in VOA	Vials (>6mm):		15	┝┼┼──	·····	······	<u>├──</u> ┥
Trip Blank Present	<u> </u>		16	 		·····	
Trip Blank Custody	Seals Present		10.		,	 •	
Pace Trip Blank I of	# (if nurchased):						
		<u></u>	L				
Client Notification	(Resolution:	_			Field Data Require	ed? Y / N	
Person Cont		Date/1	lime:				
Comments/ Heso		<u> </u>					<u> </u>
		<u> </u>				····	<u> </u>
			··· ·····				
							<u> </u>
	•	 					
Deale 14							<u> </u>
Project Manage	r Heview:				_ Date:		
Note: Whenever the	is a discremance effective black of						

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

January 16, 2019

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

RE: Project: Plant Hammond - Huffaker Road Pace Project No.: 2613682

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on January 14, 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 Maria Padilla, Georgia Power Lauren Petty, Southern Company Services, Inc. Rebecca Thornton, Pace Analytical Atlanta





CERTIFICATIONS

Project: Plant Hammond - Huffaker Road Pace Project No.: 2613682

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 Road

Pace Project No.: 2613682

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2613682001	GWC-8	Water	01/11/19 11:37	01/14/19 12:34
2613682002	GWC-10	Water	01/11/19 13:11	01/14/19 12:34



SAMPLE ANALYTE COUNT

Project:Plant Hammond - Huffaker RoadPace Project No.:2613682

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2613682001	GWC-8	EPA 300.0	RLC	1
2613682002	GWC-10	EPA 6020B	CSW	1



Project: Plant Hammond - Huffaker Road	
--	--

Pace Project No.: 2613682

Sample: GWC-8	Lab ID:	2613682001	Collected	d: 01/11/19	9 11:37	Received: 01	/14/19 12:34 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						
Chloride	2.8	mg/L	0.25	0.024	1		01/15/19 22:03	16887-00-6	



Proiect:	Plant Hammond - Huffaker Road

Pace Project No.: 2613682

Sample: GWC-10	Lab ID:	2613682002	Collecte	d: 01/11/19	9 13:11	Received: 01/	14/19 12:34 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	hod: EF	PA 3005A			
Barium	0.17	mg/L	0.010	0.00078	1	01/15/19 10:29	01/15/19 15:33	7440-39-3	



QUALITY CONTROL DATA

Project:	Plant Hamr	nond - Huf	faker Road										
Pace Project No.:	2613682												
QC Batch:	20589			Analys	s Metho	d: E	PA 6020B						
QC Batch Method:	EPA 3005	A		Analys	s Descri	ption: 6	020B MET						
Associated Lab San	nples: 26′	13682002											
METHOD BLANK:	92498			N	latrix: W	ater							
Associated Lab San	nples: 26′	13682002											
Paran	neter		Units	Blank Result	:	Reporting Limit	MDL		Analyzed	Qua	alifiers		
Barium			mg/L		ND	0.010	0.0	0078 01	1/15/19 15:2	21			
LABORATORY CON	NTROL SAM	IPLE: 92	2499										
				Spike	LC	s	LCS	% R	ec				
Paran	neter		Units	Conc.	Res	sult	% Rec	Limi	ts C	alifiers	_		
Barium			mg/L	0.1		0.098	98	8	30-120				
MATRIX SPIKE & M	IATRIX SPIK		ATE: 92500			92501							
				MS	MSD								
			2613682002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	<u> </u>
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Barium		mg/L	0.17	0.1	0.1	1 0.27	0.27	104	4 101	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 Ham	mond - Huff	aker Road										
Pace Project No.:	2613682												
QC Batch:	20597			Analysi	is Method	: E	PA 300.0						
QC Batch Method:	EPA 300.	0		Analysi	is Descrip	tion: 3	00.0 IC Anio	ons					
Associated Lab Sam	nples: 26	13682001											
METHOD BLANK:	92510			N	latrix: Wa	ter							
Associated Lab Sam	nples: 26	13682001											
Param	neter		Units	Blank Result	R	eporting Limit	MDL		Analyzed	Qu	alifiers		
Chloride			mg/L	C).13J	0.25	. (0.024 01	/15/19 21:	:20			
LABORATORY CON	ITROL SAM	1PLE: 92	511										
Param	neter		Units	Spike Conc.	LCS Resu	S Ilt	LCS % Rec	% Re Limi	ec ts	Qualifiers			
Chloride			mg/L	10		9.8	98	9	90-110		-		
MATRIX SPIKE & M	ATRIX SPI	KE DUPLIC	ATE: 92512			92513							
				MS	MSD								
Dava		11-26	2613682001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	Qual
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride		mg/L	2.8	10	10	12.1	12.1	93	3 9	90-110	0	15	

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



QUALIFIERS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2613682

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 - Huffaker RoadPace Project No.:2613682

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2613682002	GWC-10	EPA 3005A	20589	EPA 6020B	20633
2613682001	GWC-8	EPA 300.0	20597		

	1.00
	3
	÷
	B
	A
5	3
1	Ra
6	1
	1

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

Section	A Contraction of the contraction	sction B	Section C					2	
Compar	Ty Georgia Power - Coal Combustion Residuals Re	equired Froject Information: sport To - Join Abraham	Invoice Information: Attention		Г	rage	-	5	٦.
Address	2480 Marver Road	Dov To Ganswriter	Company Name						
	Atlanta, GA 30339	construction of the	Address			Reat	latory Agenc	~	1
Email.	jabraham@southernco.com	rtchase Order # SCS10348606	Pace Quote			0			
Phone.	(404)506-7239 Fax Pr	oject Name Plant Hammond Huffaker	Pace Project Manager betsy.mcdaniel@p	acelabs.com,		Sta	te / Location	H. Santa	18
Reques	ted Due Date: 5 day TAT	oject # CW6591	Pace Profile # 328				GA		
)			Requested Anal	ysis Filtered (Y/N)	-			Sar
	MATRIX	COLLECTED	Preservatives	2 2					100
	SAMPLE ID	DW WT WT WT WT See value codes (G=GRAB C=C (G=GRAB C=C START	Test 1 courtection				(N/J) BL		
# MƏTI	One Character per box. Whe (A-Z, 0-9 /, , -) Aur Crose Sample Ids must be unique Tissue	The Date of the Da	VUPPE LEWP A Conner Methanol HICO HICO HICO HICO HICO HICO HICO HICO	Metals (88) CI			אפנומט ופחטו		
-	GWC-8	WT 6/1/14/10/11:32 1/11/19/11:37 4	1 1 2	7		~	2		-
2	CWC - 10	NT 6 1/11/19 3:06 1/11/19 13.11	1	~			2		A
m									2
4							$\left \right\rangle$		
ŝ									
9									
2									
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						-			
σ									~
10									
11						_			
12									
	ADDITIONAL COMMENTS	RELINQUISHED BY I AFFILIATION DATE	TIME ACCEPTED BY I AFI	ILIATION	DATE TI	ME	SAMPLE (	SNOITIONS	194 A
		Xult Colo At WW	13:15 Martia Munlew		11/11/13	: 15			
		Nallie Marken 1/14/1	a 16:20 Mike Ngun	n/Pace	:01 6/4J	20			
		Milte Notren/pace 1/18/1	4 1234 Churles And	\$1/h1/ta	. 123	1 5.	XE	× >	
Pa	Lin±:2613682	SAMPLER NAME AND SIGN	ATURE	-	-		u		
ge 11 of 12		PRINT Name of SAMPLE SIGNATURE of SAMPLE	R: Grant Watter	DATE Signed: M	NA	TEMP in C	(Y/N) Received o	Custody Sealed (Y/N) Samples Intact	(N/A)
	2613682								

	1. 0	Unon Door	WO# : :	2613682
San	nple Condition	Upon Rece	DM. RM	Due Date: 01/21/19
Face Analytical Client Name	(Alow	er	CLIENT: G	APower-CCR
		/	0222	
Courier: Fed Ex UPS USPS Clier	t Commercial	Pace Other		Optional Proj. Due Date: Proj. Name:
Custody Seal on Cooler/Box Present: Ves	no Seals	intact: E yes	🗌 no	Pioj. Nanc.
	Bags None	Other		
Thermometer land $22$	Type of Ice: Wet	Blue None	Samples	s pn ice, cooling process has begun
	Biological Tissue	is Frozen: Yes	No	and Initials of person examining
Temp should be above freezing to 6°C		Comments:	co	intents:////////////////////////////
Chain of Custody Present:	BYes DNo DN/A	1.		
Chain of Custody Filled Out:	Dres DNO DN/A	2.		
Chain of Custody Relinquished:	Dyes DNO DN/A	3.		
Sampler Name & Signature on COC:	DYES DNO DN/A	4.		
Samples Arrived within Hold Time:		5.		
Short Hold Time Analysis (<72hr):	Yes NA	6.		
Rush Turn Around Time Requested:	DYes DNO DN/A	7.		
Sufficient Volume:	BYes DNo DN/A	8.		
Correct Containers Used:	Yes No N/A	9.		
-Pace Containers Used:	Bres DNO DN/A			
Containers Intact:	QYes No N/A	10.		
Filtered volume received for Dissolved tests	TYes No NA	11.		
Sample Labels match COC:	TYes DNO DN/A	12.		
-Includes date/time/ID/Analysis Matrix:	$\mathcal{W}_{$			
All containers needing preservation have been checked.	Pres INO IN/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	Tes No N/A			
eventions: VOA coliform TOC Q&G WI-DRO (water)	Yes No	Initial when completed	Lot # di preserv	radded vative
Samples checked for dechlorination:		14		
Headspace in VOA Vials ( >6mm):		15		
Trin Blank Present		16		
Trin Blank Custody Seals Present		10.		
Pace Trip Blank Lot # (if purchased):				
	-	1		
Client Notification/ Resolution:		<b></b> .	Field D	ata Required? Y / N
Commente/ Resolution:	Date/	/Time:		
Comments/ Resolution.				
	1.			
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 Page 12 of 12 Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

# Data Validation Reports



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 Numbers 262895, 262896, 262979,
CC:	J. Caprio
	Kristoffer Henderson
From:	Mary Tyler
To:	Whitney Law
Date:	April 24, 2018

# SITE: Plant Hammond-Huffaker Road

# **INTRODUCTION**

This report summarizes the findings of the Stage 2A data validation of seventeen aqueous samples, two field duplicate samples, two equipment blanks and two field blanks, collected 14 March 2018, 15 March 2018 and 16 March 2018, as part of the Plant Hammond-Huffaker Road 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

262980, 262982 and 262983

- Mercury by EPA Method 7470A
- Total Dissolved Solids (TDS) by Standard Method 2540C
- Anions (chloride, fluoride and sulfate) by EPA Method 300.0

# **EXECUTIVE SUMMARY**

The samples were handled, prepared and measured in the same manner under similar prescribed conditions.

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below, 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); National Functional Guidelines for Inorganic Superfund Data Review, August 2014 (OSWER 9355.0-131, EPA 540-R-013-001)
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001)
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania

Laboratory ID	Sample ID
262895001	GWA-1
262896001	GWA-2
262896002	FD-01
262896003	GWC-8
262979001	GWC-20
262979002	GWC-5
262980001	EB-02
262980002	FB-02
262980003	GWC-18
262980004	GWC-6
262982001	GWA-3
262982002	GWA-4

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Sample ID
262982003	GWA-11
262982004	GWC-10
262982005	GWC-22
262982006	GWC-21
262982007	GWC-19
262983001	EB-01
262983002	FB-01
262983003	GWC-23
262983004	FD-02
262983005	GWC-7
262983006	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:

- There were no relinquishing signatures, dates or times for the last sample transfers on the COCs in these laboratory reports. The other sample transfers were appropriately documented, but there were no final sample relinquishing documentations; there were final sample receiving documentations on these COCs.
- 262982 and 262983: There were no receiving times documented for the third sample transfers on both of these COCs.
- 262896 and 262983: There were no times of collection listed on the COCs for the field duplicates, FD-01 and FD-02. The laboratory assigned collection times of 00:00

# 1.0 METALS

The samples were analyzed by EPA methods 3005A/6020B (Mercury 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
- $\otimes$  Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

# 1.1 <u>Overall Assessment</u>

The metals data reported in these packages are considered to be usable for meeting project objectives. The results are considered to be 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 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). Three method blanks were reported (batches 2745, 2814 and 2942). 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). One sample set specific MS/MSD pair was reported, using samples GWC-18. 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 were high and outside the laboratory specified acceptance criteria. Since the sample concentration was greater than four times the spike concentration, no qualifications were applied to the data, based on professional and technical judgment

In addition, two batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

# 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 and SOP specified acceptance criteria.

# 1.6 Equipment Blank

Two equipment blanks were collected with the sample sets, EB-02 and EB-01. Metals were not detected in the equipment blanks above the MDLs, with the following exceptions.

Boron was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) and zinc was detected at a concentration greater than the RL in EB-02. Therefore, the boron concentration in sample GWC-20 and the zinc concentration in sample GWC-6 were U* qualified as not detected at the reported concentrations.

Sample ID	Compound	Laboratory Concentration (mg/L)	Laboratory Flag	Validation Concentration (mg/L)	Validation Qualifier*	Reason Code**
GWC-20	Boron	0.016	J	0.016	U*	BE
GWC-6	Zinc	0.0029	J	0.0029	U*	BE

mg/L- milligram per liter

J-estimated concentration above the adjusted MDL and below the adjusted RL

* Validation qualifiers are defined in Attachment 1 at the end of this report

**Reason codes are defined in Attachment 2 at the end of this report

# 1.7 Field Blank

Two field blanks were collected with the sample sets, FB-02 and FB-01. Metals were not detected in the field blanks above the MDLs, with the following exception.

Copper was detected in FB-01 at an estimated concentration greater than the MDL and less than the RL. Therefore, the estimated copper concentrations in the associated samples were U* qualified as not detected at the reported concentrations.

Sample ID	Compound	Laboratory Concentration (mg/L)	Laboratory Flag	Validation Concentration (mg/L)	Validation Qualifier*	Reason Code**
GWC-23	Copper	0.0016	J	0.0016	U*	BF
FD-02	Copper	0.0014	J	0.0014	U*	BF

mg/L- milligram per liter

J-estimated concentration above the adjusted MDL and below the adjusted  $\ensuremath{\mathsf{RL}}$ 

# 1.8 <u>Field Duplicate</u>

Two field duplicate samples were collected with the sample sets, FD-02 and FD-01. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations < RL) was demonstrated between the field duplicates and the original samples GWC-7 and GWC-8.

# 1.9 <u>Sensitivity</u>

The samples were reported to the MDLs. Elevated nondetect results were reported for calcium in samples GWA-1 and GWA-11; the nondetect calcium results in these two samples were flagged by the laboratory with D3, to indicate that the "sample was diluted due to the presence of high levels of non-target analytes or other matrix interferences".

# 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 flag D3 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 MERCURY

The samples were analyzed for mercury 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 <u>Overall Assessment</u>

The mercury data reported in these packages are considered to be usable for meeting project objectives. The results are considered to be 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 <u>Holding Time</u>

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). Three method blanks were reported (batches 2725, 2820 and 2968). 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 sample set specific MS/MSD pairs were reported, using

samples GWC-20 and GWC-6. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

In addition, one batch MS/MSD pair was reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

# 2.5 <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). Three 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-02 and EB-01. 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-02 and FB-01. Mercury was not detected in the field blanks above the MDL.

# 2.8 <u>Field Duplicate</u>

Two field duplicate samples were collected with the sample sets, FD-02 and FD-01. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations < RL) was demonstrated between the field duplicates and the original samples GWC-7 and GWC-8, respectively.

# 2.9 <u>Sensitivity</u>

The samples were reported to the MDLs. No elevated nondetect results were 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. No discrepancies were identified between the level II reports and the EDDs.

# 3.0 TDS AND ANIONS

The samples were analyzed for TDS by Standard Method 2540C and for anions (chloride, fluoride and sulfate) by EPA 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 Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

# 3.1 Overall Assessment

The TDS and anion data reported in these packages are considered to be usable for meeting project objectives. The results are considered to be 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%.

# 3.2 Holding Times

The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding times for the anion (chloride, fluoride and sulfate) analyses of a water sample are 28 days from sample collection to analysis. The holding times were met for the sample analyses.

# 3.3 <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). Four method blanks were reported for TDS (batches 402761, 403194, 403061 and 402965) and two method blanks were reported for the anion data (batches 2695 and 3105). TDS and the anions were not detected in the method blanks above the MDLs.

# 3.4 <u>Matrix Spike/Matrix Spike Duplicate</u>

One MS/MSD was reported for the anions, using sample GWC-20. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The fluoride recoveries were high, and the sulfate recoveries were low, both outside the laboratory and SOP specified acceptance criteria. Since fluoride was not detected in sample GWC-20, no qualifications were applied to the data. However, the sulfate concentration in sample GWC-20 was J qualified as estimated.

One MS using sample GWC-5 was also reported for the anions. The recovery results were within the laboratory and SOP specified acceptance criteria, with the following exception. The recovery of sulfate was high and outside the laboratory and SOP specified acceptance criteria. Since the sulfate concentration in sample GWC-5 was greater than four times the spike concentration, no qualifications were applied to the data, based on professional and technical judgment.

In addition, a batch MS/MSD pair and an MS were reported for 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 ID	Compound	Laboratory Concentration (mg/L)	Laboratory Flag	Validation Concentration (mg/L)	Validation Qualifier	Reason Code
GWC-20	Sulfate	37.5	M1	37.5	J	M-

No MS/MSD pairs were reported for TDS.

mg/L- milligram per liter

M1- laboratory flag indicating the MS recovery exceeded the QC limits. Batch accepted base on the LCS recovery

# 3.5 <u>Laboratory Duplicate</u>

Three sample set specific laboratory duplicates were reported for TDS, using samples GWC-8, GWC-21 and FB-01. The RPD results were within the laboratory and SOP specified acceptance criteria, with the following exception.

The RPD was high and outside the laboratory and SOP specified acceptance criteria for the laboratory duplicate using sample GWC-8. Therefore, the concentration of TDS in sample GWC-8 was J qualified as estimated.

In addition, five batch laboratory duplicates were reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample ID	Compound	Laboratory Concentration (mg/L)	Laboratory Flag	Validation Concentration (mg/L)	Validation Qualifier	Reason Code
GWC-8	Total Dissolved Solids	263	D6	263	J	LD

mg/L- milligram per liter

D6- laboratory flag indicating the precision between the sample and the sample duplicate exceeded the laboratory control limits

# 3.6 <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). Four LCSs were reported for TDS and two LCSs were reported for the anion data. The recovery results were within the laboratory and SOP specified acceptance criteria.

# 3.7 Equipment Blank

Two equipment blanks were collected with the sample sets, FB-02 and FB-01. TDS and the anions were not detected in the equipment blanks above the MDLs.

# 3.8 Field Blank

Two field blanks were collected with the sample sets, FB-02 and FB-01. TDS and the anions were not detected in the field blanks above the MDLs.

# 3.9 <u>Field Duplicate</u>

Two field duplicate samples were collected with the sample sets, FD-02 and FD-01. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations < RL) was demonstrated between the field duplicates and the original samples GWC-7 and GWC-8, respectively.

# 3.10 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

# 3.11 <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 D6 and M1 flags were not included in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

* * * * *
Plant Hammond-Huffaker Road Site Data Validation 24 April 2018 Page 12

#### 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.
- 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.

Plant Hammond-Huffaker Road Site Data Validation 24 April 2018 Page 13

### ATTACHMENT 2 DATA VALIDATION REASON CODES Assigned by Geosyntec's Data Validation Team per the SOP

Reason Code	Explanation
BE	Equipment blank contamination. The result should be considered
	"not-detected."
BF	Field blank contamination. The result should be considered "not-
	detected."
LD	Laboratory duplicate imprecision.
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

Date:	September	13,	2018
-------	-----------	-----	------

To: Whitney Law

From: Kristoffer Henderson

CC: J. Caprio

Subject: Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 265118 and 265121

## SITE: Plant Hammond – Huffaker Road

#### **INTRODUCTION**

This report summarizes the findings of the Stage 2A data validation of six aqueous samples, one field duplicate sample, one field blank and one equipment blank, collected 15-16 May 2018, as part of the Plant Hammond Huffaker Road 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
- Anions by EPA Method 300.0

## **EXECUTIVE SUMMARY**

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below, 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);

- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
265118001	GWC-10
265118002	FD-01
265118003	GWC-21
265118004	GWC-6
265118005	GWC-8

Laboratory ID	Client ID
265118006	FB-01
265118007	EB-01
265121001	GWC-20
265121002	GWC-18

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:

- Project number 265118: There were no times of collection listed on the COC for the field duplicate, FD-01. The laboratory assigned collection times of 00:00. The relinquishing signature, data and time were missing for the third sample transfer.
- Project number 265121: The relinquishing signature, data and time were missing for the second sample transfer.

Laboratory report 265118 was revised on June 5, 2018 to add barium results for sample GWC-10.

## 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 Deliverables Review

#### 1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

#### 1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 1.3 <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 6305). 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-10. 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 were high and outside the laboratory and SOP specified acceptance criteria. Since the calcium concentration in sample GWC-10 was greater than four times the spike 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

One equipment blank was collected with the sample sets, EB-01. Metals were not detected in the equipment blank above the MDLs, with the following exception.

Calcium was detected in EB-01 at an estimated concentration greater than the MDL and less than the reporting limit (RL). Since calcium was detected at concentrations greater than five times the equipment blank concentration in the associated samples, no qualifications were applied to the data.

## 1.7 <u>Field Blank</u>

One field blank was collected with the sample sets, FB-01. Metals were not detected in the field blank above the MDLs.

## 1.8 <u>Field Duplicate</u>

One field duplicate sample was collected with the sample sets, FD-01. Acceptable precision  $(\text{RPD} \le 20\% \text{ or the difference between the concentrations} < \text{RL})$  was demonstrated between the field duplicates and the original sample GWC-10.

## 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 flag M6 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.

## 2.0 WET CHEMISTRY

The samples were analyzed for anions by EPA method 300.0.

DVR Huffaker

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
- ✓ 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 this analysis, for this dataset is 100%.

## 2.2 <u>Holding Times</u>

The holding time for the anion analysis of a water sample is 28 days from sample 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 (batch 6298). The wet chemistry parameters were not detected in the method blank 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, using sample

GWC-10. 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. Therefore, the concentrations of sulfate in the associated samples were J qualified as estimated.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
GWC-10	Sulfate	29.1	M1	29.1	J	М-
FD-01	Sulfate	29.1	NA	29.1	J	M-
GWC-20	Sulfate	41.0	NA	41.0	J	M-

mg/L- milligram per liter

M1-laboratory flag indicating matrix spike recovery exceeded QC limits. Batch accepted based on LCS recovery 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

#### 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 results were within the laboratory and SOP specified acceptance criteria.

#### 2.6 Equipment Blank

One equipment blank was collected with the sample sets, EB-01. Metals were not detected in the equipment blank above the MDLs, with the following exception.

Chloride was detected at an estimated concentration greater than the MDL and less than the RL. Since chloride was detected at concentrations greater than five times the equipment blank contamination, no qualifications were applied to the data.

## 2.7 Field Blank

One field blank was collected with the sample sets, FB-01. The anions were not detected in the field blank above the MDLs, with the following exception.

Chloride was detected at an estimated concentration greater than the MDL and less than the RL. Since chloride was detected at concentrations greater than five times the field blank concentration, no qualifications were applied to the data.

## 2.8 <u>Field Duplicate</u>

One field duplicate sample was collected with the sample sets, FD-01. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample GWC-10.

## 2.9 <u>Sensitivity</u>

The samples were reported to the MDLs. No elevated nondetect results were 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. 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 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

Reason Code	Explanation
BL	Laboratory 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.



180A Market Place Boulevard Knoxville, TN 37922 PH 865.330.0037 www.geosyntec.com

# Memorandum

Date:	January 23,	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 2610158, 2610159, 2610161, 2610162, 2610208, 2610209 and 2610212

#### SITE: Plant Hammond – Huffaker Road

#### **INTRODUCTION**

This report summarizes the findings of the Stage 2A data validation of seventeen aqueous samples, one field duplicate sample and two field blanks, collected 4-5 October 2018, as part of the Plant Hammond Huffaker Road 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
- Mercury by EPA Method 7470A
- Anions by EPA Method 300.0
- 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 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);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

Laboratory ID	Client ID
2610158001	GWA-4
2610158002	GWA-1
2610158003	FD-04
2610158004	GWC-7
2610158005	GWC-8
2610159001	GWA-2
2610159002	GWC-5
2610159003	GWC-6
2610161001	FB-04
2610162001	GWA-3

The following samples were analyzed and reported in the laboratory reports:

Laboratory ID	Client ID
2610162002	GWA-11
2610162003	GWC-10
2610162004	GWC-22
2610162005	GWC-21
2610162006	GWC-19
2610208001	GWC-18
2610208002	GWC-20
2610209001	GWC-23
2610209002	FB-05
2610212001	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 but did not result in qualification of the data:

- 2610208: The collection time logged, 1000, for sample GWC-20 did not match the collection time listed on the COC, 1105.
- 2610209: The relinquishing signature, date and time were missing for the second sample transfer.
- 2610208 and 2610212: The relinquishing signature, date and time were missing for the third sample transfer.
- 2610158, 2610159, 2610161 and 2610162: The relinquishing signature, date and time were missing for the fourth sample transfer.
- 2610158: There were no time of collection listed on the COC for the field duplicate, FD-04. The laboratory assigned a collection time of 00:00.

#### 1.0 METALS

The samples were analyzed by EPA methods 3005A/6020B (Mercury 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
- $\otimes$  Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

#### 1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

#### 1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

## 1.3 <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 15013, 15051 and 15129). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exceptions.

Zinc was detected in the method blanks in batches 15051 and 15129 at estimated concentrations greater than the MDL and less than the reporting limit (RL). Therefore, the zinc concentrations less than five times the method blank concentrations in the associated samples were U* qualified as not detected at the reported concentrations.

Sample	ANALYTE	Laboratory Result	Laboratory Flag	Validation Result	Validation Oualifier*	Reason Code**
		(mg/L)		(mg/L)		
GWA-2	Zinc	0.0041	JB	0.0041	U*	BL
GWC-5	Zinc	0.0028	JB	0.0028	U*	BL
GWC-6	Zinc	0.0039	JB	0.0039	U*	BL
FB-04	Zinc	0.0042	JB	0.0042	U*	BL
GWA-3	Zinc	0.0043	JB	0.0043	U*	BL
GWA-11	Zinc	0.0046	JB	0.0046	U*	BL
GWC-10	Zinc	0.0033	JB	0.0033	U*	BL
GWC-22	Zinc	0.0030	JB	0.0030	U*	BL
GWC-21	Zinc	0.0077	JB	0.0077	U*	BL
GWC-19	Zinc	0.013	В	0.013	U*	BL
GWC-18	Zinc	0.0029	JB	0.0029	U*	BL
GWC-23	Zinc	0.0048	JB	0.0048	U*	BL
FB-05	Zinc	0.010	В	0.010	U*	BL
GWC-9	Zinc	0.0044	JB	0.0044	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

B-laboratory flag defined as 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-2 and GWC-18. 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 were high and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pairs. However, based on the difference between the sample and spike concentrations and 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 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 and SOP specified acceptance criteria.

#### 1.6 Equipment Blank

One equipment blank was collected with the sample sets and reported in laboratory report 2610116, EB-02. Metals were not detected in the equipment blank above the MDLs, with the following exception.

Zinc was detected in EB-02 at an estimated concentration greater than the MDL and less than the R). Since the zinc concentration in EB-02 was U* qualified as not detected based on field blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

#### 1.7 Field Blank

Two field blanks were collected with the sample sets, FB-04 and FB-05. Metals were not detected in the field blanks above the MDLs, with the following exception.

Zinc was detected in FB-04 at estimated concentrations greater than the MDL and less than the RL. Since the zinc concentration in FB-04 was U* qualified as not detected due to method blank contamination, no qualifications were applied to the data.

Calcium was detected at an estimated concentration greater than the MDL and less than the RL and zinc was detected at the RL (0.010 mg/L) in FB-05. Since calcium was detected at concentrations greater than five times the field blank concentration and the zinc concentration in FB-05 was U* qualified as not detected due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

#### 1.8 <u>Field Duplicate</u>

One field duplicate sample was collected with the sample sets, FD-04. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample GWC-7.

#### 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 D3, M6 and B used in the level II reports were not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report when the sample was used for laboratory batch QC (i.e. if the sample 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 for mercury 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 this dataset is 100%.

## 2.2 <u>Holding Time</u>

The holding time for mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

## 2.3 <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 14995, 15032 and 15185). 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). Three batch MS/MSD pairs were reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

## 2.5 <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). Three LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

## 2.6 Equipment Blank

One equipment blank was collected with the sample sets and reported in laboratory report 2610116, EB-02. Mercury was not detected in the equipment blank above the MDL.

## 2.7 Field Blank

Two field blanks were collected with the sample sets, FB-04 and FB-05. Mercury was not detected in the field blanks above the MDL.

#### 2.8 <u>Field Duplicate</u>

2.9 One field duplicate sample was collected with the sample sets, FD-04. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations  $\leq$  RL) was demonstrated between the field duplicate and the original sample GWC-7. <u>Sensitivity</u>

The samples were reported to the MDL. No elevated nondetect results were reported.

#### 2.10 Electronic Data Deliverables 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. No discrepancies were identified between the level II reports and the EDDs.

#### **3.0 WET CHEMISTRY**

The samples were analyzed for anions 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 this dataset is 100%.

## 3.2 <u>Holding Times</u>

The holding time for the anion analysis (chloride, fluoride and sulfate) of a water sample is 28 days from sample collection to analysis. The holding time for 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>

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 15084 and 15085). The anions were not detected in the method blanks above the MDLs, with the following exception.

Chloride was detected in the method blank in batch 15084 at an estimated concentration greater than the MDL and less than the RL. Therefore, the chloride concentration less than five times the method blank concentration was U* qualified as not detected at the reported concentration.

Sample	ANALYTE	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
FB-04	Chloride	0.17	JB	0.17	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

B-laboratory flag defined as analyte was detected in the associated method blank

## 3.4 <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 sample set specific MS/MSD pairs were reported for anions using samples GWA-4 and GWC-18, and one sample set specific MS was reported, using sample GWC-20. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of sulfate in the MS/MSD pair using sample GWC-18 were low and outside the laboratory and SOP specified acceptance criteria. However, based on the difference between the sample and spike concentrations and professional and technical judgment, no qualifications were 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 each analysis and batch as appropriate. The recovery results were within the laboratory and SOP specified acceptance criteria.

#### 3.6 <u>Laboratory Duplicate</u>

One sample set specific laboratory duplicate was reported for TDS, using sample GWA-11. The RPD result was within the laboratory and SOP specified acceptance criteria.

Five batch laboratory duplicates were also reported for TDS. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 3.7 Equipment Blank

One equipment blank was collected with the sample sets and reported in laboratory report 2610116, EB-02. The wet chemistry parameters were not detected in the equipment blank above the MDLs, with the following exception.

Chloride and TDS were detected in EB-02 at estimated concentrations greater than the MDLs and less than the RLs. Since the chloride concentration was U* qualified as not detected due to method blank contamination and the TDS concentration was U* qualified due to field blank contamination (laboratory report 2610116), 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-04 and FB-05. The wet chemistry parameters were not detected in the field blanks above the MDLs, with the following exceptions.

Chloride was detected in FB-04 at an estimated concentration greater than the MDL and less than the RL. Since the chloride concentration in FB-04 was U* qualified as not detected due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

Chloride was detected at an estimated concentration greater than the MDL and less than the RL and TDS (31.0 mg/L) was detected above the RL in FB-05. Since chloride and TDS were detected at concentrations greater than five times the field blank concentrations, no qualifications were applied to the data.

## 3.9 <u>Field Duplicate</u>

One field duplicate sample was collected with the sample sets, FD-04. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations < RL) was demonstrated between the field duplicate and the original sample GWC-7, with the following exception.

The RPD of sulfate was greater than 20%. Therefore, the sulfate concentrations were J qualified as estimated in the field duplicate pair.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	RPD	Validation Result (mg/L)	Validation Qualifier	Reason Code
GWC-7	Sulfate	167	NA	23	167	J	FD
FD-04	Sulfate	133	NA		133	J	FD

mg/L-milligrams per liter NA-not applicable

#### 3.10 Sensitivity

The samples were reported to the MDLs. No elevated nondetect results were reported.

## 3.11 <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 flags M1 and B used in the level II reports were not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if 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."
FD	Field duplicate imprecision.



180A Market Place Boulevard Knoxville, TN 37922 PH 865.330.0037 www.geosyntec.com

# Memorandum

Date:	December 20, 2018			
To:	Whitney Law			

Kristoffer Henderson From:

CC: J. Caprio

Stage 2A Data Validations - Level II Data Deliverable - Pace Subject: Analytical Services, LLC Project Number 2612619

#### SITE: Plant Hammond – Huffaker Road

#### **INTRODUCTION**

This report summarizes the findings of the Stage 2A data validation of six aqueous samples, one field duplicate sample and one equipment blank, collected 11 December 2018, as part of the Plant Hammond Huffaker Road on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Barium, Calcium and Nickel by EPA Methods 3005A/6020B
- Chloride and Sulfate by EPA Method 300.0

#### **EXECUTIVE SUMMARY**

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below, 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 report, 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);

- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following samples were analyzed and reported in the laboratory report:

Laboratory ID	Client ID
2612619001	GWC-6
2612619002	GWC-8
2612619003	GWC-9
2612619004	GWC-10

Laboratory ID	Client ID
2612619005	GWC-20
2612619006	GWC-21
2612619007	EB-01
2612619008	FD-1

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) form but did not result in qualification of the data:

- The relinquishing signature, date and time were missing for the fourth sample transfer.
- There was no time of collection listed on the COC for the field duplicate, FD-1. The laboratory assigned a collection time of 00:00.
- Incorrect error corrections were observed on the COC instead of the proper procedure of a single strike through, correction, and initials and date of person making the correction.
- Sulfate and nickel were requested on the COC for FD-1 but the analyses were canceled by the client and sulfate and nickel were not reported for FD-1.

## 1.0 BARIUM, CALCIUM AND NICKEL

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 Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

#### 1.1 Overall Assessment

The barium, calcium and nickel 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 this dataset is 100%.

#### 1.2 <u>Holding Time</u>

The holding time for the barium, calcium and nickel 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 18932). Barium, calcium and nickel 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 MS recovery was low and the MSD recovery was high for calcium, both outside the laboratory specified acceptance criteria. However, based on the difference between the sample and spike concentrations and professional and technical judgment, no qualifications were 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). One 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 set, EB-01. Barium, calcium and nickel were not detected in the equipment blank above the MDLs.

## 1.7 <u>Field Duplicate</u>

One field duplicate sample was collected with the sample set and reported for barium and calcium, FD-1. Acceptable precision [RPD  $\leq 20\%$  or the difference between the concentrations < reporting limit (RL)] was demonstrated between the field duplicate and the original sample GWC-10.

## 1.8 <u>Sensitivity</u>

The samples were reported to the MDLs. Elevated nondetect results were not reported.

## 1.9 <u>Electronic Data Deliverables (EDD) 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 laboratory flag M6 used in the level II report were not included in the EDD. Also, barium and nickel results were included for sample GWC-8 in the EDD that were not requested on the COC or reported in the laboratory report. No other discrepancies were identified between the level II report and the EDD.

## 2.0 CHLORIDE AND SULFATE

The samples were analyzed for chloride and sulfate by EPA 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

- $\otimes$  Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

#### 2.1 Overall Assessment

The chloride and sulfate 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 these analyses, for this dataset is 100%.

#### 2.2 <u>Holding Times</u>

The holding time for the chloride and sulfate analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

#### 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 chloride and sulfate (batch 18863).

Sulfate was not detected in the method blank above the MDL. However, chloride was detected in the method blank at an estimated concentration greater than the MDL and less than the RL. Therefore, the chloride concentration less than five times the method blank concentration was U* qualified as not detected at the reported concentration.

Sample	ANALYTE	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
EB-01	Chloride	0.10	JB	0.10	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

B-laboratory flag defined as 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

## 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 chloride and sulfate using sample GWC-6. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The MS/MSD recoveries of sulfate were low and outside the laboratory and SOP specified acceptance criteria. Therefore, the sulfate concentration in the associated samples were J qualified as estimated.

Sample	ANALYTE	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Validation Qualifier
GWC-6	Sulfate	110	M6	110	J	M+
GWC-9	Sulfate	73.6	NA	73.6	J	M+
GWC-20	Sulfate	41.8	NA	41.8	J	M+

mg/L- milligram per liter NA-not applicable

## 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 and SOP specified acceptance criteria.

## 2.6 Equipment Blank

One equipment blank was collected with the sample set, EB-01. Chloride and sulfate were not detected in the equipment blank above the MDLs, with the following exception.

Chloride was detected in EB-01 at an estimated concentration greater than the MDL and less than the RL. Since the chloride concentration in the equipment blank was U* qualified as not detected due to method blank contamination and chloride was detected at concentrations greater than five times the equipment blank concentration in the associated samples, no additional qualifications were applied to the data.

## 2.7 <u>Field Duplicate</u>

One field duplicate sample was collected with the sample set and reported for chloride, FD-1. Acceptable precision (RPD  $\leq 20\%$  or the difference between the concentrations  $\leq$  RL) was demonstrated between the field duplicate and the original sample GWC-10.

## 2.8 <u>Sensitivity</u>

The samples were reported to the MDLs. No elevated nondetect results were reported.

## 2.9 <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 laboratory flags M6 and B used in the level II report were not included in the EDD. Also, a chloride result was included for sample GWC-6 in the EDD that was not requested on the COC or reported in the laboratory report. 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 The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit.
- 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 data are unusable. The sample results are rejected due to serious analytical deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.
- UR The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present 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."
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.



180A Market Place Boulevard Knoxville, TN 37922 PH 865.330.0037 www.geosyntec.com

# Memorandum

Date:	January 17, 2019
To:	Whitney Law

Kristoffer Henderson From:

CC: J. Caprio

Stage 2A Data Validations - Level II Data Deliverable - Pace Subject: Analytical Services, LLC Project Number 2613682

#### SITE: Plant Hammond – Huffaker Road

#### **INTRODUCTION**

This report summarizes the findings of the Stage 2A data validation of two aqueous samples collected 11 January 2019, as part of the Plant Hammond Huffaker Road on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Barium by EPA Methods 3005A/6020B •
- Chloride by EPA Method 300.0

#### **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 report, 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);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,

Plant Hammond Huffaker Site Data Validation 17 January 2019 Page 2

• Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following samples were analyzed and reported in the laboratory report:

Laboratory ID	Client ID	Laboratory ID	Client ID
2613682001	GWC-8	2613682002	GWC-10

The samples were received within 0-6°C. No sample preservation issues were noted by the laboratory.

#### 1.0 BARIUM

The samples were analyzed for barium 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 Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

## 1.1 Overall Assessment

The barium 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 this dataset is 100%.

Plant Hammond Huffaker Site Data Validation 17 January 2019 Page 3

## 1.2 <u>Holding Time</u>

The holding time for the barium 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 20589). Barium was not detected in the method blank above the method detection limit (MDL).

## 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-10. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria.

## 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). One LCS was reported. The recovery result was within the laboratory and SOP specified acceptance criteria.

## 1.6 Equipment Blank

One equipment blank was collected with the sample set and reported in laboratory report 2612619, EB-01. Barium were not detected in the equipment blank above the MDL.

## 1.7 <u>Field Duplicate</u>

Field duplicates were not collected with the sample set.

## 1.8 <u>Sensitivity</u>

The samples were reported to the MDL. Elevated nondetect results were not reported.

## 1.9 <u>Electronic Data Deliverable (EDD) 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. Arsenic and
molybdenum results were included for sample GWC-10 in the EDD that were not requested on the COC or reported in the laboratory report. No other discrepancies were identified between the level II report and the EDD.

# 2.0 CHLORIDE

The samples were analyzed for chloride by EPA 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
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverable Review

# 2.1 <u>Overall Assessment</u>

The chloride 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 these analyses, for this dataset is 100%.

# 2.2 <u>Holding Times</u>

The holding time for the chloride 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). One method blank was reported (batch 20597).

Chloride was detected in the method blank at an estimated concentration greater than the MDL and less than the reporting limit (RL). Since the chloride concentration in the associated sample was 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 sample set specific MS/MSD pair was reported for chloride using sample GWC-8. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

# 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 Equipment Blank

One equipment blank was collected with the sample set, EB-01 and reported in laboratory report 2612619.

Chloride was detected in EB-01 at an estimated concentration greater than the MDL and less than the RL. Since the chloride concentration in the equipment blank was U* qualified as not detected due to method blank contamination and chloride was detected at concentrations greater than five times the equipment blank concentration in the associated sample, no additional qualifications were applied to the data.

# 2.7 <u>Field Duplicate</u>

Field duplicates were not collected with the sample set.

# 2.8 <u>Sensitivity</u>

The samples were reported to the MDL. No elevated nondetect results were reported.

## 2.9 <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 per the SOP

### DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit.
- 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 data are unusable. The sample results are rejected due to serious analytical deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.
- UR The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present 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."
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.

APPENDIX B2 Field Sampling Reports Date: 2018-03-14 18:32:10

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude	Dan Gibbs Geosyntec GP-Hammond-Huffaker Huffaker Rd Landfill 0° 0' 0" 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene .250 in 39 ft
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWA-1	Final Pumping Rate	130 mL/min
Well diameter	2 in	Total System Volume	0.4664565 L
Well Total Depth	40.07 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to water	10.59 IT	lotal volume Pumped	6.5 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	ı		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	18:05:33	2699.99	13.31	6.72	161.32	5.26	10.81	1.80	28.13
Last 5	18:10:33	2999.98	13.40	6.70	160.83	5.14	10.82	1.63	23.04
Last 5	18:15:33	3299.97	13.40	6.68	160.08	4.96	10.82	1.51	18.93
Last 5	18:20:33	3599.96	13.31	6.68	158.50	4.74	10.83	1.49	15.10
Last 5	18:25:33	3899.95	13.22	6.66	156.95			1.32	11.66
Variance 0			0.00	-0.02	-0.76			-0.12	-4.10
Variance 1			-0.09	0.00	-1.58			-0.01	-3.84
Variance 2			-0.09	-0.02	-1.55			-0.17	-3.43

Notes

Date: 2018-03-14 17:01:50

	Pump Information:	
Noelia Muskus/Stephen Randall Geosyntec GP-Hammond-Huffaker Huffaker Rd Landfill	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis Polyethylene 0.250 in 21 11 ft
0° 0' 0"		2
0° 0' 0"		
501336		
LaMotte 2020we	Pump placement from TOC	ft
	Pumping Information:	
GWA-2	Final Pumping Rate	160 mL/min
2.0 in	Total System Volume	0.2937692 L
26.11 ft	Calculated Sample Rate	300 sec
10 ft	Stabilization Drawdown	3.6 in
6.05 ft	Total Volume Pumped	6.8 L
	Noelia Muskus/Stephen Randall Geosyntec GP-Hammond-Huffaker Huffaker Rd Landfill 0° 0' 0" 0° 0' 0" 501336 LaMotte 2020we GWA-2 2.0 in 26.11 ft 10 ft 6.05 ft	Pump Information:Noelia Muskus/Stephen RandallPump Model/TypeGeosyntecTubing TypeGP-Hammond-HuffakerTubing DiameterHuffaker Rd LandfillTubing Length0° 0' 0"0° 0' 0"501336LaMotte 2020weLaMotte 2020wePump placement from TOCGWA-2Final Pumping Rate2.0 inTotal System Volume26.11 ftCalculated Sample Rate10 ftStabilization Drawdown6.05 ftTotal Volume Pumped

Low-Flow Sa	ampling Stabiliz	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	G/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	16:36:57	1200.01	14.68	6.70	377.45	1.70	6.28	0.19	32.90
Last 5	16:41:57	1500.00	14.85	6.73	376.19	1.28	6.28	0.16	28.70
Last 5	16:46:58	1801.00	14.80	6.74	376.55	0.84	6.28	0.15	25.83
Last 5	16:51:58	2100.99	14.91	6.75	375.87	1.22	6.30	0.14	23.05
Last 5	16:56:58	2400.99	14.95	6.76	375.73	1.14	6.29	0.13	20.53
Variance 0			-0.05	0.00	0.36			-0.01	-2.87
Variance 1			0.11	0.02	-0.68			-0.01	-2.78
Variance 2			0.04	0.00	-0.14			-0.01	-2.52

Notes

Date: 2018-03-15 10:25:54

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond-Huffaker	Tubing Diameter	.250 in
Site Name	Huffaker Rd Landfill	Tubing Length	20 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	GWA-3	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.2830546 L
Well Total Depth	21.60 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	4.62 ft	Total Volume Pumped	7.5 L

Low-Flow Sa	ampling Stabiliz	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	09:55:16	1500.01	13.55	6.92	837.00	6.18	4.97	1.19	87.69
Last 5	10:00:16	1800.01	13.67	6.91	834.34	5.56	4.97	1.11	86.61
Last 5	10:05:16	2100.00	13.71	6.90	833.85	4.74	4.97	1.02	85.70
Last 5	10:10:16	2400.00	13.84	6.89	831.65	4.88	4.97	0.93	84.54
Last 5	10:15:16	2700.01	13.92	6.88	832.97	4.74	4.97	0.88	83.58
Variance 0			0.04	-0.01	-0.49			-0.09	-0.91
Variance 1			0.12	-0.02	-2.20			-0.09	-1.16
Variance 2			0.08	-0.01	1.32			-0.05	-0.95

Notes

Grab Samples GWA-3 3 sample Date: 2018-03-15 11:20:31

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond-Huffaker	Tubing Diameter	.250 in
Site Name	Huffaker Rd Landfill	Tubing Length	20 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	GWA-4	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.2830546 L
Well Total Depth	21.76 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	8.65 ft	Total Volume Pumped	4.5 L

Low-Flow Sa	ampling Stabiliz	zation Summary	y						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cm Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	ı		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:58:23	300.05	12.53	7.13	611.58	7.82	8.91	3.04	76.52
Last 5	11:03:23	600.04	12.77	7.12	608.32	6.63	8.93	2.88	78.50
Last 5	11:08:23	900.04	12.89	7.12	606.60	4.46	8.95	2.83	79.28
Last 5	11:13:23	1200.04	13.08	7.11	605.66	4.30	8.96	2.79	79.34
Last 5	11:18:23	1500.03	13.14	7.11	607.20	3.79	8.96	2.72	79.47
Variance 0			0.13	-0.00	-1.72			-0.06	0.78
Variance 1			0.18	-0.00	-0.94			-0.04	0.06
Variance 2			0.06	-0.01	1.53			-0.07	0.13

Notes

Date: 2018-03-15 12:42:47

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond-Huffaker	Tubing Diameter	.250 in
Site Name	Huffaker Rd Landfill	Tubing Length	36 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	GWA-11	Final Pumping Rate	130 mL/min
Well diameter	2 in	Total System Volume	0.4374984 L
Well Total Depth	36.45 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	15.67 ft	Total Volume Pumped	3.25 L

Low-Flow Sa	mpling 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	12:12:04	300.06	14.62	6.52	202.06	3.68	15.91	0.42	52.25
Last 5	12:17:04	600.08	15.02	6.46	200.91	3.26	15.90	0.39	42.33
Last 5	12:22:04	900.06	15.16	6.46	197.08	3.02	15.91	0.28	35.35
Last 5	12:27:04	1200.02	15.21	6.48	197.27	2.95	15.91	0.28	29.90
Last 5									
Variance 0			0.40	-0.07	-1.15			-0.03	-9.92
Variance 1			0.15	0.01	-3.84			-0.11	-6.98
Variance 2			0.05	0.02	0.19			0.00	-5.44

Notes

Date: 2018-03-16 12:12:03

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond-Huffaker	Tubing Diameter	.250 in
Site Name	Huffaker Rd Landfill	Tubing Length	20 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-5	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.2830546 L
Well Total Depth	21.72 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	4.45 ft	Total Volume Pumped	0 L

Low-Flow Sa	ampling Stabiliz	zation Summar	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	11:49:49	1217.08	15.56	6.77	646.20	5.27	4.55	0.15	15.70
Last 5	11:54:49	1517.05	15.52	6.75	647.33	5.16	4.55	0.13	12.75
Last 5	11:59:49	1817.06	15.62	6.74	647.31	4.76	4.55	0.13	9.89
Last 5	12:04:49	2117.06	15.61	6.73	647.84	3.06	4.55	0.12	6.65
Last 5	12:09:49	2417.05	15.57	6.72	647.66	4.01	4.55	0.12	3.87
Variance 0			0.10	-0.01	-0.02			-0.00	-2.86
Variance 1			-0.01	-0.01	0.53			-0.01	-3.25
Variance 2			-0.04	-0.01	-0.18			-0.00	-2.78

Notes

Date: 2018-03-16 12:05:35

Project Information:		Pump Information:	
Operator Name	Noelia Muskus/Stephen Randall	Pump Model/Type	Alexis
Company Name	Geosyntec	Tubing Type	Polyethylene
Project Name	GP-Hammond-Huffaker	Tubing Diameter	0.250 in
Site Name	Huffaker Rd Landfill	Tubing Length	38.09 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
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	2.0 in	Total System Volume	0.4576725 L
Well Total Depth	43.09 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	14.82 ft	Total Volume Pumped	7.5 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	11:42:34	912.02	17.26	6.80	493.28	10.69	14.94	0.96	32.72
Last 5	11:47:34	1212.01	17.22	6.81	485.07	8.46	14.94	1.00	28.79
Last 5	11:52:34	1512.00	17.27	6.80	475.75	4.64	14.93	0.93	25.13
Last 5	11:57:34	1812.00	17.33	6.84	463.14	2.67	14.93	1.12	21.95
Last 5	12:02:36	2113.99	17.31	6.80	469.41	2.74	14.93	0.65	18.87
Variance 0			0.05	-0.00	-9.32			-0.07	-3.65
Variance 1			0.06	0.04	-12.61			0.19	-3.18
Variance 2			-0.02	-0.04	6.27			-0.47	-3.08

Notes

Date: 2018-03-15 16:50:11

	Pump Information:	
Noelia Muskus/Stephen Randall Geosyntec GP-Hammond-Huffaker Huffaker Rd Landfill 0° 0' 0''	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis Polyethylene 0.250 in 27.29 ft
0° 0' 0"		
501336		
LaMotte 2020we	Pump placement from TOC	ft
	Pumping Information:	
GWC-7	Final Pumping Rate	100 mL/min
2.0 in	Total System Volume	0.3534231 L
32.29 ft	Calculated Sample Rate	300 sec
10 ft	Stabilization Drawdown	3.6 in
13.65 ft	Total Volume Pumped	12 L
	Noelia Muskus/Stephen Randall Geosyntec GP-Hammond-Huffaker Huffaker Rd Landfill 0° 0' 0" 0° 0' 0" 501336 LaMotte 2020we GWC-7 2.0 in 32.29 ft 10 ft 13.65 ft	Pump Information: Pump Information: Pump Model/Type Tubing Type GP-Hammond-Huffaker Huffaker Rd Landfill 0° 0' 0" 0° 0' 0" 501336 LaMotte 2020we Pump placement from TOC Pumping Information: GWC-7 50 in 32.29 ft 10 ft 13.65 ft Calculated Sample Rate 10 ft 13.65 ft Total Volume Pumped

Low-Flow Sa	ampling Stabiliz	zation Summary	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	16:28:03	5103.91	17.13	6.12	409.83	7.05	13.86	0.15	64.37
Last 5	16:33:05	5405.91	16.96	6.11	399.20	6.14	13.85	0.15	63.41
Last 5	16:38:16	5716.90	16.85	6.09	396.80	4.46	13.85	0.12	62.30
Last 5	16:43:16	6016.89	16.82	6.07	397.10	4.20	13.86	0.11	61.54
Last 5	16:48:16	6316.89	16.85	6.05	405.53	3.36	13.86	0.12	60.80
Variance 0			-0.11	-0.01	-2.40			-0.03	-1.11
Variance 1			-0.03	-0.02	0.31			-0.01	-0.76
Variance 2			0.03	-0.03	8.42			0.00	-0.74

Notes

Date: 2018-03-14 19:29:18

Project Information:		Pump Information:	
Operator Name	Noelia Muskus/Stephen Randall	Pump Model/Type	Alexis
Company Name	Geosyntec	Tubing Type	Polyethylene
Project Name	GP-Hammond-Huffaker	Tubing Diameter	0.250 in
Site Name	Huffaker Rd Landfill	Tubing Length	22.62 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-8	Final Pumping Rate	170 mL/min
Well diameter	2 in	Total System Volume	0.3083448 L
Well Total Depth	27.62 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	10.37 ft	Total Volume Pumped	11.85 L

Low-Flow S	ampling Stabili:	zation Summary	/						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cm Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	ı		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	19:00:15	3904.95	14.26	7.30	427.33	5.88	11.88	1.15	16.00
Last 5	19:05:15	4204.95	14.29	7.27	420.11	5.02	11.88	0.63	15.78
Last 5	19:10:17	4506.94	14.19	7.28	420.74	4.52	11.88	1.18	15.36
Last 5	19:15:17	4806.93	14.12	7.28	412.88	4.54	11.88	0.92	15.01
Last 5	19:20:17	5106.93	14.26	7.28	401.86	4.16	11.88	1.58	14.17
Variance 0			-0.10	0.01	0.63			0.56	-0.42
Variance 1			-0.07	0.00	-7.85			-0.26	-0.35
Variance 2			0.14	0.00	-11.02			0.65	-0.84

Notes

Date: 2018-03-15 18:23:05

Project Information:		Pump Information:	
Operator Name	Noelia Muskus/Stephen Randall	Pump Model/Type	Alexis
Company Name	Geosyntec	Tubing Type	Polyethylene
Project Name	GP-Hammond-Huffaker	Tubing Diameter	0.250 in
Site Name	Huffaker Rd Landfill	Tubing Length	47.50 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-9	Final Pumping Rate	200 mL/min
Well diameter	2.0 in	Total System Volume	0.5485048 L
Well Total Depth	52.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.68 ft	Total Volume Pumped	7 L

Low-Flow S	ampling Stabili	zation Summar	Y						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	ı		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	18:01:21	600.02	16.46	6.59	326.79	9.69	12.96	0.17	23.45
Last 5	18:06:21	900.01	16.37	6.61	320.84	6.13	12.98	0.14	15.90
Last 5	18:11:21	1200.01	16.37	6.63	316.61	4.46	12.98	0.16	9.63
Last 5	18:16:21	1500.00	16.36	6.64	315.42	3.58	12.98	0.14	4.65
Last 5	18:21:22	1800.99	16.34	6.66	312.74	3.21	12.99	0.13	-0.11
Variance 0			-0.00	0.02	-4.23			0.01	-6.27
Variance 1			-0.02	0.02	-1.19			-0.01	-4.98
Variance 2			-0.01	0.01	-2.68			-0.01	-4.77

Notes

Date: 2018-03-15 13:43:32

	Pump Information:	
Dan Gibbs	Pump Model/Type	Alexis
Geosyntec	Tubing Type	polyethylene
GP-Hammond-Huffaker	Tubing Diameter	.250 in
Huffaker Rd Landfill	Tubing Length	33.5 ft
0° 0' 0"		
0° 0' 0"		
513028		
LaMotte 2020we	Pump placement from TOC	ft
	Pumping Information:	
GWC-10	Final Pumping Rate	160 mL/min
2 in	Total System Volume	0.4133665 L
34.53 ft	Calculated Sample Rate	300 sec
10 ft	Stabilization Drawdown	3.6 in
12.60 ft	Total Volume Pumped	2.4 L
	Dan Gibbs Geosyntec GP-Hammond-Huffaker Huffaker Rd Landfill O° O' O" O° O' O" 513028 LaMotte 2020we GWC-10 2 in 34.53 ft 10 ft 12.60 ft	Pump Information: Pump Model/Type Geosyntec GP-Hammond-Huffaker Huffaker Rd Landfill 0° 0' 0" 0° 0' 0" 513028 LaMotte 2020we Pump placement from TOC Pumping Information: GWC-10 2 in 34.53 ft 10 ft 12.60 ft Calculated Sample Rate Stabilization Drawdown Total Volume Pumped

Low-Flow Sam	pling Stabiliz	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	13:22:25	300.06	16.22	7.04	405.82	1.47	12.60	0.31	25.76
Last 5	13:27:25	600.05	16.29	7.08	403.16	1.37	12.60	0.24	17.67
Last 5	13:32:25	900.04	16.29	7.08	399.82	1.60	12.60	0.19	11.46
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.07	0.04	-2.66			-0.07	-8.10
Variance 2			0.00	0.01	-3.35			-0.05	-6.21

Notes

Date: 2018-03-16 10:43:22

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude	Noelia Muskus/Stephen Randall Geosyntec GP-Hammond-Huffaker Huffaker Rd Landfill 0° 0' 0''	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis Polyethylene 0.250 in 52.17 ft
Longitude Sonde SN	0° 0' 0" 501336		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-18	Final Pumping Rate	200 mL/min
Well diameter	2.0 in	Total System Volume	0.593583 L
Well Total Depth	57.17 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	12.49 tt	Total Volume Pumped	4.5 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	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:10:46	300.10	15.74	7.34	376.95	1.02	13.63	1.98	60.50
Last 5	10:15:46	600.03	15.86	7.42	368.07	1.55	13.71	1.88	56.09
Last 5	10:20:46	900.02	16.01	7.47	363.73	1.01	13.75	1.82	53.42
Last 5	10:25:46	1200.01	16.12	7.49	360.65	1.18	13.77	1.67	51.84
Last 5	10:30:46	1500.00	16.19	7.51	357.43			1.64	50.97
Variance 0			0.15	0.05	-4.35			-0.06	-2.67
Variance 1			0.11	0.02	-3.08			-0.15	-1.58
Variance 2			0.07	0.02	-3.22			-0.03	-0.87

Notes

Date: 2018-03-15 17:19:08

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond-Huffaker	Tubing Diameter	.250 in
Site Name	Huffaker Rd Landfill	Tubing Length	57 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-19	Final Pumping Rate	130 mL/min
Well diameter	2 in	Total System Volume	0.6402057 L
Well Total Depth	57.0 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	18.16 ft	Total Volume Pumped	2.6 L

Low-Flow Sar	npling Stabiliz	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	16:59:08	300.09	17.67	7.51	391.15	5.39	18.33	2.04	41.80
Last 5	17:04:08	600.08	17.54	7.54	392.56	4.80	18.35	1.42	40.43
Last 5	17:09:08	900.07	17.32	7.54	386.35	4.83	18.35	1.12	39.77
Last 5	17:14:08	1200.08	17.36	7.54	385.86	4.76	18.36	0.89	39.56
Last 5									
Variance 0			-0.13	0.02	1.41			-0.63	-1.37
Variance 1			-0.22	0.01	-6.21			-0.30	-0.66
Variance 2			0.04	-0.00	-0.49			-0.23	-0.21

Notes

Date: 2018-03-16 10:48:03

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name	Dan Gibbs Geosyntec GP-Hammond-Huffaker Huffaker Rd Landfill 0° 0' 0''	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene .250 in 30 ft
Longitude Sonde SN	0° 0' 0" 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 31.45 ft 10 ft 3.01 ft	Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	150 mL/min 0.3795819 L 300 sec 3.6 in 10.5 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			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:23:46	3000.01	13.49	7.18	382.66	5.63	3.88	1.23	11.75
Last 5	10:28:46	3300.00	13.58	7.18	384.14	5.46	3.88	1.04	6.95
Last 5	10:33:46	3600.01	13.64	7.18	383.76	4.93	3.87	1.09	2.94
Last 5	10:38:46	3899.99	13.76	7.15	384.66	4.47	3.88	0.96	-1.79
Last 5	10:43:46	4200.00	13.85	7.13	386.17	4.49	3.88	0.78	-5.79
Variance 0			0.06	-0.00	-0.37			0.05	-4.00
Variance 1			0.12	-0.02	0.90			-0.13	-4.73
Variance 2			0.09	-0.02	1.51			-0.18	-4.00

Notes

Date: 2018-03-15 16:11:45

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude	Dan Gibbs Geosyntec GP-Hammond-Huffaker Huffaker Rd Landfill 0° 0' 0" 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene .250 in 18 ft
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWC-21	Final Pumping Rate	125 mL/min
Well diameter	2 in	Total System Volume	0.2637492 L
Well Total Depth	18.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	4.11 ft	Total Volume Pumped	1.875 L

Low-Flow Sa	mpling Stabiliz	zation Summar	У						
	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	15:58:30	300.08	15.10	7.10	436.00	2.76	4.56	4.55	22.46
Last 5	16:03:30	600.07	14.52	7.06	436.28	2.32	4.57	4.45	22.79
Last 5	16:08:30	900.06	14.35	7.01	431.05	1.58	4.55	4.18	23.01
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.58	-0.04	0.29			-0.10	0.32
Variance 2			-0.17	-0.05	-5.23			-0.27	0.23

Notes

Date: 2018-03-15 15:21:44

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond-Huffaker	Tubing Diameter	.250 in
Site Name	Huffaker Rd Landfill	Tubing Length	42 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-22	Final Pumping Rate	165 mL/min
Well diameter	2 in	Total System Volume	0.4954147 L
Well Total Depth	42.30 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	1.18 ft	Total Volume Pumped	7.425 L

Low-Flow Sa	ampling Stabiliz	zation Summary	Y						
	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	14:59:24	1500.05	17.62	7.54	357.39	7.12	1.93	0.32	19.64
Last 5	15:04:24	1800.04	17.62	7.53	356.44	6.07	1.93	0.27	18.95
Last 5	15:09:24	2100.04	17.56	7.52	354.86	4.86	1.93	0.23	18.05
Last 5	15:14:24	2400.04	17.43	7.51	353.94	3.91	1.93	0.21	16.39
Last 5	15:19:24	2700.03	17.45	7.50	352.68	3.62	1.95	0.20	14.05
Variance 0			-0.06	-0.01	-1.58			-0.04	-0.90
Variance 1			-0.13	-0.01	-0.92			-0.02	-1.66
Variance 2			0.02	-0.01	-1.26			-0.01	-2.34

Notes

Log:	Huffaker Rd Landfill- 1 d	of 1														
Report Created:	2018-03-15 14:12:59															
Site:	Huffaker Rd Landfill															
GPS:																
Log Created:	2018-03-15 10:52:05															
Number Readings:		39														
Battery Type:	SmarTROLLâ & Battery	Pack														
Batton SN:	Sindi molecu, v Battery	166646														
Device Type:	SmarTROLLâ é MR	400040														
Device Type.	Smar molla, ¢ wir	F01226														
Device Six.	Dava (ashaa)	501330	T	BDO ( (L)	DDO C-+ (0/)		000 (	Art Cruel (â. Claur)	(m. (m. d. ( (	Colling the (march)	Desist (Ohmenne)	Danaity (- ( 42)	TDC (aut)	Sauth (ft)	Deserves (mail)	A:
Created	Baro (mbar)		Temp (C)	KDU (mg/L)	RDU Sat (%)	рн (рн)	ORP (mv)	Act Cond (AµS/cm)	Sp Cond (AµS/cm)	Salinity (psu)	Resist (Unm-cm)	Density (g/cm^3)	TDS (ppt) L	Jeptn (ft)	Pressure (psi)	Air Temp (C)
3/15/2018 10:52		996.7	13.53	1.39	13.6	6.9	99.1	286	366.5	0.2	3497	0.999	0	0.04	0.018	10.8
3/15/2018 10:57		996.7	14.39	0.83	8.3	6.98	96.8	285.2	357.7	0.2	3506	0.999	0	0.07	0.031	11.3
3/15/2018 11:02		996.6	14.58	0.67	6.7	7	96.4	296.3	370	0.2	3375	0.999	0	0.05	0.022	11.5
3/15/2018 11:07		996.6	14.71	0.62	6.3	7.01	95.9	295.8	368.2	0.2	3382	0.999	0	0.08	0.034	11.7
3/15/2018 11:12		996.6	14.89	0.57	5.8	7.02	95.6	296	366.8	0.2	3379	0.999	0	0.07	0.032	12.1
3/15/2018 11:17		996.6	14.94	0.49	5	7.03	95.2	296.1	366.5	0.2	3378	0.999	0	0.05	0.023	12.3
3/15/2018 11:22		996.6	15.02	0.43	4.4	7.03	95	295.4	364.9	0.2	3385	0.999	0	0.06	0.026	13.6
3/15/2018 11:27		996.5	15.09	0.39	3.9	7.03	94.9	295.6	364.7	0.2	3383	0.999	0	0.05	0.023	14
3/15/2018 11:32		996.5	15.44	0.34	3.5	7.03	94.5	295.4	361.3	0.2	3386	0.999	0	0.06	0.027	14.3
3/15/2018 11:37		996.5	15.3	0.32	3.3	7.03	94.2	294.3	361.2	0.2	3398	0.999	0	0.01	0.003	15.1
3/15/2018 11:42		996.5	15.29	0.3	3	7.03	93.9	293.4	360.1	0.2	3408	0.999	0	0.01	0.004	16.3
3/15/2018 11:47		996.3	15.48	0.27	2.7	7.03	93.8	295.1	360.7	0.2	3389	0.999	0	0.05	0.02	16.7
3/15/2018 11:52		996.2	15.39	0.26	2.7	7.03	93.2	293.3	359.3	0.2	3410	0.999	0	0.02	0.007	16.2
3/15/2018 11:57		996.2	15.25	0.25	2.5	7.04	92.9	291.9	358.7	0.2	3426	0.999	0	0	-0.001	16.7
3/15/2018 12:02		996.2	15.3	0.24	2.5	7.04	91.9	290	356	0.2	3448	0.999	0	0.01	0.005	16.4
3/15/2010 12:02		006.2	15.0	0.24	2.5	7.04	01 5	200 1	354.6	0.2	3440	0.999	0	0.01	0.005	16.5
2/15/2018 12:07		006.1	15.47	0.23	2.5	7.04	01.1	250.1	354.0	0.2	3447	0.000	0	0.01	0.001	17.3
3/15/2016 12:12		990.1	15.07	0.22	2.2	7.03	91.1	209.4	352.2	0.2	3433	0.999	0	-0.01	-0.003	17.5
3/15/2018 12:17		990.2	15.64	0.22	2.5	7.05	90.9	200.0	550.1	0.2	5405	0.999	0	-0.01	-0.005	19.9
3/15/2018 12:22		996.1	16	0.38	3.9	7.03	90.4	288.9	349	0.2	3461	0.999	0	-0.02	-0.009	24.4
3/15/2018 12:27		996	16.17	0.35	3.6	7.04	89.6	287.6	346.1	0.2	3477	0.999	0	-0.03	-0.012	27.6
3/15/2018 12:32		996	16.37	0.33	3.4	7.03	89.3	287.3	343.9	0.2	3481	0.999	0	-0.04	-0.018	29.7
3/15/2018 12:37		996	16.6	0.3	3.2	7.03	89.1	286.3	341.1	0.2	3493	0.999	0	-0.09	-0.04	30.7
3/15/2018 12:42		995.9	17	0	0	7.03	88.4	285.7	337.1	0.2	3502	0.999	0	-0.06	-0.028	31.3
3/15/2018 12:47		995.7	17.13	0	0	7.03	88	285.4	335.1	0.2	3512	0.999	0	-0.07	-0.031	32.4
3/15/2018 12:52		995.7	17.31	0	0	7.02	87.6	284.9	333.9	0.2	3511	0.999	0	-0.05	-0.021	33.5
3/15/2018 12:57		995.6	17.43	0	0	7.04	87.2	283.7	331.7	0.2	3524	0.999	0	-0.09	-0.041	34.1
3/15/2018 13:02		995.5	17.45	0	0	7.03	86.7	282.2	329.7	0.2	3544	0.999	0	-0.1	-0.042	34.8
3/15/2018 13:07		995.5	17.51	0	0	7.03	86.6	282.2	329.2	0.2	3544	0.999	0	-0.1	-0.042	35.8
3/15/2018 13:12		995.4	17.63	0	0	7.04	85.9	281.6	327.8	0.2	3551	0.999	0	-0.1	-0.042	36.2
3/15/2018 13:17		995.4	17.63	0	0	7.04	85.5	281	327	0.2	3559	0.999	0	-0.08	-0.036	36.3
3/15/2018 13:22		995.4	17.63	0	0	7.04	85	280.2	326.1	0.2	3569	0.999	0	-0.11	-0.049	36.5
3/15/2018 13:27		995.2	17.7	0	0	7.04	84.5	280	325.4	0.2	3571	0.999	0	-0.13	-0.056	37.3
3/15/2018 13:32		995.2	17.63	0	0	7.02	84	278	323 5	0.2	3598	0 999	0	-0.11	-0.046	37.2
3/15/2018 13:32		995.2	17.67	ů n	0	7 04	84	270	323.5	0.2	3600	0 999	0	-0.15	-0.065	37.2
3/15/2010 13:37		005.2	17 71	0	0	7.04	63.2	277.1	277 1	0.2	2607	0.000	0	-0.11	-0.045	37.4
3/15/2010 13:42		00E	17.71	0	0	7.03	00.5 97 E	217.2	522.1	0.2	3007	0.399	0	-0.11	-0.040	37.2
3/13/2010 13:4/		222	17.0	0	0	7.04	02.3	270	320	0.2	3023	0.999	0	-0.12	-0.055	37.5
3/15/2010 13:52		994.8	17.79	0	0	7.04	82.4	2/3.0	317.3	0.2	3055	0.999	0	-0.12	-0.051	33.4
3/15/2018 13:57		994.7	1/.8	0	0	7.04	81.9	2/2	315.3	0.2	3677	0.999	U	-0.11	-0.05	30.8
3/15/2018 14:07		994.7	17.77	0	0	7.05	80.9	271.4	314.9	0.2	3685	0.999	0	-0.1	-0.045	29

										Page	1  of  3	
					GROUND	WATER SAMPLING	G LOG SHEET					
Client:		5	5			Project No .:	CHILERI			Sampling Date:	00/15/0	
Site:		Huffaka	Dellas	diu		Location:	D 1 1 0 0 01			Sampling Date.	03/15/18	
Well ID:		Challer	77	1042/1	Pumn Type/Model	Peostallia	Flant Hammania		Sample Collection Time:			
Total Depth (ft):		GWL	-13		Tubing Material	Plat	1 Alexis		Sample Conection Time:			
		50.1	7		ruonig material	- rolyer	rylene		Sample Purge Rate (mL/min):			
Depth to Water (ft):					Pump Intake Depth (ft):					Samula ID.	30	
24		7.7	76		1	4:		Sample ID:	CUV-73			
Well Diameter (in): 2				:	Start/Stop Purge Time:	104	51+0109410		Labo	pratory Analyses: 7	Guerco	
Well Volume (gal) = $0.041d^2h$ : 6.96			16	]	Purge Rate (mL/min):	150	-130			/ 4	CRUS, 1013, 100	
Well Volume (L) = gal * 3.785: 26.33 Total Purge Volume (L): $26.25$												
d = well diameter (in	well diameter (inches) $h = \text{length of water column}$											
Well Type:	Flush	Stick Up			Sampling Method	Pump Discharge	Other:			QA/QC Collected?	100	
Well Lock:	Yes	No			1 .0					QA/QC I.D.		
Well Cap Condition:	Il Cap Condition: Good Replace											
Well Tag Present:	Yes	No			an sample containers	requiring citeniteat	preservation property pres	served prior to	demod from w	vell? Yes No		
		Spec Cond	DO			1						
Time	Temp. (°C)	(µS/cm)	(mg/L)	pH (SU)	ORP (mV)	Turbidity (NTUs)	Purge Rate (mL/min)	Volume (L)	H ₂ O Depth (f	t Notes (Purge method,	, water clarity, odor, h	
1050	13.53	366.50	1.39	6.90	99.10	39.40	150	0.50	8.01	Dad carricula	ter in ourse	
1055	14.39	357.70	0.83	6.98	96.80	38.60	150	1.50	8.04	per particola	es in porge	
11.00	14.56	370.00	0.67	7.00	96.40	36.30	150	7.00	8.04			
1105		265.00	0.62	7.01	95.00	27 00	150	2.90	8.04			
1115	IL GL	2(1,50)	0.57	7.02	95.60	30 40	150	3.75	8.07			
1110	15.07	360.30	043	7.03	95 00	NUN 24 70	150	640	6.07	T. 1. 211 00		
1125	15.09	364.70	0.39	703	94.90	18.70	150	5.00	8.07	10/6. 24.00		
1130	1544	361.30	0.34	7.03	94.50	17.00	150	6.60	9.09			
1135	15.30	361.20	032	7.03	94.20	22.40	150	7.50	8.09			
1140	15.19	360.10	0 30	7.03	43.90	13.60	150	6.00	8.07			
1145	15.48	360.70	0.24	103	43.80	11.10	150	9.00	807			
1150	15:25	356.20	0.75	1.03	47.00	11.50	150	9.50	8.07			
1200	15.30	356.00	0.24	2.04	9100	1021	150	10.50	8.04			
1205	10 +4-15-47	354.60	0.23	7.04	91.50	10.18	157	11.50	8.07			
1210	15.67	352.20	0.22	703	@ 90 9110	9.36	150	12.00	8.07			
1215	15.84	350.10	0.22	7.03	90.90	9.04	150	13.00	807			
1220	16.00	349.00	0.30	703	90.40	7.52	150	13.50	8.07			
Stabilizing Criteria		+/- 5%	0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)	+/- 0.1 SU		< 5 NTUs	> 100 mL < 250 mL	> 3L	< 0.3 ft			

										Pa	age z of 3	
					GROUND	WATER SAMPLING	LOG SHEET	(-4) -			1.1	
Client:		61	5			Project No.:	CUICSOL			Sampling Date:		
Site:		Hyccarer	- Dd lan	ACI				Samplada Marra	03/15/18			
Well ID:		GWC-	23		Pump Type/Mode	: Peristallic	Alarie		Sampl	a Collection Times	Stephen Randall	
Total Depth (ft);			<u> </u>		Tubing Materia	Poluetto	1/202		Sample	e Collection Time:	1410	
		50.	17		i donig iviateria	<u> </u>	yherre	Sample Purge Rate (mL/min):				
Depth to Water (ft):				F	ump Intake Depth (ft)					0 1 ID	150	
		7.	76			. L	15.17			Sample ID	6-1110 77	
Well Diameter (in):		2		S	Start/Stop Purge Time:	Stop Purge Time: 1045/14/0					GWC-CS	
Well Volume (gal) = $0.041d^2h$ :					Purge Rate (mL/min):	15	50-130		Bubb		Metals, ions, IDS	
Well Volume (L.) = gal * 3 785: 26.33 Total Purge Volume (L.): 26.25												
d = well diameter (ind	= well diameter (inches) h = length of water column Purge Method: $Cow-Elow-Well Volume Other: OA/OC Collected?$											
Well Type:	Vell Type: Flush Stick Up Sampling Method: Pump Discharge Other: OA/OC LD											
Well Lock:	ell Lock: (Yes) No											
Well Cap Condition	Good	Replace			All sample container	s requiring chemical	preservation properly pres	amind mules to	damak farm	10 V N		
Well Tag Present:	Yes	No			an sumple container	s requiring chemical	preservation property pres	served prior to	demod from w	Yell? Yes No		
		Snee Cond	0		1	1						
Time	Temp. (°C)	(uS/cm)	(mg/L)	pH (SU)	ORP (mV)	Turbidity (NTUs)	Purge Rate (mL/min)	Purged	H ₂ O Depth (ft	Notes (Purge metho	d, water clarity, odor,	
1225	16.17	34610	035	7.04	89.60	7.16	150	14.57		purgerate, issues w		
1230	16.37	34390	0.33	7.03	89.30	7.03	150	15.00	807			
1235	6.60	341.10	0.30	7.03	89-10	7.30	150	16.00	8.07			
1240	11.00	33210	0.00	7.03	88.40	6.72	150	17.00	8.03			
1245	17.13	335.10	0.00	7.05	88.00	6.59	150	17.50	8-02			
1250	[7.5]	333.00	0.00	7.02	87.60	6.45	130	10.00	8.01			
12.55	17.45	331.70	0.00	-7.04	81.10	6.31	130	18.50	8.00			
1300	11.45	520.10	0.00	7.05	56. to	6.42	130	19.00	8.00			
1310	17.31	212.00	0,00	700	2661	7.09	130	19.50	8.00	30		
1215	17.63	22200	0.00	7.04	05.90	7.06	130	20.00	8.00	5		
1220	17.63	27(10	0.00	7.04	25.00	7.23	(30	20.50	8.00	~ ~ ~		
1325	12.20	325.40	0.00	2.04	60.00 Gil 50	6.77		21.20	800			
330	12.63	32.50	0.00	101	D4-JU	0.90 0.21	150	2140	8.00	<u> </u>		
1335	17.67	322.20	1.00	2.04	84.00	6.06	120	22.00	6.00			
1240	17 71	327.10	0.00	2.03	02.30	6.50	130	22.20	80	×		
1345	17.80	370.0	10.00	DOL	62.50	6.01	120	20.70				
1350	17.79	317.3	0.00	7.011	97.40	6/6	130	76.10	8.01			
1355	17.80	315.3	0.00	2.04	81.90	6.72	130	25.70	0.01			
Stabil <mark>i</mark> zing Criteria		+/- 5%	0.2 mg/L or 10% for DO > 0.5 mg/L (whichever is greater)	+/- 0.1 SU	0.10	< 5 NTUs	> 100 mL < 250 mL	> 3L	< 0.3 ft			

Page 3 of 3 Geosvntec[▷] consultants **GROUNDWATER SAMPLING LOG SHEET** Client: SCS Huffaker Ed Landhill GWC-23 Project No .: GW6581 Sampling Date: 03/15/18 Site: Location: Plant Hammond Sampler's Name: Stephen Randal Well ID: Pump Type/Model: Alexis Sample Collection Time: 1410 Total Depth (ft): Tubing Material Polyethy lene Sample Purge Rate (mL/min): 50-17 130 Depth to Water (ft): Pump Intake Depth (ft): Sample ID: 7.76 GWC-23 2 Well Diameter (in): Start/Stop Purge Time: 045 1410 Metals, ions, TDS Laboratory Analyses: 150-130 6.96 Well Volume (gal) =  $0.041d^{2}h$ : Purge Rate (mL/min): 26.25 26.33 Total Purge Volume (L): Well Volume (L) = gal * 3.785: d = well diameter (inches) h = length of water-column Purge Method Ow-Flow Well Volume Other: QA/QC Collected? Vo Well Type: Flush Stick Up Sampling Method Pump Discharge Other: QA/QC I D Well Lock: Yes No Well Cap Condition Good Replace All sample containers requiring chemical preservation properly preserved prior to demob from well? Yes No Well Tag Present: No Spec. Cond. DO H₂O Depth (ft Notes (Purge method, water clarity, odor, Purged Time Temp. (°C) pH (SU) ORP (mV) **Turbidity (NTUs)** Purge Rate (mL/min)  $(\mu S/cm)$ (mg/L)Volume (L) purge rate, issues with btoc) 17 17 1400 314.9 7.05 80.9 6.90 8.01 0.00 130 26.25 03 15/18 Nor 1 0.2 mg/L or 10% for +/- 0.1 >100 mL **Stabilizing Criteria** +/- 5% DO > 0.5 mg/L< 5 NTUs >3L < 0.3 ft SU < 250 mL whichever is greater

Date: 2018-05-16 13:21:27

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude	Noelia Muskus Geosyntec GP-Hammond-Huffaker Hu ffaker Rd. Landfill 0° 0' 0''	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in ft
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	26 ft
Well Information:		Pumping Information:	
Well ID	GWC-7	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 in
Depth to Water	15.22 ft	Total Volume Pumped	11 L

Low-Flow Sa	ampling Stabiliz	zation Summary	/						
	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	12:52:54	1500.01	19.01	5.90	405.75	5.72	15.42	0.53	51.56
Last 5	12:57:54	1800.00	19.16	5.89	410.18	4.33	15.42	0.48	51.47
Last 5	13:02:54	2100.00	19.08	5.88	405.55	4.10	15.42	0.46	51.28
Last 5	13:07:54	2399.99	19.22	5.89	403.06	4.14	15.42	0.44	51.81
Last 5	13:12:54	2699.99	19.05	5.88	403.73	3.85	15.42	0.42	52.03
Variance 0			-0.08	-0.01	-4.63			-0.02	-0.19
Variance 1			0.14	0.01	-2.50			-0.03	0.53
Variance 2			-0.18	-0.01	0.67			-0.02	0.22

## Notes

pH purge only. Total depth: 32.25 ft.

Date: 2018-05-16 12:32:50

Project Information:		Pump Information:	
Operator Name	Rich Murray	Pump Model/Type	Alexis
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond-Huffaker	Tubing Diameter	0.17 in
Site Name	Huffaker Rd. Landfill	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	513028		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	22 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 in
Depth to Water	11.76 ft	Total Volume Pumped	10 L

Low-Flow S	Sampling Stabili	zation Summary	/						
	Time	Elapsed	Temp C	рН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilizatio	n		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:09:51	1799.99	17.27	7.27	478.06	1.46	13.94	0.78	-19.90
Last 5	12:14:51	2099.97	17.35	7.28	482.09	1.84	13.96	0.85	-19.09
Last 5	12:19:51	2399.98	17.45	7.31	458.74	1.30	13.97	0.55	-31.79
Last 5	12:24:51	2699.97	17.54	7.30	468.81	1.45	13.97	0.62	-28.30
Last 5	12:29:51	2999.96	17.58	7.30	464.22	1.05	13.97	0.56	-29.84
Variance 0			0.10	0.03	-23.35			-0.30	-12.69
Variance 1			0.08	-0.00	10.07			0.07	3.48
Variance 2			0.05	-0.00	-4.59			-0.05	-1.54

#### Notes

1 bottle(s): One 120-mL plastic bottle for Fluoride (EPA 300.0). Total depth: 27.6 ft.

Grab Samples GWC-8 Fluoride Date: 2018-05-16 11:17:29

	Pump Information:	
Noelia Muskus Geosyntec GP-Hammond-Huffaker Hu ffaker Rd. Landfill 0° 0' 0''	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in ft
0° 0' 0"		
497259		
LaMotte 2020we	Pump placement from TOC	51 ft
	Pumping Information:	
GWC-18	Final Pumping Rate	200 mL/min
2 in	Total System Volume	0.09 L
ft	Calculated Sample Rate	300 sec
10 ft	Stabilization Drawdown	3 in
13.27 ft	Total Volume Pumped	10 L
	Noelia Muskus Geosyntec GP-Hammond-Huffaker Hu ffaker Rd. Landfill 0° 0' 0" 0° 0' 0" 497259 LaMotte 2020we GWC-18 2 in ft 10 ft 13.27 ft	Pump Information:Noelia MuskusPump Model/TypeGeosyntecTubing TypeGP-Hammond-Huffaker HuTubing Diameterffaker Rd. LandfillTubing Length0° 0' 0"0° 0' 0"0° 0' 0"497259LaMotte 2020wePump placement from TOCPumping Information:GWC-18Final Pumping Rate2 inTotal System VolumeftCalculated Sample Rate10 ftStabilization Drawdown13.27 ftTotal Volume Pumped

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	ı		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:45:45	1500.01	17.53	7.47	361.71	0.89	14.67	1.08	37.73
Last 5	10:50:45	1800.01	17.56	7.47	359.52	0.91	14.69	1.21	38.20
Last 5	10:55:45	2100.04	17.67	7.52	355.42	1.13	14.71	0.48	35.79
Last 5	11:00:45	2400.02	17.91	7.54	349.93	0.89	14.70	0.48	34.93
Last 5	11:05:45	2700.00	17.80	7.54	349.04	1.52	14.71	0.52	34.31
Variance 0			0.11	0.05	-4.10			-0.73	-2.41
Variance 1			0.24	0.02	-5.48			0.01	-0.86
Variance 2			-0.11	0.00	-0.89			0.03	-0.62

### Notes

1 bottle: One 250-mL plastic bottle with HNO3 for Calcium (EPA 6020B). Total depth: 57.13 ft.

Grab Samples GWC-18 Grab Date: 2018-05-15 18:10:12

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude	Rich Murray Geosyntec GP-Hammond-Huffaker Hu ffaker Rd. Landfill 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	52 ft
Well Information:		Pumping Information:	
Well ID	GWC-19	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 in
Depth to Water	19.92 ft	Total Volume Pumped	8 L

Low-Flow S	ampling Stabili:	zation Summary	Y						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	1 IIIII		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	17:48:54	1200.01	18.25	7.46	402.55	1.63	20.32	0.54	11.77
Last 5	17:53:54	1500.00	18.33	7.46	405.13	1.99	20.34	0.42	0.86
Last 5	17:58:54	1799.99	18.35	7.45	408.50	1.24	20.35	0.35	-11.81
Last 5	18:03:54	2099.98	18.21	7.44	412.14	1.59	20.36	0.29	-20.17
Last 5	18:08:54	2399.98	18.25	7.44	411.12	0.76	20.36	0.27	-25.31
Variance 0			0.01	-0.01	3.37			-0.08	-12.67
Variance 1			-0.13	-0.01	3.63			-0.05	-8.36
Variance 2			0.04	0.01	-1.02			-0.02	-5.14

Notes GWC-19 No bottles, pH only. Total depth: 57 ft.

Date: 2018-05-15 16:04:50

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude	Noelia Muskus and Rich Murray Geosyntec GP-Hammond-Huffaker Huffaker Rd. Landfill 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis polyethylene 0.17 in 36.75 ft
Longitude	0° 0' 0"		
Sonde SN	497259		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	36.75 ft
Well Information:		Pumping Information:	
Well ID	GWC-22	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2540308 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3 in
Depth to Water	3.22 ft	Total Volume Pumped	15 L

Low-Flow Sa	mpling Stabiliz	zation Summary	/						
	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	15:42:19	2699.97	18.42	7.51	356.58	3.09	4.22	0.31	35.96
Last 5	15:47:19	2999.96	18.42	7.50	355.66	2.56	4.22	0.51	32.98
Last 5	15:52:19	3299.96	18.44	7.49	355.42	2.73	4.23	0.37	28.83
Last 5	15:57:19	3599.95	18.51	7.48	355.62	2.83	4.23	0.29	26.71
Last 5	16:02:20	3900.95	18.42	7.52	354.61	2.35	4.23	0.40	21.92
Variance 0			0.02	-0.01	-0.23			-0.14	-4.15
Variance 1			0.07	-0.01	0.19			-0.08	-2.13
Variance 2			-0.09	0.03	-1.00			0.11	-4.79

Notes Purge only. Total depth: 42.28 ft.

Date: 2018-10-04 12:13:36

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	449622		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	ft
Well Information:		Pumping Information:	
Well ID	GWA-1	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 in
Depth to Water	11.48 ft	Total Volume Pumped	5 L

Low-Flow San	npling Stabiliz	zation Summary	/						
	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	11:29:46	300.10	19.12	7.09	170.13	0.67	11.86	0.37	31.95
Last 5	11:34:46	600.03	18.78	7.01	168.90	0.97	11.88	0.11	17.44
Last 5	11:39:46	900.01	18.87	6.94	167.76	0.84	11.91	0.09	-6.48
Last 5	11:44:46	1200.01	18.76	6.92	167.00	0.63	11.92	0.09	-21.05
Last 5									
Variance 0			-0.34	-0.09	-1.23			-0.27	-14.51
Variance 1			0.09	-0.06	-1.14			-0.02	-23.92
Variance 2			-0.11	-0.02	-0.76			0.00	-14.57

### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 40.06 ft.

Grab Samples GWA-1 Grab Date: 2018-10-04 09:53:29

Project Information:		Pump Information:	
Operator Name	Rich Murray	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	18 ft
Well Information:		Pumping Information:	
Well ID	GWA-2	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 in
Depth to Water	6.19 ft	Total Volume Pumped	4 L

Low-Flow Sar	npling Stabiliz	zation Summary	V						
	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	09:19:39	300.12	21.02	6.58	398.19	1.37	6.49	0.19	65.28
Last 5	09:24:39	600.02	20.75	6.58	394.26	1.29	6.51	0.12	45.79
Last 5	09:29:39	900.02	20.58	6.59	397.67	2.07	6.52	0.09	35.34
Last 5	09:34:39	1200.02	20.53	6.62	398.63	2.01	6.54	0.08	27.87
Last 5									
Variance 0			-0.27	-0.00	-3.93			-0.07	-19.49
Variance 1			-0.17	0.02	3.40			-0.03	-10.45
Variance 2			-0.05	0.02	0.96			-0.01	-7.47

### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth = 25.90 ft.

Grab Samples GWA-2 Grab Date: 2018-10-04 10:39:58

Project Inform	ation:				Pump Infor	mation:				
Operator Name D Company Name G			Gibbs syntec		Pump Mode Tubing Typ	el/Type e	A p	Alexis Peristaltic polyethylene		
Project NameGP-HammondSite NamePlant HammondLatitude0° 0' 0"					Tubing Diameter0.17 inTubing Length15.20 ft					
Longitude		00 0'	0"							
Sonde SN Turbidity Make/Model			otte 2020we		Pump place	: 1	13.20 ft			
Well Information	on:				Pumping In	formation:				
Well ID Well diameter		GWA 2 in	-3		Final Pump Total Syste	ing Rate m Volume	2	200 mL/min ) 157844 I		
Well Total Dep Screen Length	th I	ft 10 ft			Calculated Stabilizatio	Sample Rate n Drawdown		300 sec 3 in		
Depth to Wate	r	5.06	ft		Total Volun	ne Pumped	3	3 L		
Low-Flow Sam	pling Stabiliza	ation Summary								
Otabilization	Time	Elapsed	Temp C	pH	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L		
Stabilization	10.00.10	200.05	+/- 0.5	+/- 0.1	+/- 5%	+/- 10	F 00	+/- 10%		

	Time	Elapsed	Temp C	p C pH SpCond μS/cm Turb 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	10:06:12 10:11:12 10:16:12	300.05 600.02 900.02	25.20 24.92 24.86	6.57 6.59 6.62	772.62 778.48 780.67	2.66 1.87 1.10	5.38 5.39 5.41	0.20 0.14 0.12	-70.80 -72.05 -72.00
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.28	0.02	5.85			-0.06	-1.25
Variance 2			-0.05	0.03	2.20			-0.02	0.05

Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0).TD=21.65 ft.

Grab Samples GWA-3 Grab Date: 2018-10-04 10:55:06

Project Information:					Pump Information:						
Operator NameNoelia MCompany NameGeosyntProject NameGP-HamSite NamePlant HaLatitude0% O' O''			elia Muskus osyntec Hammond nt Hammond 0' 0"		Pump Mod Tubing Typ Tubing Dia Tubing Ler	Pump Model/Type Tubing Type Tubing Diameter Tubing Length			Alexis peristaltic polyethylene 0.17 in ft		
Longitude		0° (	)' 0"								
Sonde SN		449	622								
Turbidity Ma	ke/Model	LaN	lotte 2020we		Pump plac	ement from TO	C fi	t			
Well Informa	tion:				Pumpina Ir	nformation:					
Well ID		GW	A-4		Final Pump	Final Pumping Rate			200 mL/min		
Well diamete	er	2 in			Total System Volume			0.09 L			
Well Total De	epth	ft			Calculated	Calculated Sample Rate			300 sec		
Screen Leng	th	10 f	t So th		Stabilization Drawdown 3 in						
Depth to water		10.6	911		Total Volur	ne Pumped	0.	5 L			
Low-Flow Sa	mpling Stabiliz	zation Summar	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	10:18:36	300.10	22.01	6.78	692.75	0.94	10.95	0.47	128.99		
Last 5	10:23:36	600.03	22.08	6.75	699.48	0.79	10.95	0.46	121.51		
Last 5 Last 5 Last 5	10.28.30	900.05	21.90	0.72	/08.3/	0.72	10.97	0.44	114.97		
Variance 0			nan	nan	nan			nan	nan		
Variance 1			0.07	-0.03	6.73			-0.01	-7.47		

Notes

Variance 2

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C). Total depth: 21.78 ft.

8.89

-0.02

-6.55

-0.04

-0.11

Grab Samples GWA-4 Grab Date: 2018-10-04 12:12:51

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN	Dan Gibbs Geosyntec GP-Hammond Plant Hammond 0° 0' 0" 0° 0' 0" 365491	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis Peristaltic polyethylene 0.17 in 30.11 ft
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	28.11 ft
Well Information:		Pumping Information:	
Well ID Well diameter Well Total Depth Screen Length Depth to Water	GWA-11 2 in ft 10 ft 15.87 ft	Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	200 mL/min 0.2243937 L 300 sec 3 in 5 L

Low-Flow Sa	ampling Stabili:	zation Summar	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	11:30:44	300.03	19.55	6.94	195.29	0.92	16.16	0.16	-83.23
Last 5	11:35:44	600.02	19.21	6.78	197.72	1.81	16.18	0.14	-79.06
Last 5	11:40:43	900.02	18.98	6.71	197.85	1.03	16.18	0.12	-78.00
Last 5	11:45:43	1200.02	19.01	6.68	199.76	1.28	16.18	0.11	-78.55
Last 5	11:50:43	1500.02	19.05	6.66	201.52	1.36	16.19	0.10	-77.78
Variance 0			-0.22	-0.07	0.12			-0.02	1.06
Variance 1			0.02	-0.03	1.92			-0.01	-0.55
Variance 2			0.05	-0.02	1.75			-0.01	0.77

### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=36.46 ft.

Grab Samples GWA-11 Grab
Date: 2018-10-04 10:53:11

Project Information:		Pump Information:	
Operator Name	Rich Murray	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	13 ft
Well Information:		Pumping Information:	
Well ID	GWC-5	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 in
Depth to Water	5.26 ft	Total Volume Pumped	5 L

Low-Flow Sam	npling Stabili:	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	10:35:15	300.03	23.45	6.42	604.57	1.36	5.34	0.17	27.02
Last 5	10:40:15	600.01	23.12	6.46	604.85	0.22	5.34	0.10	13.05
Last 5	10:45:15	900.00	23.08	6.50	601.30	2.19	5.35	0.08	4.47
Last 5	10:50:15	1199.99	23.04	6.52	598.21	2.34	5.35	0.07	-2.62
Last 5									
Variance 0			-0.32	0.05	0.27			-0.06	-13.97
Variance 1			-0.04	0.03	-3.54			-0.02	-8.58
Variance 2			-0.04	0.02	-3.09			-0.01	-7.09

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth = 21.53 ft.

Grab Samples GWC-5 Grab Date: 2018-10-04 12:44:08

Project Information:		Pump Information:	
Operator Name	Rich Murray	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	37 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 in
Depth to Water	15.79 ft	Total Volume Pumped	13 L

Low-Flow Sa	ampling Stabiliz	zation Summary	/						
	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	12:23:05	2699.98	19.67	6.91	480.11	9.37	15.89	0.07	-43.65
Last 5	12:28:05	2999.98	19.71	6.91	488.28	8.35	15.89	0.06	-46.29
Last 5	12:33:05	3299.97	19.66	6.92	491.15	4.96	15.89	0.06	-48.63
Last 5	12:38:05	3599.96	19.68	6.92	489.28	4.33	15.89	0.06	-51.32
Last 5	12:43:05	3899.96	19.70	6.93	481.12	4.21	15.89	0.05	-53.84
Variance 0			-0.05	0.01	2.88			-0.00	-2.34
Variance 1			0.02	0.00	-1.87			-0.00	-2.69
Variance 2			0.02	0.01	-8.16			-0.00	-2.51

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth = 42.85 ft.

Grab Samples GWC-6 Grab Date: 2018-10-04 14:37:05

Project Information:					Pump Information:					
Operator Name Company Name Project Name Site Name Latitude		Noe Geo GP Pla 0° (	elia Muskus osyntec -Hammond nt Hammond 0' 0"		Pump Model/Type Tubing Type Tubing Diameter Tubing Length			Alexis peristaltic polyethylene 0.17 in ft		
Longitude	Sonde SN //19622									
Solide SN449622Turbidity Make/ModelLaMotte 2020we				Pump placement from TOC ft						
Well Information:			Pumping In	formation:						
Well ID		GW	C-7		Final Pumping Rate			0 mL/min		
Well diame	eter Denth	2 in ft			Calculated Sample Rate			0.09 L 300 sec		
Screen Len	ngth	10 1	ft		Stabilization Drawdown			3 in		
Depth to W	/ater	14.9	98 ft		Total Volun	ne Pumped	4.2	25 L		
Low-Flow S	Sampling Stabiliz	zation Summar	у							
<b>O</b> (1)	Time	Elapsed	Temp C	pН	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV	
Stabilizatio	on 10:11:10	00040	+/- 0.5	+/- 0.1	+/- 5%	+/- 10	45.40	+/- 10%	+/- 10	
Last 5	13:41:42	300.10	21.76	5.95 5.97	417.96	3.19	15.18 15.16	0.17	36.37	
Lusi	10.40.42	000.02	21.43	0.04	-10.7Z	1.00	10.10	0.12	55.02	

Last 5	13:51:42	900.01	21.36	5.92	412.78	2.73	15.15	0.10	36.43
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.27	-0.01	-1.24			-0.05	-0.55
Variance 2			-0.13	-0.02	-3.94			-0.02	0.61

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and ions (EPA 2540C/300.0). Total depth: 32.29 ft.

Grab Samples GWC-7 Grab FD-04 Duplicate Date: 2018-10-04 16:08:16

Project Information:		Pump Information:	
Operator Name	Noelia Muskus	Pump Model/Type	Alexis peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	449622		
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 in
Depth to Water	12.29 ft	Total Volume Pumped	5.5 L

Low-Flow San	npling 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	15:28:15	300.09	21.51	7.05	472.22	5.83	14.18	0.16	2.85
Last 5	15:33:15	600.03	21.15	7.15	472.81	5.01	14.33	0.14	-7.48
Last 5	15:38:15	900.02	20.91	7.20	474.23	5.05	14.39	0.13	-22.98
Last 5	15:43:15	1200.01	20.80	7.22	470.45	4.95	14.44	0.14	-32.36
Last 5									
Variance 0			-0.36	0.10	0.59			-0.02	-10.33
Variance 1			-0.24	0.05	1.42			-0.01	-15.50
Variance 2			-0.12	0.02	-3.79			0.01	-9.38

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth: 27.62 ft.

Grab Samples GWC-8 Grab Date: 2018-10-05 10:23:08

Project Information:		Pump Information:	
Operator Name	Rich Murray	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	47 ft
Well Information:		Pumping Information:	
Well ID	GWC-9	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 in
Depth to Water	14.71 ft	Total Volume Pumped	12 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	10:00:10	2100.01	19.73	6.74	326.31	11.37	14.97	1.89	66.90
Last 5	10:05:10	2400.01	19.92	6.26	346.29	6.10	14.97	0.63	40.58
Last 5	10:10:10	2700.01	19.95	6.33	347.06	4.22	14.97	0.27	24.85
Last 5	10:15:10	3000.01	20.15	6.36	348.07	4.12	14.97	0.20	14.22
Last 5	10:20:10	3299.99	20.21	6.41	347.41	2.73	14.97	0.18	6.08
Variance 0			0.03	0.06	0.77			-0.36	-15.74
Variance 1			0.20	0.04	1.01			-0.07	-10.62
Variance 2			0.06	0.04	-0.66			-0.02	-8.14

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C/300.0). Total depth = 52.30 ft.

Grab Samples GWC-9 Grab Date: 2018-10-04 13:37:03

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	27.48 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	365491		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	25.48 ft
Well Information:		Pumping Information:	
Well ID	GWC-10	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2126549 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3 in
Depth to Water	14.28 ft	Total Volume Pumped	5 L

Low-Flow S	ampling Stabili	zation Summary	V						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	n		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:55:01	300.02	20.84	7.14	378.99	8.41	14.33	2.27	-92.10
Last 5	13:00:01	600.02	20.39	7.22	379.48	4.42	14.33	2.31	-90.27
Last 5	13:05:01	900.02	20.18	7.24	379.57	3.99	14.34	0.13	-88.76
Last 5	13:10:01	1200.02	20.08	7.25	379.21	2.02	14.34	0.10	-88.74
Last 5	13:15:01	1500.02	19.86	7.26	379.43	1.95	14.34	0.10	-88.79
Variance 0			-0.20	0.02	0.09			-2.18	1.52
Variance 1			-0.11	0.01	-0.36			-0.02	0.02
Variance 2			-0.21	0.00	0.22			-0.01	-0.05

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=34.55 ft.

Grab Samples GWC-10 Grab Date: 2018-10-05 10:00:42

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	51.16 ft
Latitude	00 0, 0.		
Longitude	0° 0' 0"		
Sonde SN	365491		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	49.16 ft
Well Information:		Pumping Information:	
Well ID	GWC-18	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3183487 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3 in
Depth to Water	13.46 ft	Total Volume Pumped	5 L

Low-Flow Sa	mpling Stabiliz	zation Summary	y						
	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	09:19:37	300.05	19.28	7.32	346.46	0.85	14.46	0.66	-67.62
Last 5	09:24:37	600.99	19.15	7.43	346.32	1.38	14.50	0.38	-68.37
Last 5	09:29:37	900.98	19.12	7.49	346.02	0.72	14.52	0.33	-69.31
Last 5	09:34:37	1200.98	19.01	7.54	345.11	1.29	14.53	0.30	-70.46
Last 5	09:39:37	1500.98	19.05	7.57	345.64	0.72	14.54	0.28	-70.36
Variance 0			-0.03	0.06	-0.30			-0.06	-0.94
Variance 1			-0.11	0.05	-0.91			-0.02	-1.15
Variance 2			0.04	0.03	0.53			-0.03	0.09

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=57.12 ft.

Grab Samples GWC-18 Grab Date: 2018-10-04 17:07:50

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	52.76 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	365491		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	49.76 ft
Well Information:		Pumping Information:	
Well ID	GWC-19	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3254902 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3 in
Depth to Water	19.90 ft	Total Volume Pumped	5 L

Low-Flow Sa	mpling Stabiliz	zation Summary	y						
	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	16:24:35	300.26	21.15	7.24	390.73	1.00	20.25	1.04	-100.58
Last 5	16:29:35	600.25	21.07	7.33	395.35	1.98	20.25	0.17	-102.53
Last 5	16:34:35	900.25	20.66	7.39	392.63	0.53	20.27	0.15	-101.01
Last 5	16:39:35	1200.25	20.52	7.43	393.02	0.49	20.27	0.13	-98.39
Last 5	16:44:35	1500.25	20.56	7.44	395.14	0.41	20.27	0.13	-95.77
Variance 0			-0.41	0.06	-2.72			-0.03	1.53
Variance 1			-0.14	0.04	0.39			-0.02	2.62
Variance 2			0.04	0.01	2.12			-0.01	2.62

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=57.0 ft.

Grab Samples GWC-19 Grab Date: 2018-10-05 11:04:56

ORP mV +/- 10 -112.82 -116.84

Project Info	ormation:			Pump Information:						
Operator N Company N Project Nar Site Name	lame Name me	Dan Geo GP- Plan	Gibbs syntec Hammond It Hammond		Pump Mod Tubing Typ Tubing Dia Tubing Ler	el/Type be meter ngth	Al po 0. 28	exis Peristaltic blyethylene 17 in 3.51 ft		
Latitude		0° 0	0"		C C	•				
Longitude		0° 0	0"							
Sonde SN 365491										
Turbidity Make/Model LaMotte 2020we				Pump placement from TOC 26.51 ft						
Well Inform	nation:				Pumping Ir	nformation:				
Well ID		GW	C-20		Final Pump	oing Rate	20	00 mL/min		
Well diame	ter	2 in			Total Syste	em Volume	0.	0.2172522 L		
Screen Ler	Deptn	10 ft	ŀ		Calculated	Sample Rate	30	300 sec 3 in		
Depth to W	/ater	4.35	5 ft		Total Volur	ne Pumped	3	L		
	Sampling Stabiliz	ation Summan	,							
	Time	Elapsed	Temp C	рН	SpCond uS	Com Turb NTU	DTW ft	RDO mg/L		
Stabilizatio	on		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%		
Last 5 Last 5	10:35:29 10:40:29	300.03 600.02	20.61 20.42	7.14 7.08	378.61 379.01	0.55 0.42	5.02 5.05	0.22 0.14		

Last 5	10:45:30	900.98	20.21	7.07	379.46	0.44	5.07	0.11	-118.10
Last 5 Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.19	-0.06	0.39			-0.08	-4.02
Variance 2			-0.21	-0.01	0.45			-0.03	-1.26

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=31.50 ft.

Grab Samples GWC-20 Grab

Date: 2018-10-04 15:50:37

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Plant Hammond	Tubing Length	10.91 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	365491		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	8.91 ft
Well Information:		Pumping Information:	
Well ID	GWC-21	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.1386959 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3 in
Depth to Water	5.48 ft	Total Volume Pumped	3 L

Low-Flow Sar	npling Stabiliz	zation Summar	V						
	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	15:09:44	300.02	24.08	6.50	290.26	4.64	5.68	0.52	-70.32
Last 5	15:14:44	600.02	23.47	6.35	298.88	2.93	5.71	0.18	-82.91
Last 5	15:19:44	900.02	23.34	6.34	295.58	1.72	5.71	0.12	-83.79
Last 5	15:24:44	1200.02	23.20	6.33	290.45	1.06	5.71	0.11	-83.99
Last 5									
Variance 0			-0.62	-0.15	8.63			-0.34	-12.59
Variance 1			-0.13	-0.01	-3.31			-0.06	-0.88
Variance 2			-0.14	-0.01	-5.12			-0.01	-0.20

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=19.52 ft.

Grab Samples GWC-21 Grab Date: 2018-10-04 14:44:37

3.16

3.40

3.80

3.80

0.17

0.10

nan

-0.20

-0.07

ORP mV +/- 10 -143.41

-147.36

-150.95

nan

-3.95

-3.59

Project Infor	Project Information:					Pump Information:						
Operator Na	me	Dan	Gibbs		Pump Mod	el/Type	A	lexis Peristaltic				
Company Na	ime	Geo	syntec		Tubing Typ	be	p	olyethylene				
Project Nam	е	GP-	Hammond		Tubing Dia	meter	0.	.17 in				
Site Name		Plar	nt Hammond		Tubing Ler	ngth	3	5.73 ft				
Latitude		0° (	)' 0"									
Longitude		0° (	)' 0"									
Sonde SN		365	491									
Turbidity Make/Model LaMotte 2020we				Pump placement from TOC 33.73 ft								
Well Informa	tion:				Pumping Ir	nformation:						
Well ID		GW	C-22		Final Pump	oing Rate	2	00 mL/min				
Well diamete	er	2 in			Total System Volume 0.2494781 L							
Well Total De	epth	ft			Calculated	Sample Rate	3	00 sec				
Screen Leng	th	10 f	t		Stabilizatio	on Drawdown	3	in				
Depth to Wa	ter	3.16	6 ft		Total Volur	ne Pumped	3	3 L				
	maling Stabiliz	ation Summary										
LOW-FIOW 3a	Time	Elansed	/ Temn C	nН	SpCond us	Com Turb NTU		PDO ma/l				
Stabilization	TIME	Liapseu	+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%				
Last 5	14:09:23	300.02	23.41	7.43	367.04	3.43	3.76	0.37				

7.49

7.52

nan

0.06

0.03

#### Notes

Last 5

Last 5

Last 5 Last 5 Variance 0

Variance 1

Variance 2

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C and 300.0). TD=42.32 ft.

366.95

366.60

nan

-0.09

-0.35

Grab Samples GWC-22 Grab 14:14:23

14:19:23

600.02

900.02

22.97

22.75

nan

-0.44

-0.22

Date: 2018-10-05 12:21:12

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude	Noelia Muskus Geosyntec GP-Hammond Plant Hammond 0° 0' 0" 0° 0' 0"	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	QED MP50 polyethylene 0.17 in ft
Sonde Sin	449022	Dump placement from TOC	f+
Well Information:		Pumping Information:	
Well ID Well diameter Well Total Depth Screen Length Depth to Water	GWC-23 2 in ft 10 ft 10.25 ft	Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	200 mL/min 0.485 L 300 sec 3 in 21 L

Low-Flow Sa	mpling Stabili	zation Summary	/						
	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	11:41:00	2699.99	20.83	6.95	332.79	11.72	10.70	0.09	-34.47
Last 5	11:46:00	2999.99	21.06	6.96	333.07	11.42	10.70	0.09	-36.68
Last 5	11:51:00	3299.98	21.25	6.95	336.54	7.64	10.70	0.07	-38.52
Last 5	11:56:00	3599.98	21.46	6.96	328.66	6.46	10.70	0.00	-36.90
Last 5	12:01:00	3899.97	21.37	6.97	322.99	4.85	10.70	0.00	-38.13
Variance 0			0.19	-0.00	3.47			-0.02	-1.85
Variance 1			0.21	0.00	-7.89			-0.07	1.63
Variance 2			-0.09	0.01	-5.67			0.00	-1.24

#### Notes

4 plastic bottles: two 1-L bottles with HNO3 for Ra (EPA 9315/9320); one 250-mL bottle with HNO3 for App. III and GA state list metals (EPA 6020B); and one 500-mL bottle for TDS and anions (EPA 2540C). Total depth: 50.17 ft.

Grab Samples GWC-23 Grab Date: 2018-12-11 13:28:21

Project Information:		Pump Information:	
Operator Name	Dan Gibbs	Pump Model/Type	Alexis Peristaltic
Company Name	Geosyntec	Tubing Type	polyethylene
Project Name	GP-Hammond	Tubing Diameter	0.17 in
Site Name	Huffaker Rd. Landfill	Tubing Length	37.09 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	440279		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	35.09 ft
Well Information:		Pumping Information:	
Well ID	GWC-6	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2555484 L
Well Total Depth	ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3 in
Depth to Water	14.53 ft	Total Volume Pumped	6 L

Low-Flow S	ampling Stabili	zation Summar	V						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilizatio	n		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:56:28	600.03	15.98	6.88	501.22	8.21	14.59	0.79	18.65
Last 5	13:01:28	900.03	16.05	6.89	498.49	6.88	14.59	0.86	12.26
Last 5	13:06:28	1200.02	15.96	6.91	495.28	4.98	14.59	0.81	7.32
Last 5	13:11:28	1500.02	15.75	6.92	497.39	3.77	14.59	0.14	3.10
Last 5	13:16:28	1800.02	15.92	6.94	493.35	2.63	14.59	0.14	-0.48
Variance 0			-0.09	0.02	-3.21			-0.05	-4.94
Variance 1			-0.21	0.01	2.12			-0.67	-4.22
Variance 2			0.17	0.02	-4.05			-0.01	-3.58

#### Notes

One 250-mL bottle for sulfate (EPA 300.0). Total depth: 43.50 ft

Date: 2018-12-11 12:28:14

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN	Dan Gibbs Geosyntec GP-Hammond Huffaker Rd. Landfill 0° 0' 0" 0° 0' 0" 440279	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis Peristaltic polyethylene 0.17 in 21.45 ft
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	19.45 ft
Well Information: Well ID Well diameter Well Total Depth Screen Length Depth to Water	GWC-8 2 in ft 10 ft 10.14 ft	Pumping Information: Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	200 mL/min 0.1857404 L 300 sec 3 in 8 L

Low-Flow S	ampling Stabili	zation Summar	V						
	Time	Elapsed	Temp C	рН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	ſ		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:57:26	1200.02	15.77	7.34	539.49	1.48	11.79	2.16	38.97
Last 5	12:02:26	1500.02	15.75	7.36	527.08	1.46	11.80	2.45	36.31
Last 5	12:07:26	1800.01	15.92	7.38	513.67	1.26	11.80	2.40	34.42
Last 5	12:12:26	2100.01	15.91	7.39	497.54	1.09	11.80	2.33	31.14
Last 5	12:17:26	2400.01	15.80	7.40	497.35	1.30	11.80	2.19	30.97
Variance 0			0.18	0.02	-13.41			-0.05	-1.89
Variance 1			-0.01	0.01	-16.12			-0.07	-3.28
Variance 2			-0.12	0.01	-0.19			-0.14	-0.17

#### Notes

Two bottles: One 250-mL bottle with HNO3 for calcium (EPA 6020B) and one 250 mL bottle for chloride (EPA 300.0). TD=27.63 ft

Date: 2018-12-11 11:16:11

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN	Dan Gibbs Geosyntec GP-Hammond Huffaker Rd. Landfill 0° 0' 0" 0° 0' 0" 440279	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis Peristaltic polyethylene 0.17 in 46.60 ft
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	44.60 ft
Well Information:		Pumping Information:	
Well ID Well diameter Well Total Depth Screen Length Depth to Water	GWC-9 2 in ft 10 ft 12.30 ft	Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	200 mL/min 0.2979955 L 300 sec 3 in 4 L

Low-Flow Sa	ampling Stabili	zation Summar	V						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	ı		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:52:15	300.05	15.07	7.23	330.83	1.67	12.51	0.57	39.13
Last 5	10:57:15	600.02	15.57	7.12	331.04	1.18	12.51	0.26	34.80
Last 5	11:02:15	900.02	15.53	7.06	331.17	1.32	12.51	0.19	32.67
Last 5	11:07:15	1200.01	14.85	7.03	333.19	1.20	12.51	0.17	31.69
Last 5									
Variance 0			0.50	-0.11	0.21			-0.31	-4.34
Variance 1			-0.04	-0.06	0.13			-0.07	-2.13
Variance 2			-0.68	-0.03	2.03			-0.02	-0.98

#### Notes

One 250-mL bottle for sulfate (EPA 300.0). Total depth: 52.52 ft

Date: 2018-12-11 10:17:25

Project Inforn	nation:				Pump Information:					
Operator Name Company Name Project Name Site Name			Gibbs osyntec Hammond faker Rd Land	fill	Pump Mod Tubing Typ Tubing Dia Tubing Len	el/Type e meter ath	A p 0. 2	Alexis Peristaltic polyethylene 0.17 in 27.48 ft		
Latitude		0° (	)' 0"		Tabilig Lon	9	-			
Longitude		0° (	)' 0"							
Sonde SN		440	279							
Turbidity Mak	e/Model	LaN	lotte 2020we		Pump place	ement from TOC	2	5.48 ft		
Well Informat	ion:				Pumping In	formation:				
Well ID		GW	C-10		Final Pump	ing Rate	2	00 mL/min		
Well diameter		2 in			Total Syste	m Volume	0	.2126549 L		
Well Iotal De	pth b	ft 10 <del>f</del>	+		Calculated	Sample Rate	3	00 sec		
Depth to Wat	er	101	5 ft		Total Volun	ne Pumped	3	.5 L		
Low-Flow Sar	npling Stabiliz	ation Summar	/							
0	Time	Elapsed	Temp C	pH	SpCond µS	/cmTurb NTU	DTW ft	RDO mg/L	ORP mV	
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10	
Last 5	09:53:20	300.11	13.98	7.17	370.32	2.89	12.00	0.45	63.61	
Last 5 Last 5 Last 5	10:03:20	900.01	14.32 14.28	7.19 7.19	366.02 369.93	2.50 1.54	12.00	0.25 0.35	47.82 38.98	
Last 5										

Variance 0 nan nan nan nan nan Variance 1 0.34 0.02 -4.30 -0.21 -15.79 Variance 2 -0.03 0.01 3.92 0.10 -8.84

#### Notes

Two bottles: One 250-mL bottle with HNO3 for barium and calcium (EPA 6020B) and one 250 mL bottle for chloride (EPA 300.0). Total depth: TD=34.51 ft

Date: 2018-12-11 15:31:49

Project Information:		Pump Information:	
Operator Name Company Name Project Name Site Name Latitude Longitude Sonde SN	Dan Gibbs Geosyntec GP-Hammond Huffaker Rd. Landfill 0° 0' 0'' 0° 0' 0'' 440279	Pump Model/Type Tubing Type Tubing Diameter Tubing Length	Alexis Peristaltic polyethylene 0.17 in 28.51 ft
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	26.51 ft
Well Information:		Pumping Information:	
Well ID Well diameter Well Total Depth Screen Length Depth to Water	GWC-20 2 in ft 10 ft 2.90 ft	Final Pumping Rate Total System Volume Calculated Sample Rate Stabilization Drawdown Total Volume Pumped	200 mL/min 0.2172522 L 300 sec 3 in 5 L

Low-Flow S	ampling Stabili	zation Summary	V						
	Time	Elapsed	Temp C	pН	SpCond µS	S/cmTurb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization	n		+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:03:11	300.05	13.49	7.00	382.14	3.32	3.55	0.76	-4.35
Last 5	15:08:11	600.03	13.79	7.07	381.62	1.91	3.56	0.53	-11.57
Last 5	15:13:11	900.02	13.95	7.10	387.50	1.44	3.56	0.33	-15.46
Last 5	15:18:11	1200.02	13.98	7.14	388.93	1.26	3.57	0.27	-20.27
Last 5	15:23:11	1500.02	14.08	7.16	388.26	0.87	3.57	0.23	-24.82
Variance 0			0.16	0.03	5.89			-0.19	-3.89
Variance 1			0.03	0.03	1.43			-0.06	-4.82
Variance 2			0.10	0.02	-0.67			-0.05	-4.54

#### Notes

One 250-mL bottle for chloride and sulfate (EPA 300.0). Total depth: 31.45 ft

Date: 2019-01-11 11:38:18

Project Information:		Pump Information:	
Operator Name	Grant Walter	Pump Model/Type	Alexis Peristaltic
Project Name	Plant Hammond	Tubing Diameter	0.17 in
Site Name	Hammond-Huffaker	Tubing Length	19.5 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-8	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.1770367 L
Well Total Depth	24.4 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	9.79 ft	Total Volume Pumped	6 L

Low-Flow S	ampling Stabili:	zation Summar	y						
	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	11:04:33	300.07	13.93	6.99	596.02	8.75	11.56	0.24	74.64
Last 5	11:09:33	600.01	14.42	7.03	593.30	8.05	11.68	0.19	70.07
Last 5	11:14:33	900.00	14.91	7.04	588.61	7.17	11.77	0.16	66.26
Last 5	11:24:33	1499.98	14.96	7.06	575.24	5.42	11.82	0.15	60.40
Last 5	11:29:33	1799.97	15.23	7.07	569.84	4.68	11.82	0.13	57.37
Variance 0			0.49	0.00	-4.69			-0.03	-3.81
Variance 1			0.05	0.02	-13.37			-0.01	-5.87
Variance 2			0.27	0.01	-5.40			-0.01	-3.02

#### Notes

One 120-mL bottle for Chloride (EPA 300.0). Total depth = 27.65 ft

Grab Samples GWC-8 Grab

11:20 reading did not appear, glitch on SmarTroll. Live readings recorded:										
Temp C	pН	Sp Cond	Turb	DTW	RDO	ORP				
15.01	7.05	580.50	5.77	11.80	0.15	62.70				

# APPENDIX C Statistical Analyses

## Table C-1 Detection Monitoring Prediction Limit Comparison Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

Parameter	Well ID	Upper PL	Lower PL	Mar 14-16, 2018	May 15-16, 2018	Oct 3-5, 2018	Dec 11, 2018	Jan 11, 2019
		Purpose of Sa	mpling Event:	Detection	Verification	Detection	Verification	Verification
Boron (mg/L)	GWC-10	0.048	-	0.038 J		0.038 J		
Boron (mg/L)	GWC-18	0.15	-	0.12		0.15		
Boron (mg/L)	GWC-19	0.21	-	0.17		0.17		
Boron (mg/L)	GWC-20	0.05	-	ND		0.017 J		
Boron (mg/L)	GWC-21	0.14	-	0.025 J		0.029 J		
Boron (mg/L)	GWC-22	0.085	-	0.07		0.065		
Boron (mg/L)	GWC-23	0.15	-	0.051		0.039 J		
Boron (mg/L)	GWC-5	0.073	-	0.047		0.066		
Boron (mg/L)	GWC-6	0.043	-	0.044	0.042	0.038 J		
Boron (mg/L)	GWC-7	0.073	-	0.053		0.048		
Boron (mg/L)	GWC-8	0.028	-	0.024 J		0.047 J		
Boron (mg/L)	GWC-9	0.05	-	0.013 J		0.017 J		
Calcium (mg/L)	GWC-10	50.4	-	52.4	48.4	51.2	49.3	
Calcium (mg/L)	GWC-18	44.2	-	45.9	40	39.6		
Calcium (mg/L)	GWC-19	50.2	-	43.3		43.7		
Calcium (mg/L)	GWC-20	61.1	-	53.4		52.7		
Calcium (mg/L)	GWC-21	82.7	-	62.8		48.6		
Calcium (mg/L)	GWC-22	52.7	-	46.8		50.4		
Calcium (mg/L)	GWC-23	42.1	-	39.8		39.3		
Calcium (mg/L)	GWC-5	92.1	-	78.1		73		
Calcium (mg/L)	GWC-6	68.2	-	66.9		65.5		
Calcium (mg/L)	GWC-7	73.5	-	43.4		26.1		
Calcium (mg/L)	GWC-8	76.2	-	58.8		264	64.3	
Calcium (mg/L)	GWC-9	38.4	-	35.3		37.8		
Chloride (mg/L)	GWC-10	1.9	-	2.0	1.4	2.1	1.9	
Chloride (mg/L)	GWC-18	1.8	-	1.5		1.5		
Chloride (mg/L)	GWC-19	2.5	-	1.9		2.0		
Chloride (mg/L)	GWC-20	2.1	-	1.9		2.2	1.8	
Chloride (mg/L)	GWC-21	3.5	-	3.6	3.2	2.4		
Chloride (mg/L)	GWC-22	2.0	-	1.7		1.7		
Chloride (mg/L)	GWC-23	2.1	-	1.6		1.6		
Chloride (mg/L)	GWC-5	4.0	-	3.2		3.2		
Chloride (mg/L)	GWC-6	2.3	-	2.1		2.2		
Chloride (mg/L)	GWC-7	2.3	-	1.9		2.0		
Chloride (mg/L)	GWC-8	2.1	-	2.1		2.3	2.3	$2.8^{(4)}$
Chloride (mg/L)	GWC-9	1.7	-	1.3		1.6		
Fluoride (mg/L)	GWC-10	0.18	-	ND		0.16 J		
Fluoride (mg/L)	GWC-18	0.21	-	ND		0.21 J		
Fluoride (mg/L)	GWC-19	0.27	-	ND		0.21 J		
Fluoride (mg/L)	GWC-20	0.17	-	ND		0.17 J		
Fluoride (mg/L)	GWC-21	0.26	-	ND		0.15 J		
Fluoride (mg/L)	GWC-22	0.13	-	ND		0.14 J		
Fluoride (mg/L)	GWC-23	0.15	-	ND		0.18 J		
Fluoride (mg/L)	GWC-5	0.33	-	ND		0.16 J		
Fluoride (mg/L)	GWC-6	0.33	-	ND		0.17 J		
Fluoride (mg/L)	GWC-7	0.56	-	0.37		0.19 J		
Fluoride (mg/L)	GWC-8	0.36	-	0.4	0.32	0.28 J		
Fluoride (mg/L)	GWC-9	0.14	-	ND		0.18 J		

 Table C-1

 Detection Monitoring Prediction Limit Comparison

 Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

Parameter	Well ID	Upper PL	Lower PL	Mar 14-16, 2018	May 15-16, 2018	Oct 3-5, 2018	Dec 11, 2018	Jan 11, 2019
		Purpose of Sa	mpling Event:	Detection	Verification	Detection	Verification	Verification
pH (s.u.)	GWC-10	7.7	7.0	7.1		7.3		
pH (s.u.)	GWC-18	7.8	7.4	7.5		7.6		
pH (s.u.)	GWC-19	7.7	7.2	7.5		7.4		
pH (s.u.)	GWC-20	7.6	7.2	7.1	7.2	7.1	7.2	
pH (s.u.)	GWC-21	7.7	5.8	7.0		6.3		
pH (s.u.)	GWC-22	7.9	7.5	7.5		7.5		
pH (s.u.)	GWC-23	7.5	6.9	7.1		7.0		
pH (s.u.)	GWC-5	7.2	6.5	6.7		6.5		
pH (s.u.)	GWC-6	7.4	6.7	6.8		6.9		
pH (s.u.)	GWC-7	6.6	5.5	6.1		5.9		
pH (s.u.)	GWC-8	7.6	7.2	7.3		7.2		
pH (s.u.)	GWC-9	7.3	6.3	6.7		6.4		
Sulfate (mg/L)	GWC-10	33.0	-	33.9	29.1	29.5		
Sulfate (mg/L)	GWC-18	15.1	-	11.7		10.6		
Sulfate (mg/L)	GWC-19	21.4	-	14.8		15.9		
Sulfate (mg/L)	GWC-20	37.4	-	37.5 J		38.9	41.8 J	
Sulfate (mg/L)	GWC-21	53	-	38		19.3		
Sulfate (mg/L)	GWC-22	12.0	-	8.2		6.4		
Sulfate (mg/L)	GWC-23	43	-	14		9.3		
Sulfate (mg/L)	GWC-5	166	-	77.4		90.3		
Sulfate (mg/L)	GWC-6	128	-	93.6		137	110 J	
Sulfate (mg/L)	GWC-7	178	-	118		167		
Sulfate (mg/L)	GWC-8	63.3	-	36.8		45.4		
Sulfate (mg/L)	GWC-9	77.6	-	57.8		81.9	73.6 J	
TDS (mg/L)	GWC-10	268	-	216		222		
TDS (mg/L)	GWC-18	427	-	199		235		
TDS (mg/L)	GWC-19	396	-	213		231		
TDS (mg/L)	GWC-20	282	-	216		256		
TDS (mg/L)	GWC-21	382	-	219		152		
TDS (mg/L)	GWC-22	324	-	190		215		
TDS (mg/L)	GWC-23	330	-	169		210		
TDS (mg/L)	GWC-5	542	-	390		385		
TDS (mg/L)	GWC-6	364	-	317		371 ⁽⁴⁾		
TDS (mg/L)	GWC-7	376	-	254		287		
TDS (mg/L)	GWC-8	268	-	263 J		292 ⁽⁴⁾		
TDS (mg/L)	GWC-9	318	-	280		236		

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 compa to both the upper and lower PL.

(3) Due to the uncertainity associated with estimated values, J qualified results are not considered when evaluating PL exceedances.

(4) Identified SSI addressed with an alternate source demonstration, as disscussed in section 2.2 and section 4.2 of included report.

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



Constituent: Boron Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill  ${\rm Sanitas^{\rm nu}}$  v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.



Time Series

Constituent: Boron Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

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



Constituent: Boron Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.





Constituent: Boron Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.



Constituent: Calcium Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: Calcium Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: Calcium Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.





Constituent: Calcium Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.

Time Series



Constituent: Chloride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill



Constituent: Chloride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: Chloride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.





Constituent: Chloride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.

#### 0.6 GWA-1 (bg) ٠ 0.48 GWA-11 (bg) GWA-2 (bg) 0.36 mg/L GWA-3 (bg) 0.24 • GWA-4 (bg) 0.12 Ω 3/22/16 3/27/17 10/4/18 9/23/16 9/28/17 4/1/18

Time Series

Constituent: Fluoride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas  $^{\rm IN}$  v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.



Time Series

Constituent: Fluoride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

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



Constituent: Fluoride Analysis Run 1/7/2019 3:58 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants. Hollow symbols indicate censored values.

Time Series



Constituent: Fluoride Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: pH Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill



Time Series

Constituent: pH Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: pH Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.





Constituent: pH Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants.

400 GWA-1 (bg) ٠ 320 GWA-11 (bg) GWA-2 (bg) 240 mg/L GWA-3 (bg) 160 • GWA-4 (bg) 80 0 💺 3/22/16 9/23/16 3/27/17 9/28/17 4/1/18 10/4/18

Time Series

Constituent: Sulfate Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill



Constituent: Sulfate Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: Sulfate Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas[™] v.9.6.05 Software licensed to Geosyntec Consultants.

Time Series



Constituent: Sulfate Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill



Time Series



Constituent: Total Dissolved Solids Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill



Constituent: Total Dissolved Solids Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.



Constituent: Total Dissolved Solids Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Sanitas™ v.9.6.05 Software licensed to Geosyntec Consultants.





Constituent: Total Dissolved Solids Analysis Run 1/7/2019 3:59 PM Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

## **Prediction Limit**

Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Printed 12/11/2018, 3:31 PM

					0					,	
<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
Boron (mg/L)	GWA-1	0.1	n/a	n/a	1 future	n/a	8	25	n/a	0.005912	NP Intra (normality) 1 of 3
Boron (mg/L)	GWA-11	0.04099	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWA-2	0.1012	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWA-3	0.1739	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWA-4	0.13	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-10	0.04831	n/a	n/a	1 future	n/a	8	12.5	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-18	0.1451	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-19	0.2065	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-20	0.05	n/a	n/a	1 future	n/a	8	12.5	n/a	0.005912	NP Intra (normality) 1 of 3
Boron (mg/L)	GWC-21	0.1383	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-22	0.08459	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-23	0.151	n/a	n/a	1 future	n/a	8	12.5	sqrt(x)	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-5	0.07287	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-6	0.0426	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-7	0.07255	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-8	0.02841	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Boron (mg/L)	GWC-9	0.05	n/a	n/a	1 future	n/a	8	12.5	n/a	0.005912	NP Intra (normality) 1 of 3
Calcium (mg/L)	GWA-1	20.19	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWA-11	25.19	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWA-2	51.34	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWA-3	94.16	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWA-4	134.4	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-10	50.37	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-18	44.15	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-19	50.19	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-20	61.08	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-21	82.74	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-22	52.71	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-23	42.07	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-5	92.08	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-6	68.16	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-7	73.49	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-8	76.22	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Calcium (mg/L)	GWC-9	38.4	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWA-1	1.439	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWA-11	2.155	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWA-2	2.965	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWA-3	4.87	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWA-4	9.381	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-10	1.911	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-18	1.774	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-19	2.477	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-20	2.115	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-21	3.478	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-22	1.956	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-23	2.062	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-5	4.009	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-6	2.297	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-7	2.302	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Chloride (mg/L)	GWC-8	2.129	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3

## **Prediction Limit**

Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Printed 12/11/2018, 3:31 PM

			i lant i lanni	ond Ollent.	Georgia i owei	Company	Data. Hull			/11/2010, 5.511 1	
<u>Constituent</u>	<u>Well</u>	Upper Lim.	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	Method
Chloride (mg/L)	GWC-9	1.741	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWA-1	0.1916	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWA-11	0.1576	n/a	n/a	1 future	n/a	8	25	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWA-2	0.2205	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWA-3	0.4452	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWA-4	0.4912	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-10	0.1828	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-18	0.2117	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-19	0.2743	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-20	0.1713	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-21	0.2567	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-22	0.1258	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-23	0.1516	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-5	0.4427	n/a	n/a	1 future	n/a	8	12.5	sqrt(x)	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-6	0.3314	n/a	n/a	1 future	n/a	8	12.5	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-7	0.5601	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-8	0.3595	n/a	n/a	1 future	n/a	8	0	ln(x)	0.0006269	Param Intra 1 of 3
Fluoride (mg/L)	GWC-9	0.138	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
pH (s.u.)	GWA-1	7.401	6.544	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWA-11	7.072	6.353	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWA-2	7.296	6.549	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWA-3	7.285	6.185	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWA-4	7.15	6.318	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-10	7.705	6.985	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-18	7.768	7.419	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-19	7,739	7.229	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-20	7.559	7.174	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (su)	GWC-21	7 71	5 76	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH(su)	GWC-22	7 931	7 479	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	GWC-23	7.509	6.939	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH(su)	GWC-5	7 211	6 474	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
рн (s.u.) nH (s.u.)	GWC-6	7.364	6 671	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH(su)	GWC-7	6 641	5 454	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH(s.u.)	GWC-8	7 59	7 205	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH(su)	GWC-9	7.335	6.325	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
Sulfate (mg/L)	GWA-1	5 174	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWA-11	13 75	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWA-2	17.91	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWA-3	247 3	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWA-4	350.4	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)		33	n/a	n/a	1 future	n/a	8	0	n/a	0.005012	NP Intra (normality) 1 of 3
Sulfate (mg/L)	GWC-18	15.08	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-10	21.30	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-19	21.39	n/a	n/a	1 future	n/a	0	0	No	0.0000209	Param Intra 1 of 2
Sulfate (mg/L)	GWC 21	52	n/a	n/a	1 future	n/a	U Q	0	No	0.0000209	Param Intra 1 of 2
Suifate (mg/L)	GWC-21	ວວ 11.06	n/a	n/a	1 future	n/a	0	0	No	0.0006269	Paraminua 1 01 3
Suifate (mg/L)	GWC-22	11.90	n/a	n/a	1 future	n/a	0	0		0.0000209	MD Intro (normality) 1 -50
Sulfate (mg/L)	GWC-23	40	n/a	n/a	1 future	n/a	0	0	li/a No	0.000912	Derom Intro 1 of 2
Suifate (mg/L)	GWC-5	103.0	n/a	n/a	1 future	n/a	0	0	No	0.0006269	Paraminua 1 01 3
Suifate (mg/L)		127.0	n/a	n/a		n/a	ŏ	0	NO	0.0006269	Param Intra 1 of 3
Suitate (mg/L)	GVVC-/	1/8	n/a	n/a	Tuture	n/a	ŏ	U	INO	0.0006269	Param Intra 1 of 3

## **Prediction Limit**

Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill Printed 12/11/2018, 3:31 PM

					0					,	
<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
Sulfate (mg/L)	GWC-8	63.3	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-9	77.62	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWA-1	182.7	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWA-11	190.8	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWA-2	272.8	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWA-3	705.5	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWA-4	762.2	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWC-10	267.9	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWC-18	427	n/a	n/a	1 future	n/a	8	0	n/a	0.005912	NP Intra (normality) 1 of 3
Total Dissolved S	GWC-19	396.3	n/a	n/a	1 future	n/a	8	0	sqrt(x)	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWC-20	282.4	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWC-21	382	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWC-22	324	n/a	n/a	1 future	n/a	8	0	n/a	0.005912	NP Intra (normality) 1 of 3
Total Dissolved S	GWC-23	329.5	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWC-5	541.9	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWC-6	363.9	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWC-7	376.4	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWC-8	267.8	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Total Dissolved S	GWC-9	317.7	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3