



Prepared for

Georgia Power Company
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**2018 ANNUAL GROUNDWATER
MONITORING AND CORRECTIVE
ACTION REPORT
PLANT HAMMOND HUFFAKER ROAD LANDFILL**

Prepared by



engineers | scientists | innovators

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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.

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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 Regional Geology and Hydrogeologic Setting

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 Alternate Source Demonstrations

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 Detection Monitoring

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**.

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

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

where:

K = hydraulic conductivity

$$\frac{\Delta h}{\Delta l} = \text{hydraulic gradient} = \frac{(h_1 - h_2)}{L}$$

n = effective porosity

h_1 and h_2 = groundwater elevation at location 1 and 2

L = distance between location 1 and 2

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 [8.74×10^{-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
- ± 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

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 Statistical Methods

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.

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

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

4.2 Statistical Analysis Results

A summary of the Sanitas[™] 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**.

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

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TABLES

Table 1
Monitoring Well Network Summary
Plant 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 2
 Groundwater Sampling Event Summary for 2018
 Plant 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 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 3
 Summary of Groundwater Elevations
 Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

Well ID	Top of Casing Elevation (ft AMSL)	Mar 14, 2018		Oct 3, 2018	
		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 4
 Groundwater Flow Velocity Calculations - 2018
 Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

Measuring Points	Affiliated Landfill Parcels	h_1 (ft)	h_2 (ft)	Δh (ft)	Δl (ft)	$\Delta h/\Delta l$ (ft/ft)
<i>March 14, 2018 Groundwater Elevation Data</i>						
690 PCL and GWC-7	A & B	690	643.25	46.75	2,164	0.022
GWC-9 and 625 PCL	E	646.66	625	21.66	1,172	0.018
<i>October 3, 2018 Groundwater Elevation Data</i>						
690 PCL and GWC-7	A & B	690	642.13	47.87	2,186	0.022
GWC-9 and 625 PCL	E	644.90	625	19.90	1,061	0.019

				Averaged for 2018		
Measuring Points	Affiliated Landfill Parcels	K (ft/day)	n	$\Delta h/\Delta l$ (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

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

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)										
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)
pH ⁽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.

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

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)
pH ⁽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

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

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)	--
pH ⁽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	--

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

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)										
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)
pH ⁽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

Table 5
Summary of Groundwater Analytical Data
Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

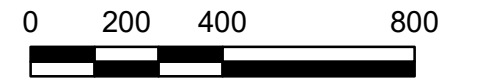
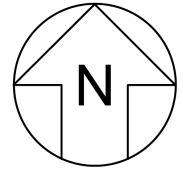
Well ID:	GWC-20	GWC-20	GWC-20	GWC-20	GWC-21	GWC-21	GWC-21	GWC-22	GWC-22	GWC-22
Sample Date:	3/16/2018	5/15/2018	10/5/2018	12/11/2018	3/15/2018	5/15/2018	10/4/2018	3/15/2018	5/15/2018	10/4/2018
Parameter ^(1,2)										
Boron	ND	--	ND (0.017 J)	--	ND (0.025 J)	--	ND (0.029 J)	0.07	--	0.065
Calcium	53.4	--	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)
pH ⁽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
 Summary of Groundwater Analytical Data
 Plant Hammond, Huffaker Road Landfill, Floyd County, Georgia

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

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SCALE IN FEET

SITE LOCATION MAP

GEORGIA POWER COMPANY
PLANT HAMMOND HUFFAKER ROAD LANDFILL
ROME, FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

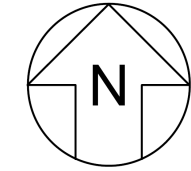
Prepared By: 

**FIGURE
1**



KENNESAW, GA

JANUARY 2019

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LEGEND

-  Compliance Monitoring Well
-  Landfill Underdrain Sample Point



SCALE IN FEET

WELL LOCATION MAP

GEORGIA POWER COMPANY
PLANT HAMMOND HUFFAKER ROAD LANDFILL
ROME, FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

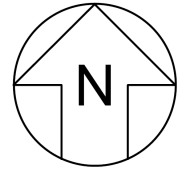
Prepared By:  Geosyntec
consultants

**FIGURE
2**




KENNESAW, GA

JANUARY 2019

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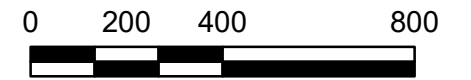


LEGEND

-  Compliance Monitoring Well and Groundwater Elevation (14 March 2018)
-  Groundwater Elevation Iso-Contour (ft AMSL)
-  Approximate Groundwater Flow Direction



Notes:
 1. Aerial Photograph Google Earth, February 2017.
 2. Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88.



SCALE IN FEET

**POTENTIOMETRIC SURFACE
 CONTOUR MAP - MARCH 2018**

GEORGIA POWER COMPANY
 PLANT HAMMOND HUFFAKER ROAD LANDFILL
 ROME, FLOYD COUNTY, GEORGIA

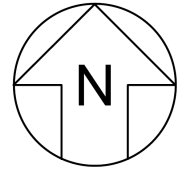
Prepared For:  Georgia Power

Prepared By:  Geosyntec
 consultants




**FIGURE
 3**

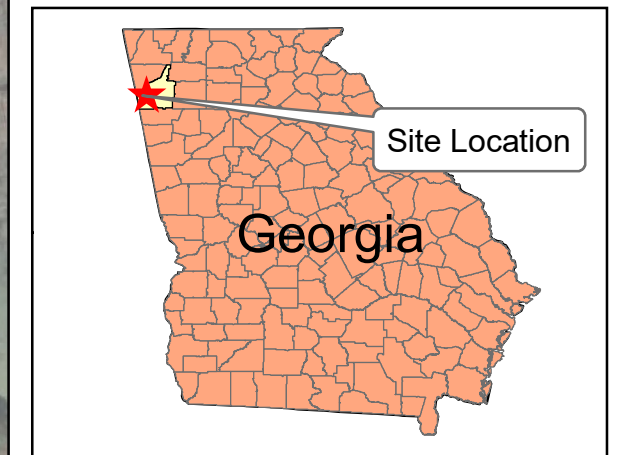
KENNESAW, GA JANUARY 2019

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LEGEND

-  Compliance Monitoring Well and Groundwater Elevation (3 October 2018)
-  Groundwater Elevation Iso-Contour (ft AMSL)
-  Approximate Groundwater Flow Direction



- Notes:
1. Aerial Photograph Google Earth, February 2017.
 2. Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88.



**POTENTIOMETRIC SURFACE
CONTOUR MAP - OCTOBER 2018**

GEORGIA POWER COMPANY
PLANT HAMMOND HUFFAKER ROAD LANDFILL
ROME, FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

**FIGURE
4**

KENNESAW, GA JANUARY 2019

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

Geosyntec 
consultants

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

A handwritten signature in black ink that reads "Herwig Goldmund".

Herwig Goldmund, Ph.D.
Senior Scientist

A handwritten signature in black ink that reads "Whitney B. 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).



Seal and Signature

4/16/2018

Date

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Figure 3	Time Series Chart – TDS at Upgradient and Select Downgradient Wells
Figure 4	TDS Concentrations and Groundwater Levels at Select Wells

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

LIST OF ACRONYMS

ASD	Alternate Source Demonstration
B	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

1. INTRODUCTION

1.1 Purpose

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 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."

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

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 1×10^{-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 1×10^{-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 versus 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 Onsite Historical Operations

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.

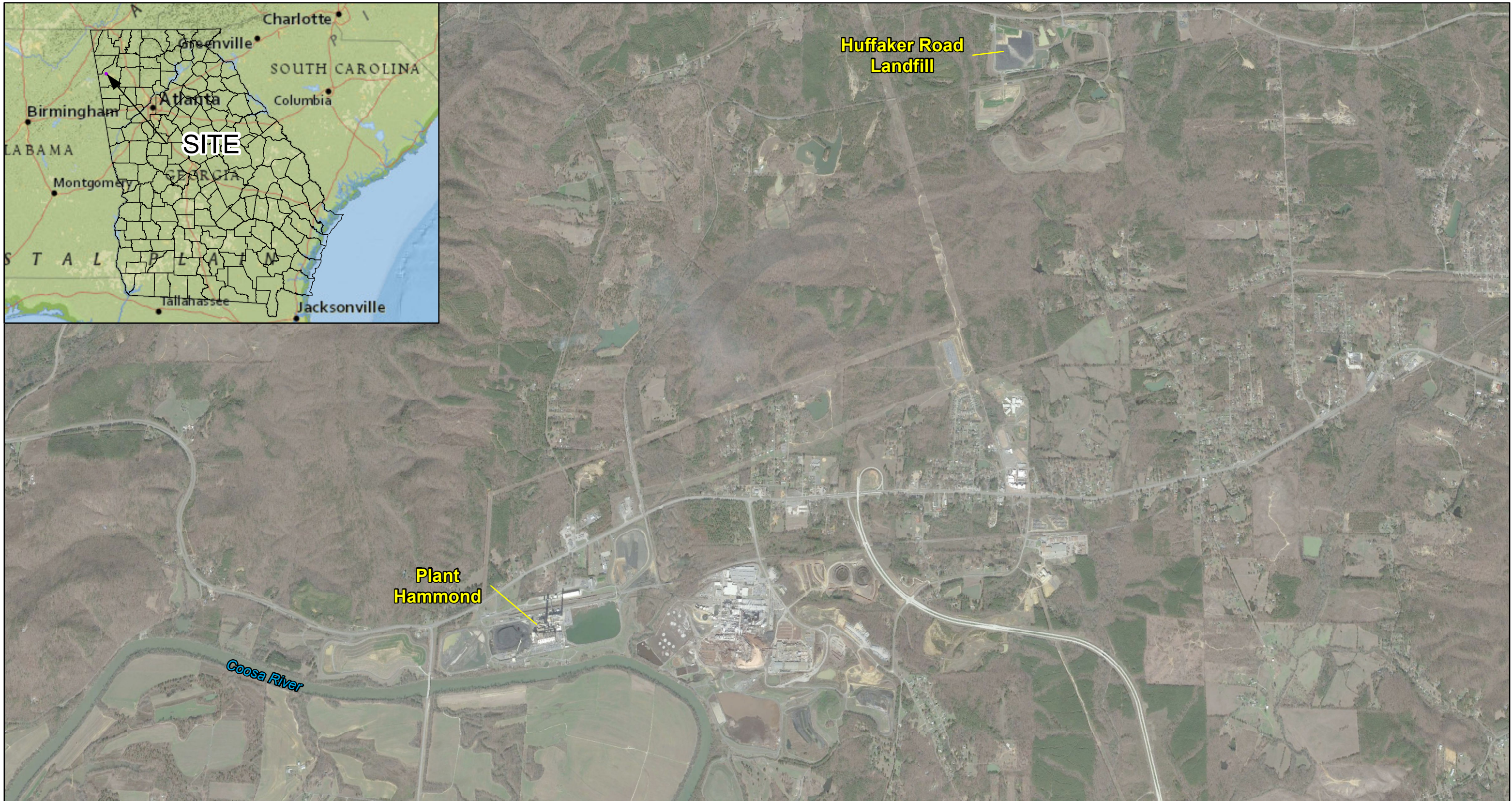
- Upgradient Conditions:
 - Upgradient wells GWA-3 and GWA-4 have higher concentrations of TDS compared to the downgradient wells GWC-6 and GWC-8. The historical mining operation located upgradient of the landfill has been identified as the alternative source of TDS.
 - The fluctuations in TDS concentrations, 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 versus 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.



0 650 1,300 2,600
Feet

Site Location Map
Georgia Power Company
Huffaker Road Landfill
Rome, Floyd County, Georgia

Geosyntec
consultants

Kennesaw, GA

April 2018

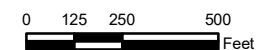
Figure

1



- Legend**
- Approximate Landfill Boundary
 - ◆ Monitoring Well

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



Site Layout & Monitoring Well Locations

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

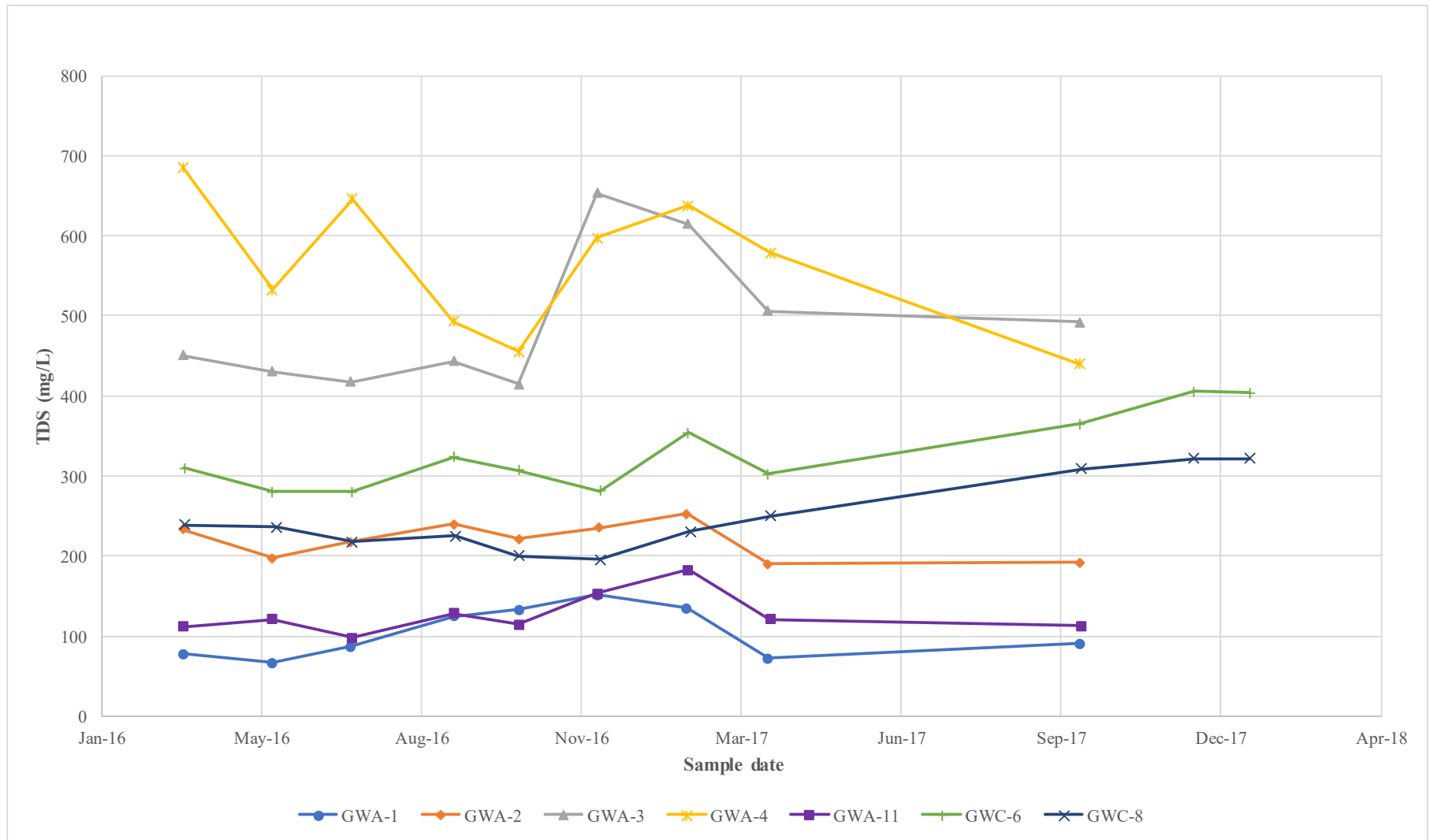
Geosyntec
consultants

Kennesaw, GA

April 2018

Figure

2



**Time Series Chart -
TDS at Upgradient and Select Downgradient Wells**

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

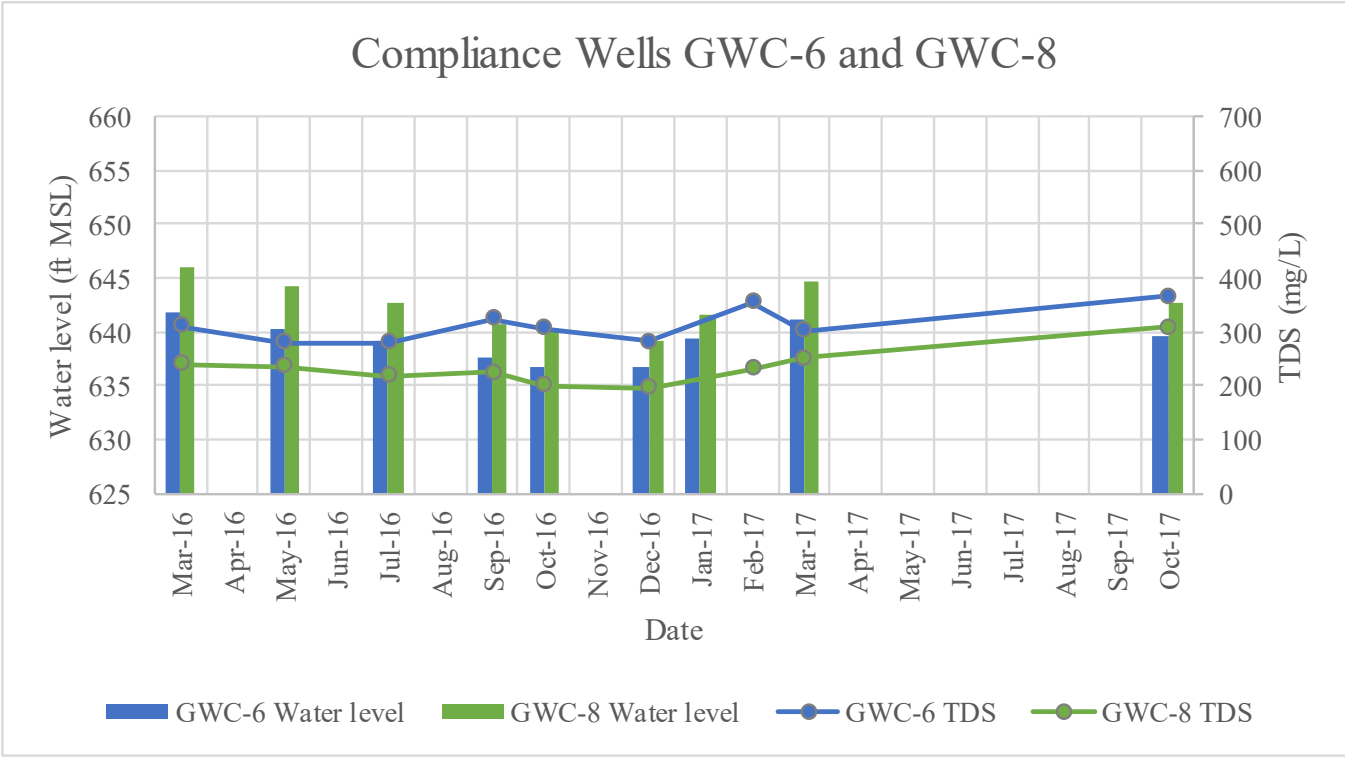
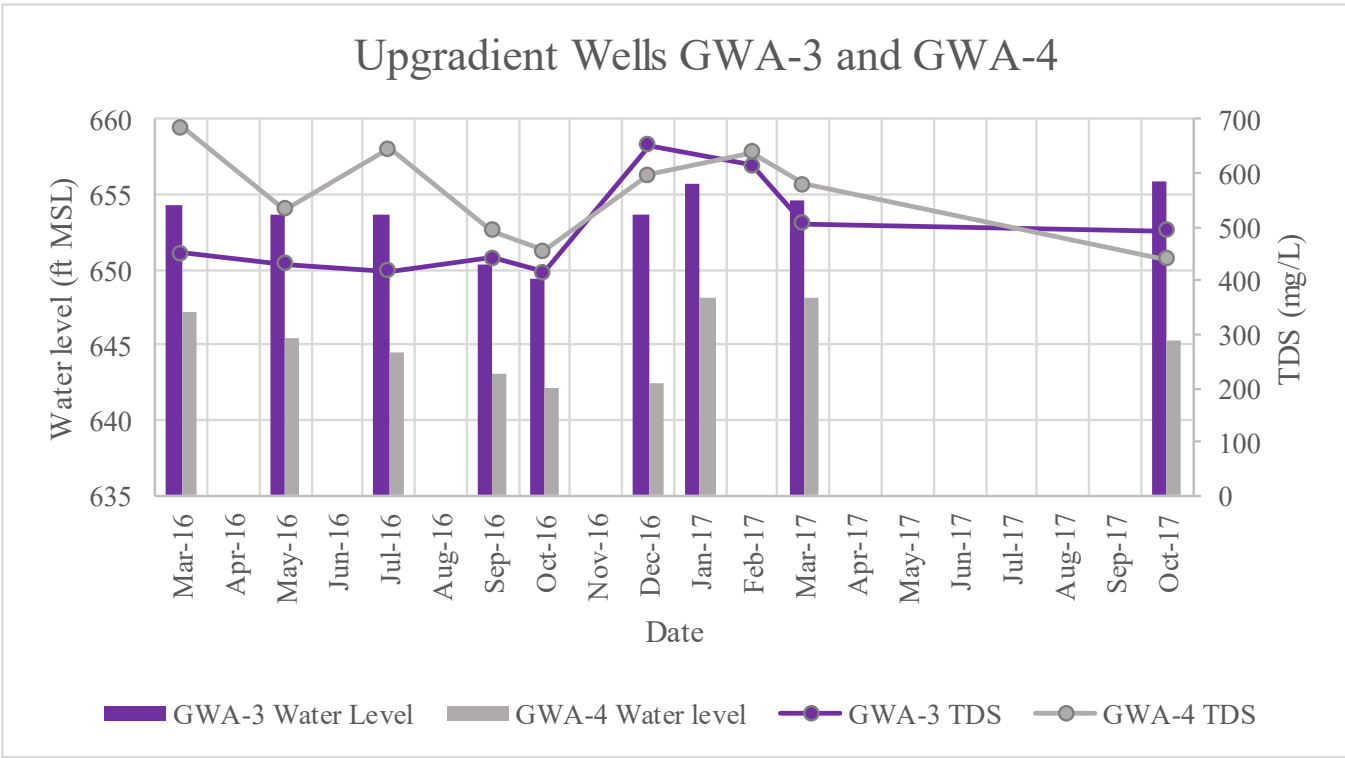
Geosyntec
consultants

Figure

3

Kennesaw, GA

March 2018



TDS Concentrations and Groundwater Levels at Select Wells

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



Figure

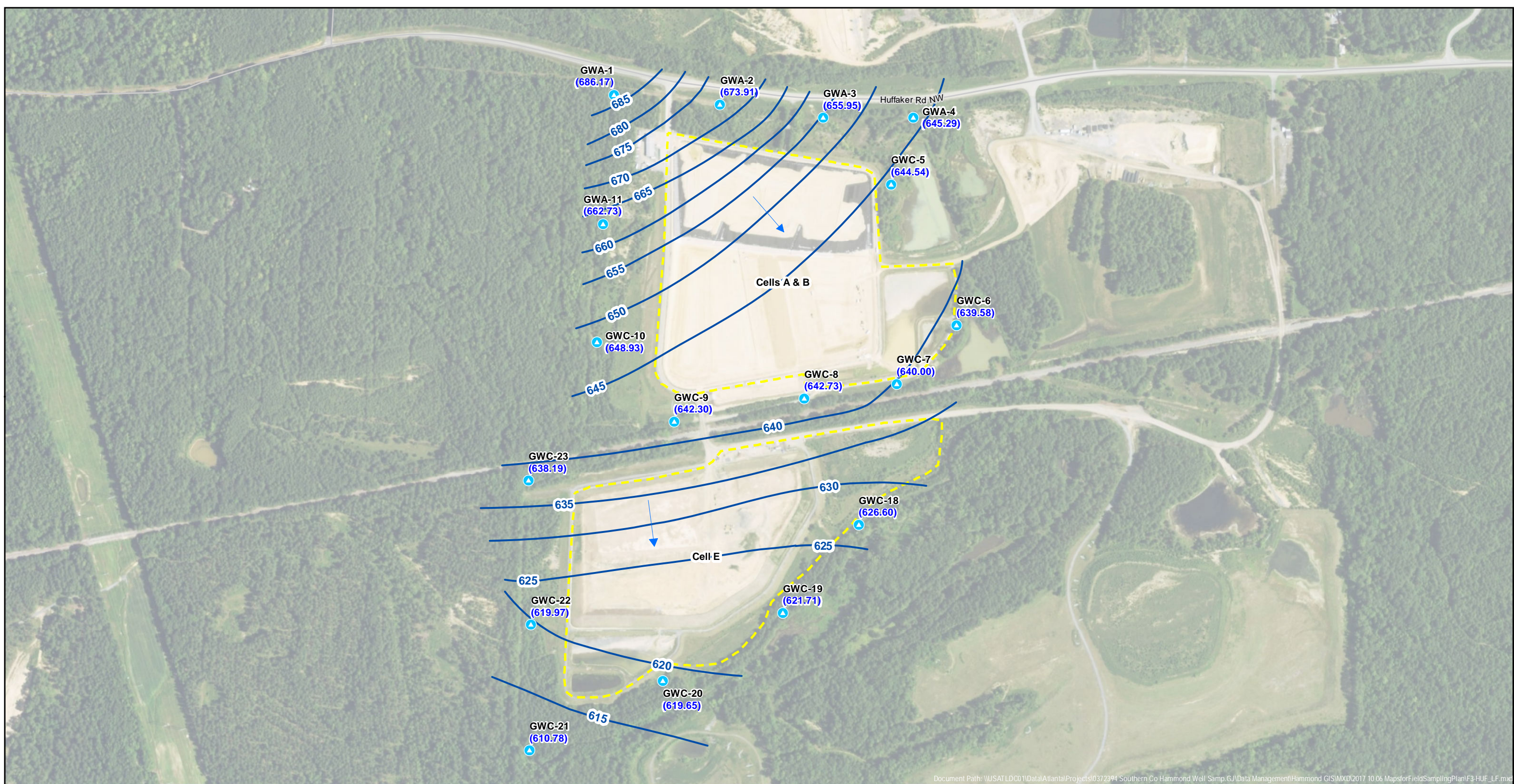
4

Kennesaw, GA

March 2018

APPENDIX A

October 2017 Potentiometric Surface
Contour Map from 2017 Annual Report



Document Path: W:\SATLDC01\Data\Atlanta\Projects\10372394 Southern Co Hammond Well_Samp.GJ\Data Management\Hammond GIS\MXD\2017 10 06 Maps\forFieldSamplingPlan\F3-HUF_LF.mxd

Legend

- ▲ Monitoring Well
- Apparent Potentiometric Surface Contour
- Groundwater Flow Direction
- Landfill Boundary (Approximate)
- Roads

(621.71) = Groundwater Elevation
(10/02/17, Feet Above Mean Sea Level, Ft MSL)

N

0 250 500 1,000 1,500 2,000
Feet

1 inch = 500 feet

**Environmental Resources
Management**

FOR

Georgia Power Company

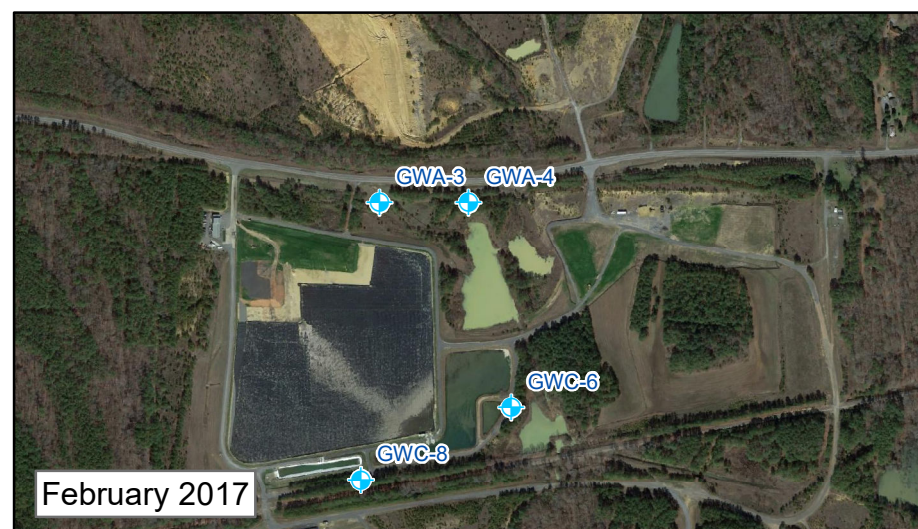
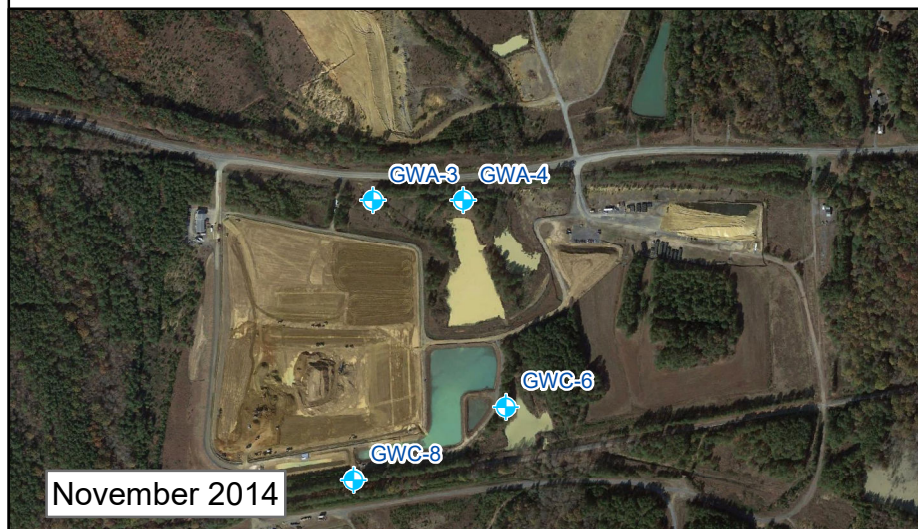
SCALE	DRAWING NUMBER	SHEET	CONTD	REV
As Shown	F3-HUF_LF_GW_102017	2	As Shown	0

FIGURE 3

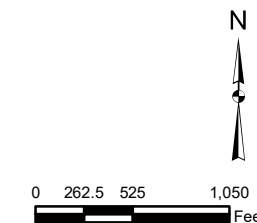
POTENTIOMETRIC SURFACE
CONTOUR MAP - OCTOBER 2017
PLANT HAMMOND HUFFAKER ROAD LANDFILL
ROME, FLOYD COUNTY, GEORGIA

APPENDIX B

Historical Aerial Photographs



Note:
1. Aerial Photograph from Google Earth



Historical Aerial Photographs

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

Geosyntec
consultants

**Figure
B-1**

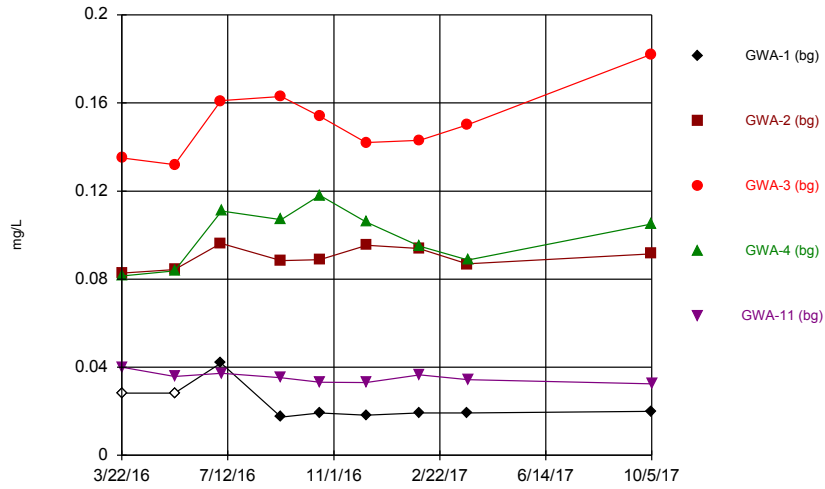
Kennesaw, GA

March 2018

APPENDIX C

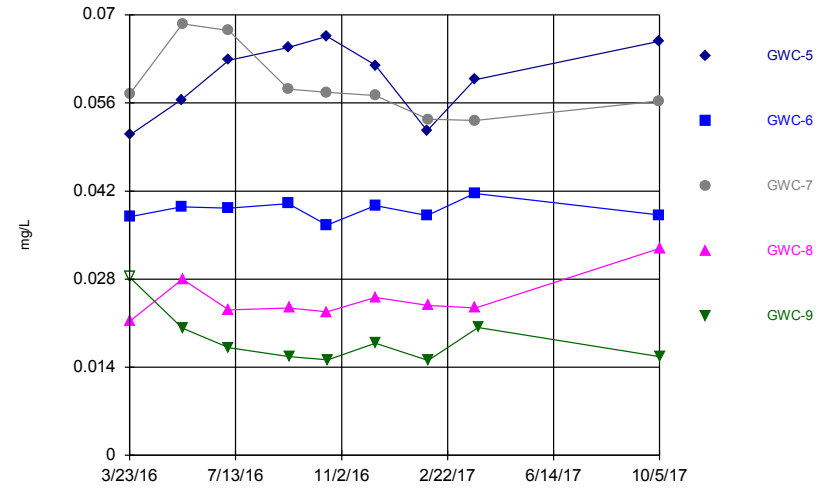
Time Series from 2017 Annual Report

Time Series



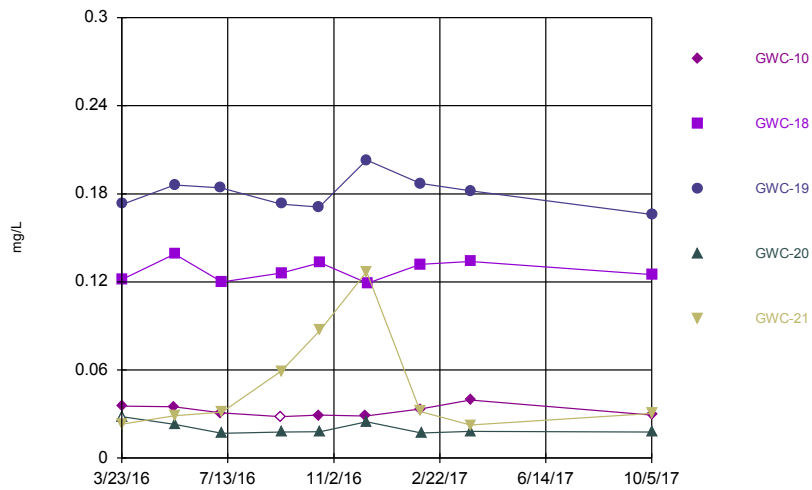
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Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Time Series



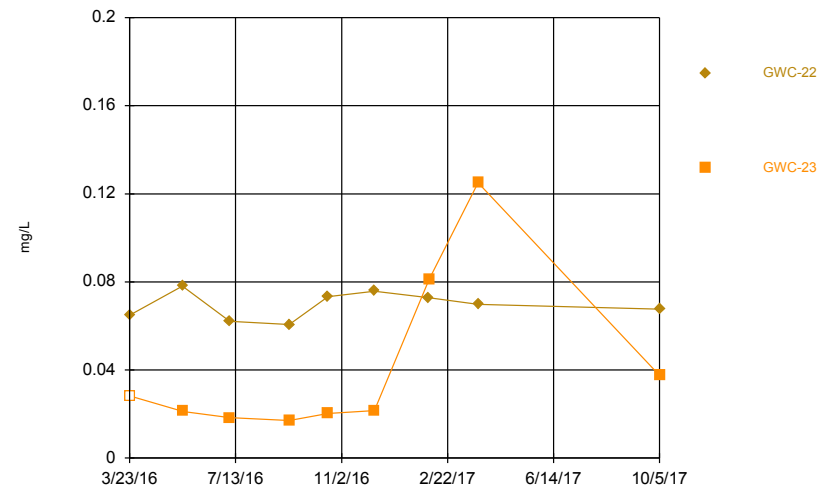
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Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Time Series



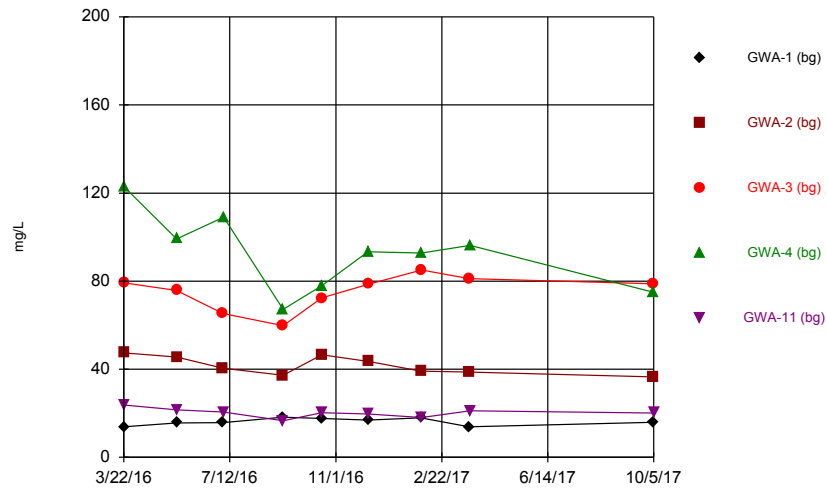
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Time Series



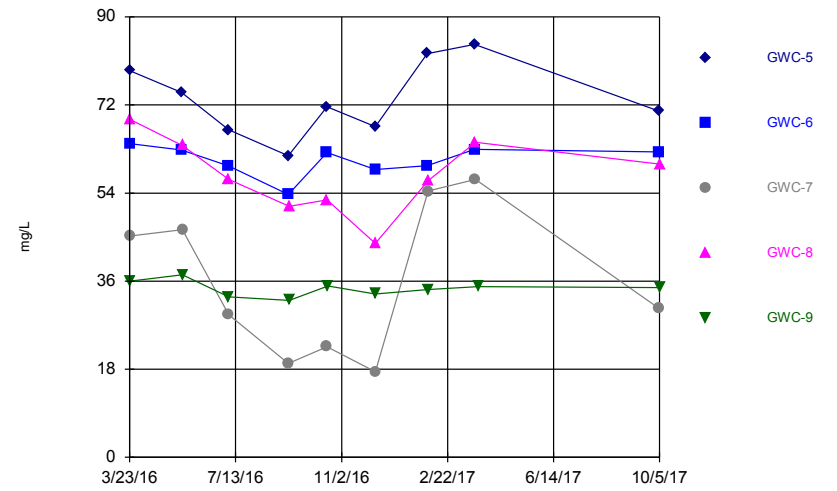
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Time Series



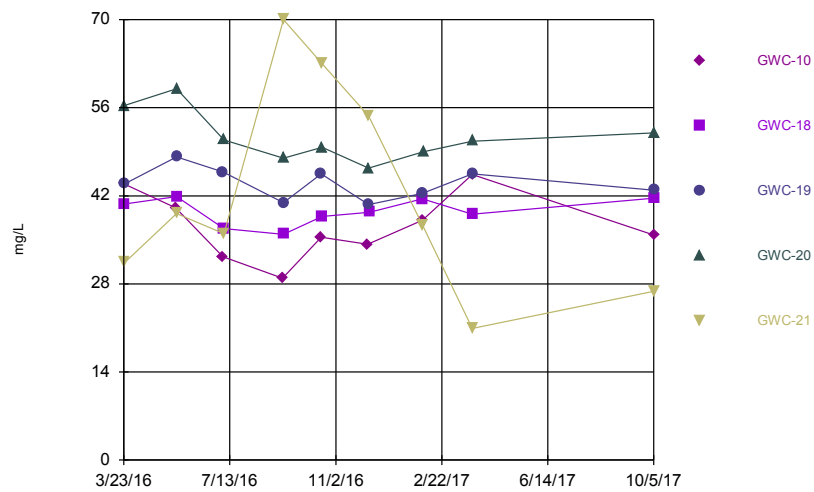
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Time Series



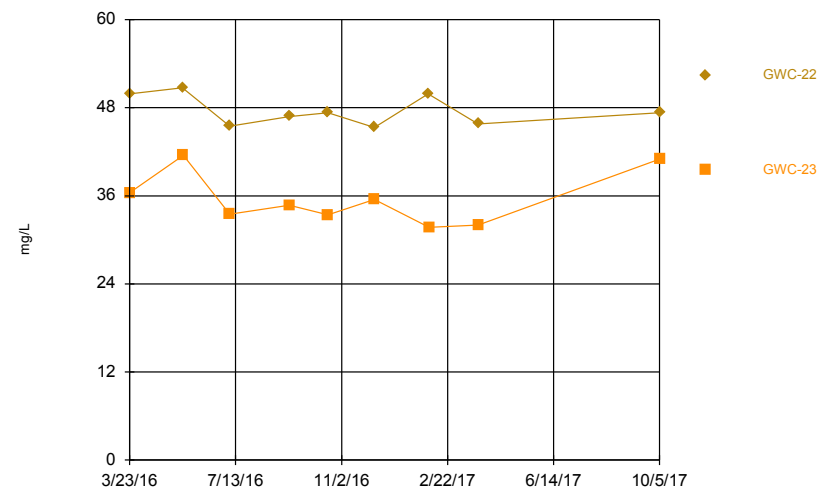
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Time Series



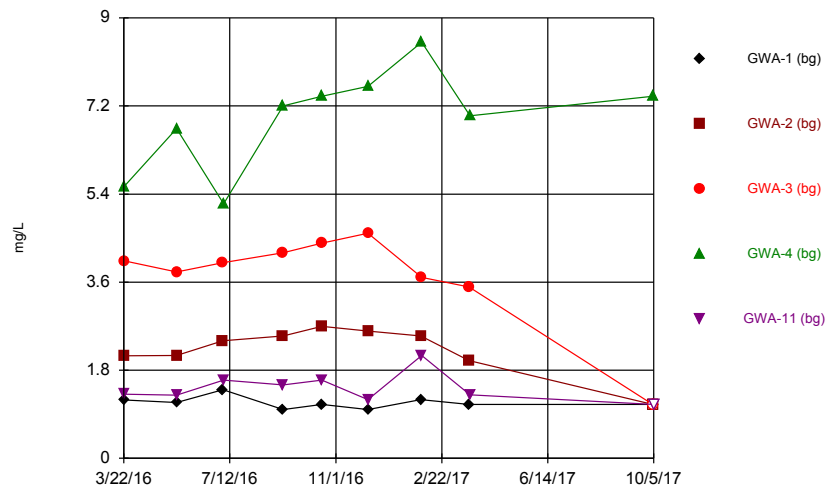
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Time Series



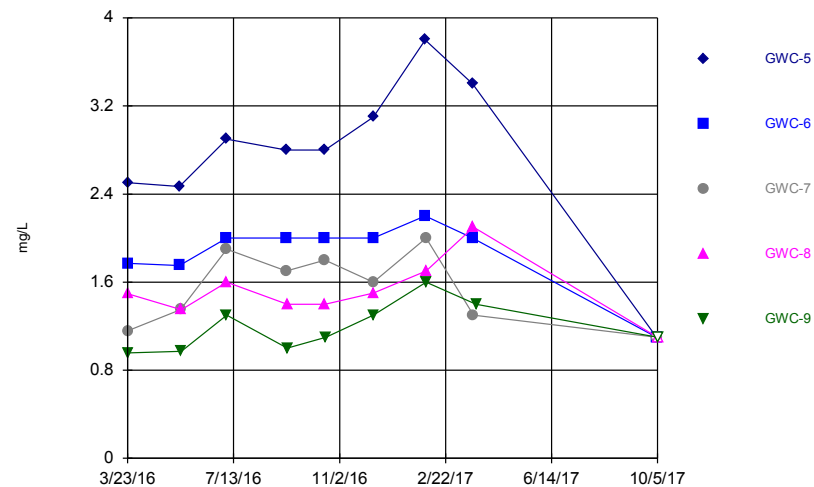
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Time Series



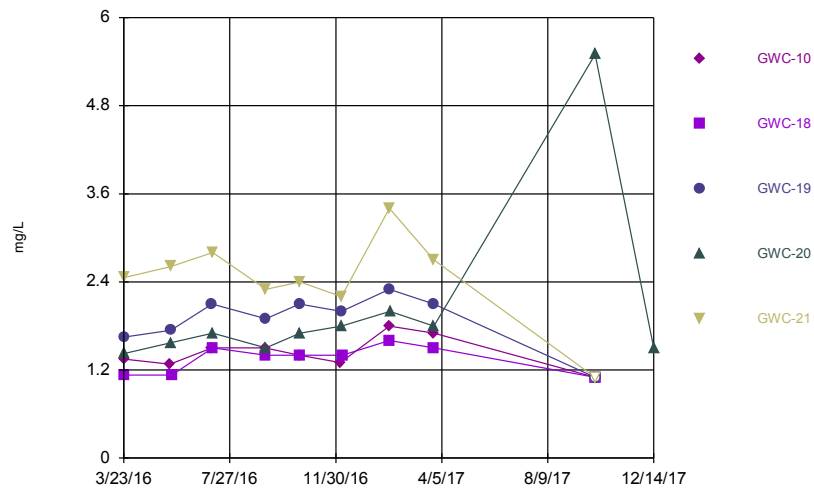
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Time Series



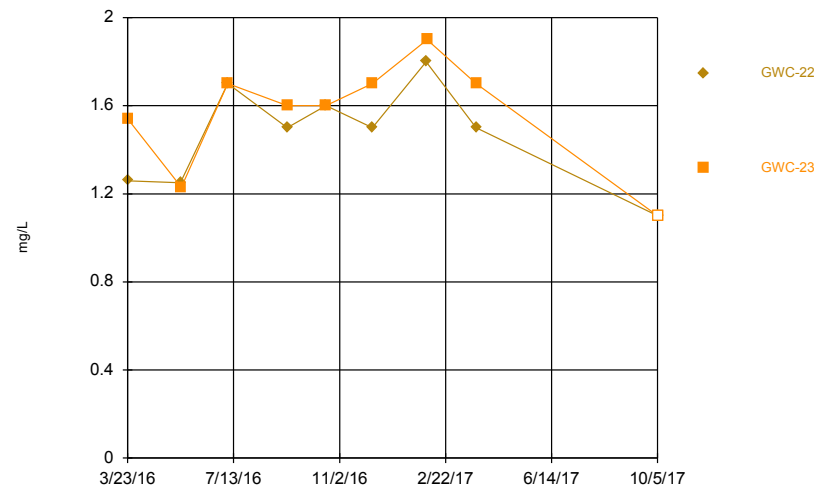
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Time Series



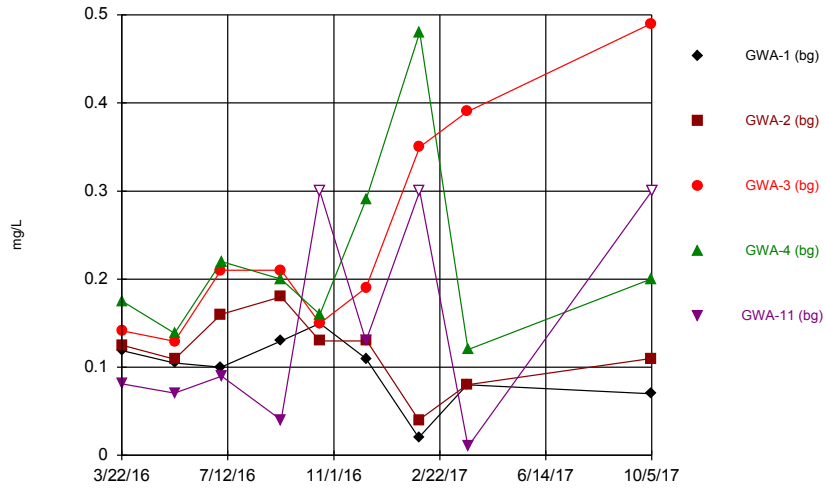
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Time Series



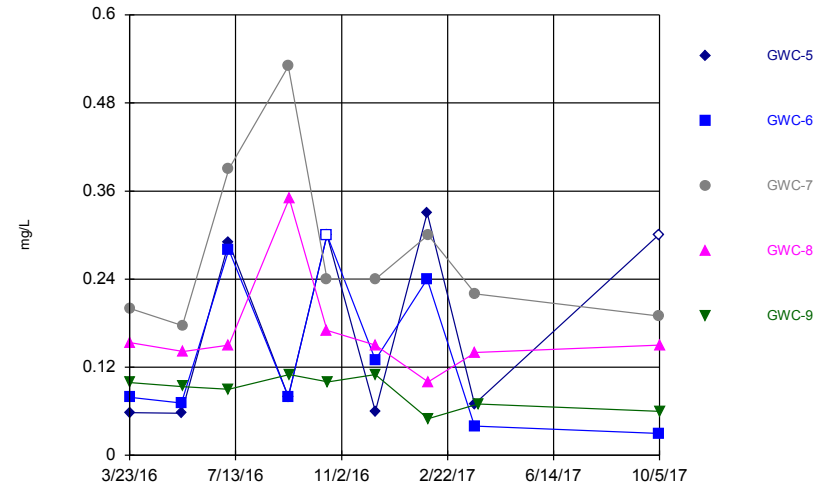
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Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Time Series



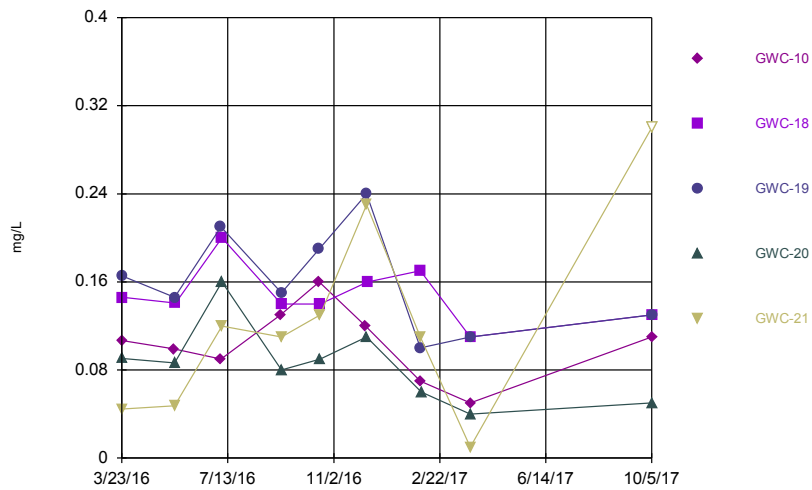
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Time Series



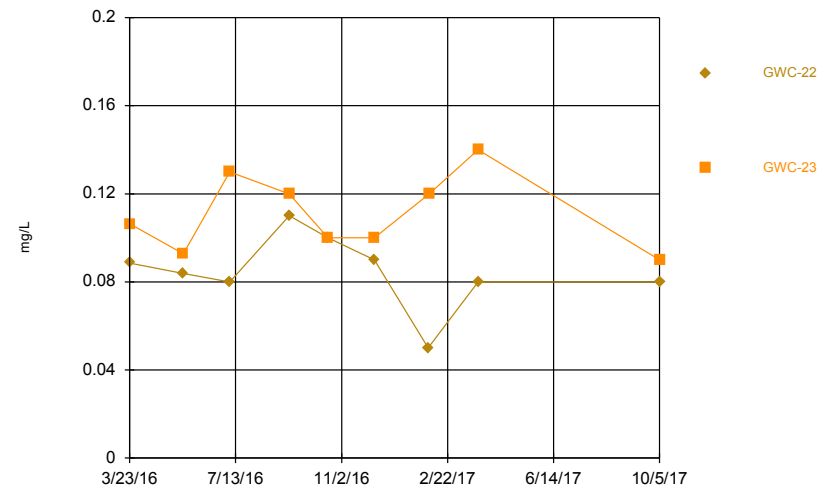
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Time Series



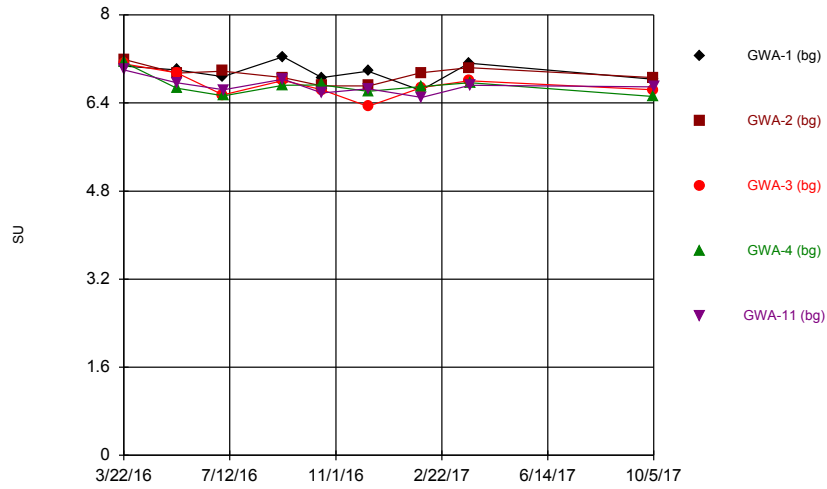
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Time Series



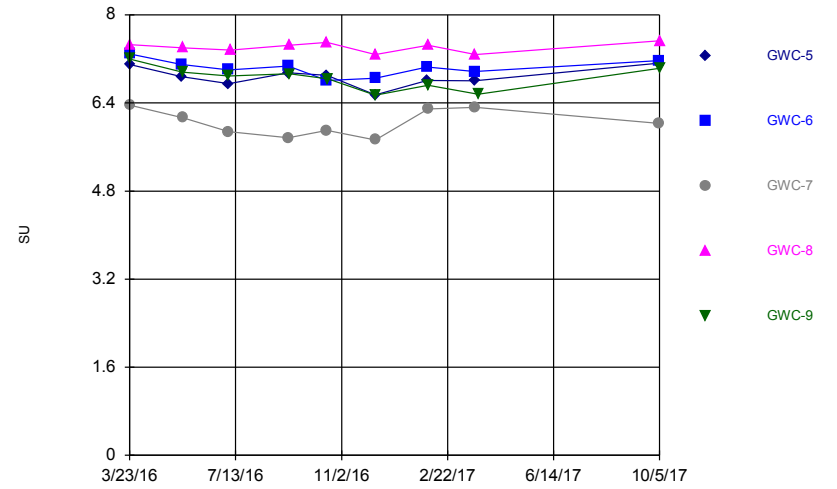
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Time Series



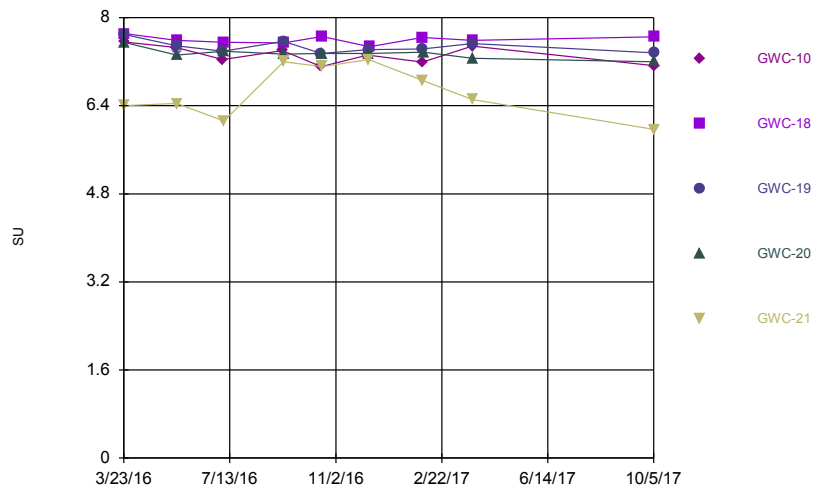
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Time Series



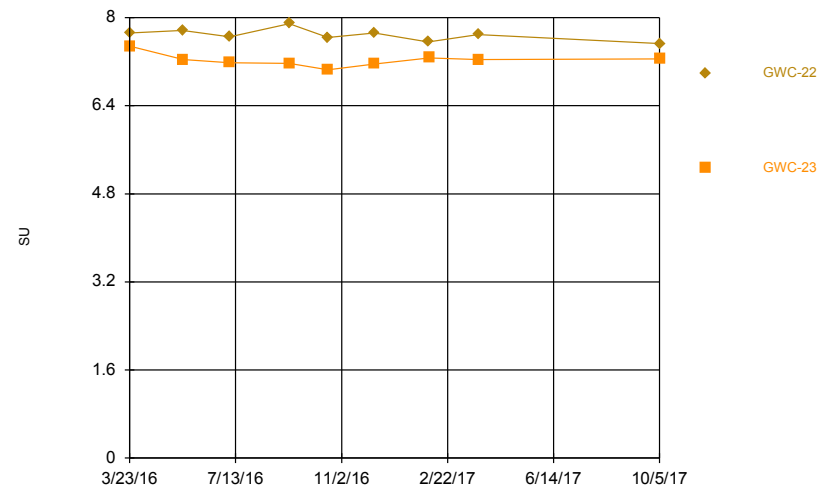
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Time Series



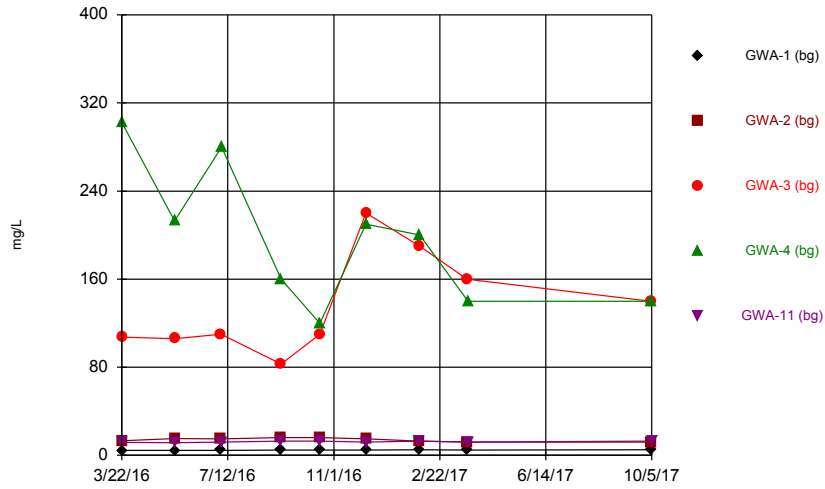
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Time Series



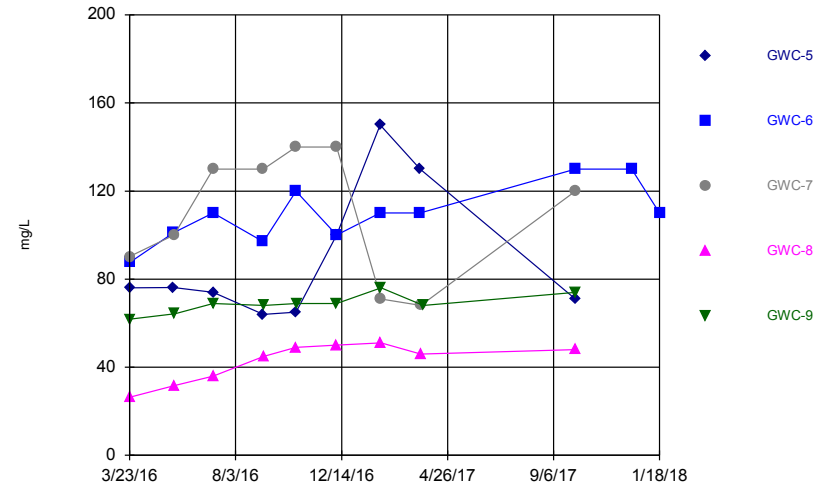
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Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Time Series



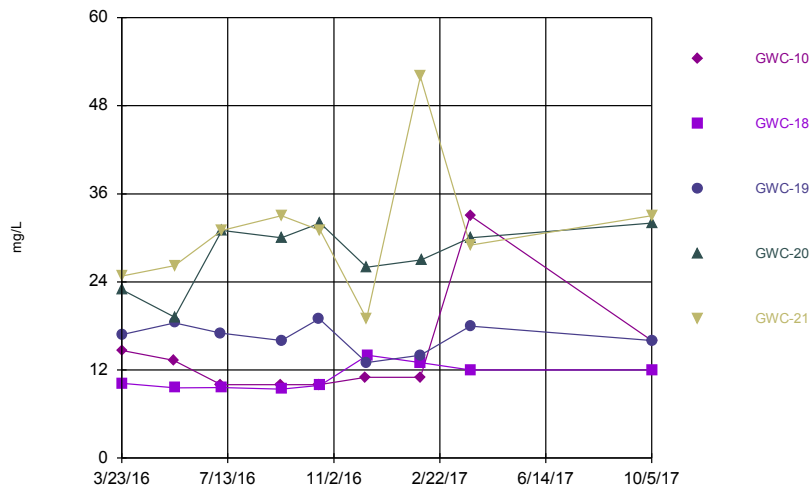
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Time Series



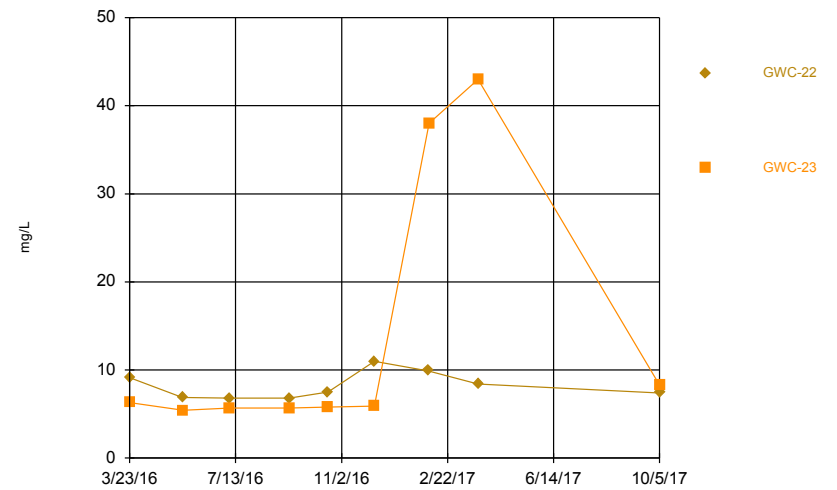
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Time Series



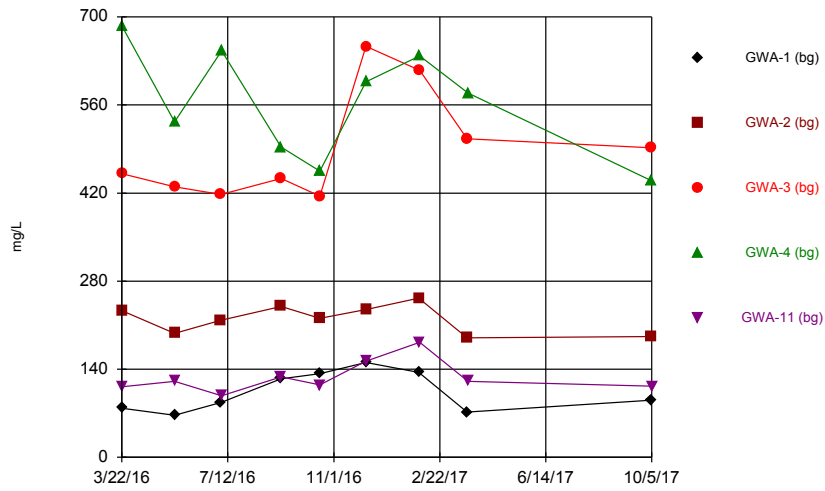
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 Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Time Series



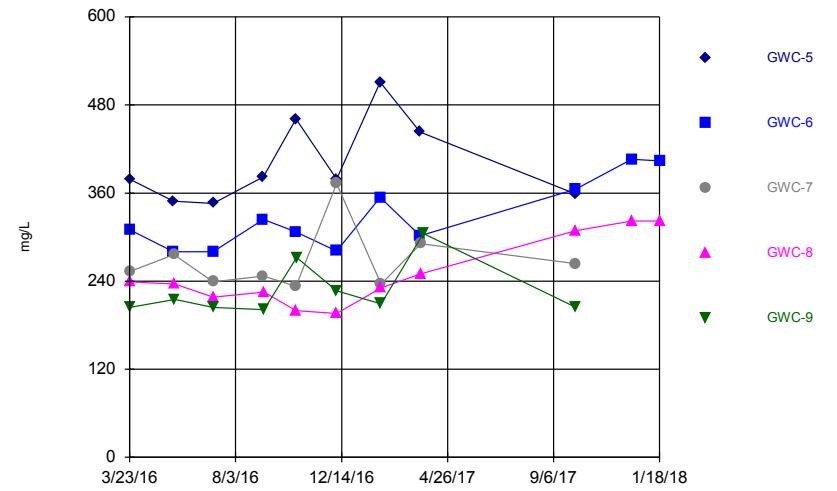
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Time Series



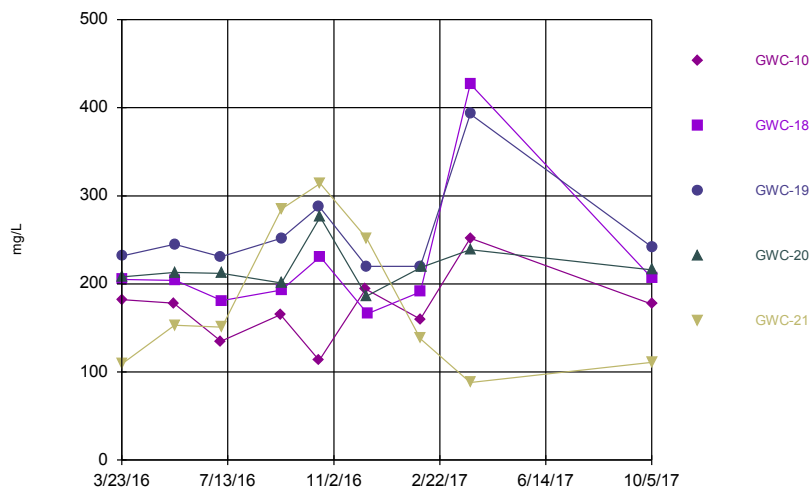
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Plant Hammond Client: Southern Company Data: CCR Hammond Huffaker 20180125

Time Series



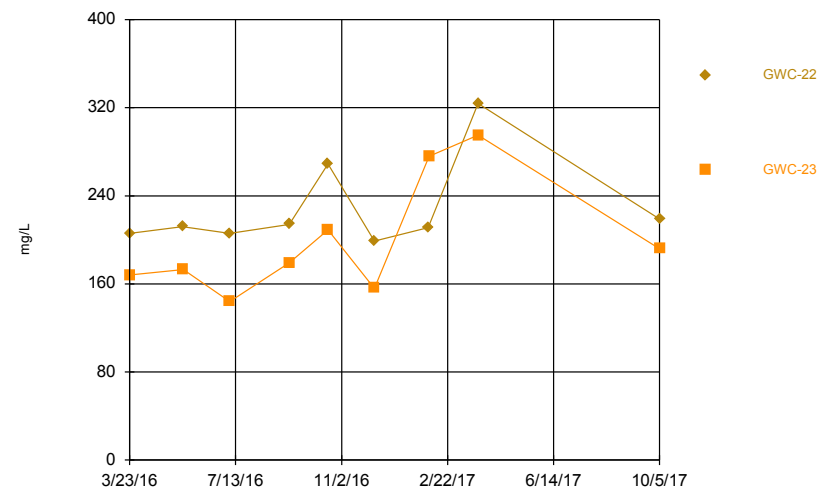
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Time Series



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

Time Series



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

Geosyntec 
consultants

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

A handwritten signature in black ink that reads "Herwig Goldemund".

Herwig Goldemund, Ph.D.
Senior Scientist

A handwritten signature in black ink that reads "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).



Seal and Signature

1/31/2019

Date

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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 Significant Increase	4
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2.2	Onsite Historical Operations (Natural Variation).....	7
3.	CONCLUSIONS	8
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Figure 3	Time Series Chart – Boron and Chloride at Upgradient Wells and GWC-8

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

LIST OF ACRONYMS

ASD	Alternate Source Demonstration
B	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

1. INTRODUCTION

1.1 Purpose

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 Summary of ASD

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 Site Setting and Operational History

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 Basis of the Statistically Significantly Increase

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

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 Onsite Historical Operations (Natural Variation)

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

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.



0 650 1,300 2,600
Feet

Site Location Map
Georgia Power Company
Huffaker Road Landfill
Rome, Floyd County, Georgia

Geosyntec
consultants

Figure

1

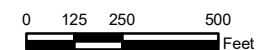
Kennesaw, GA

January 2019



Legend
 — Approximate Landfill Boundary
 ◆ Monitoring Well

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



Site Layout & Monitoring Well Locations

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

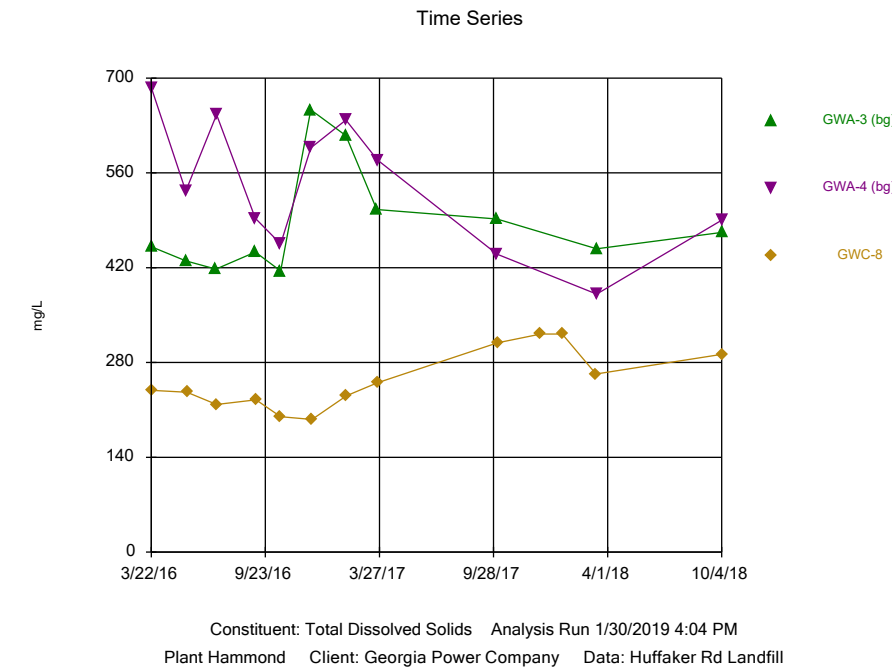
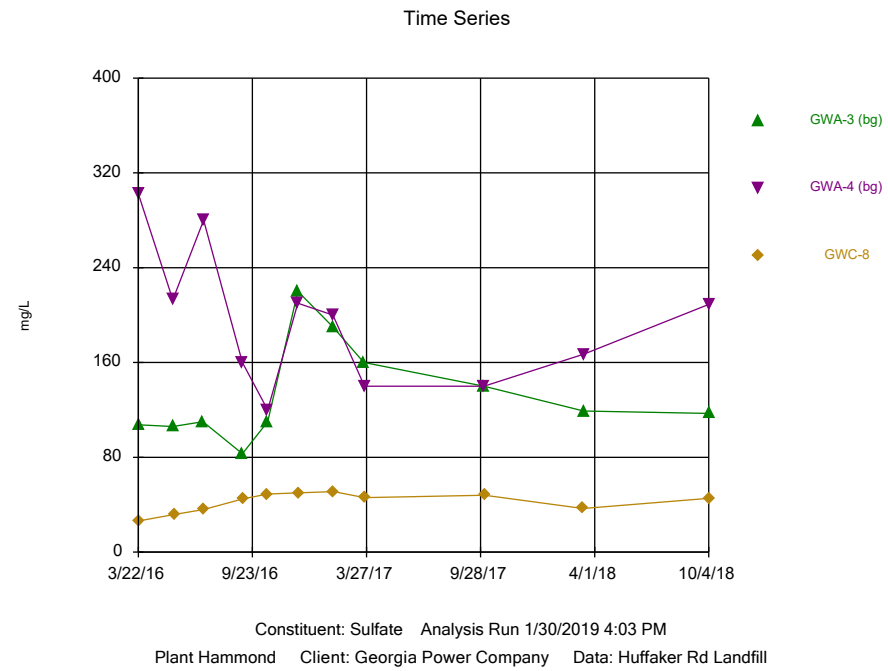
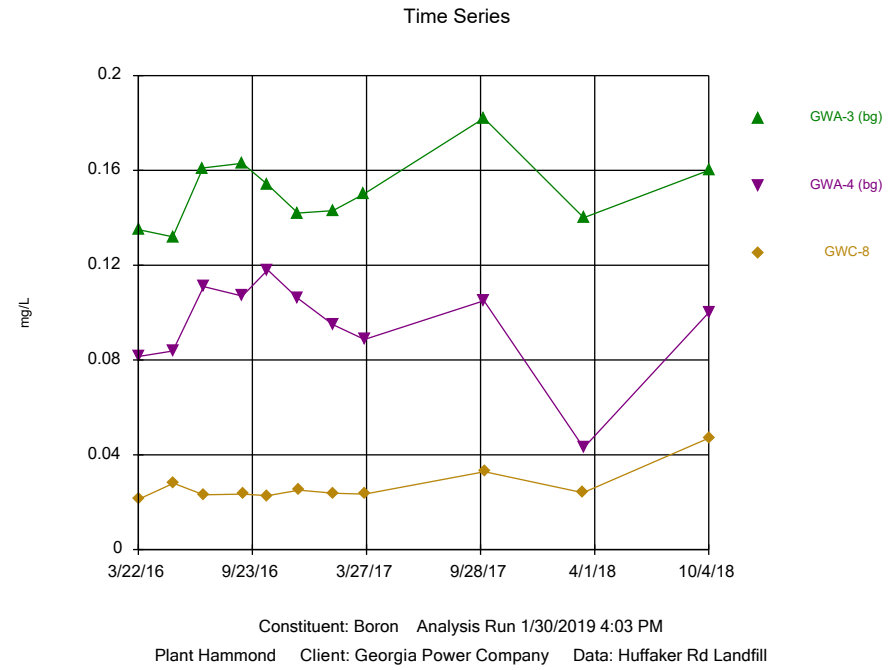
Geosyntec
 consultants

Kennesaw, GA

January 2019

Figure

2



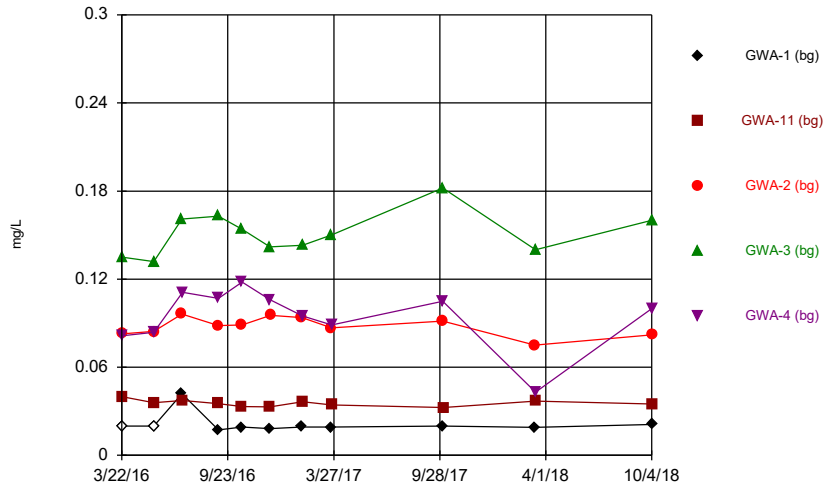
Time Series Chart – Select App. III parameters at GWA-3, GWA-4, and GWC-8
Georgia Power Company
Huffaker Road Landfill
Rome, Floyd County, Georgia



APPENDIX A

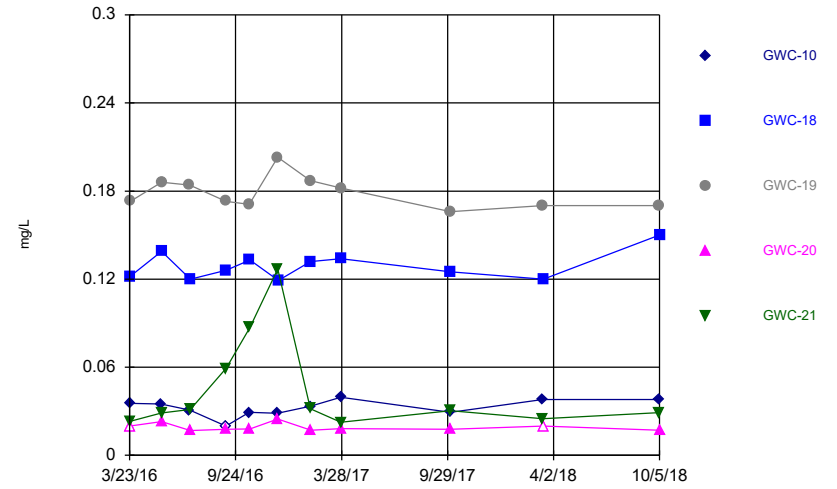
Time Series from 2018 Annual Report

Time Series



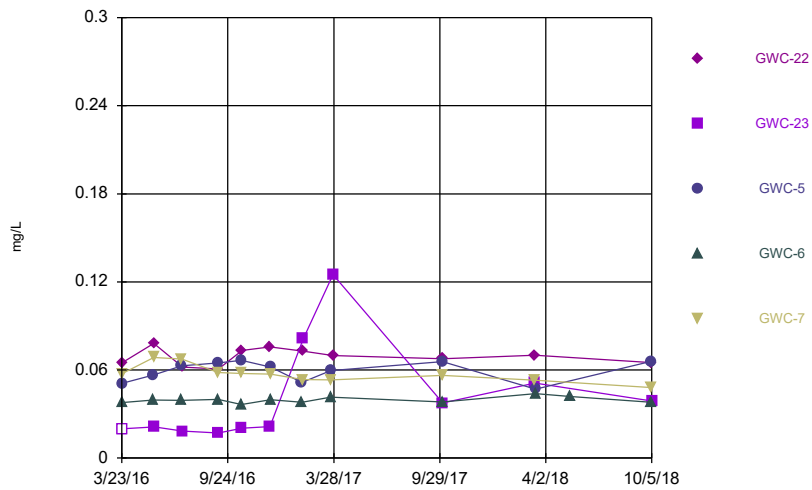
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



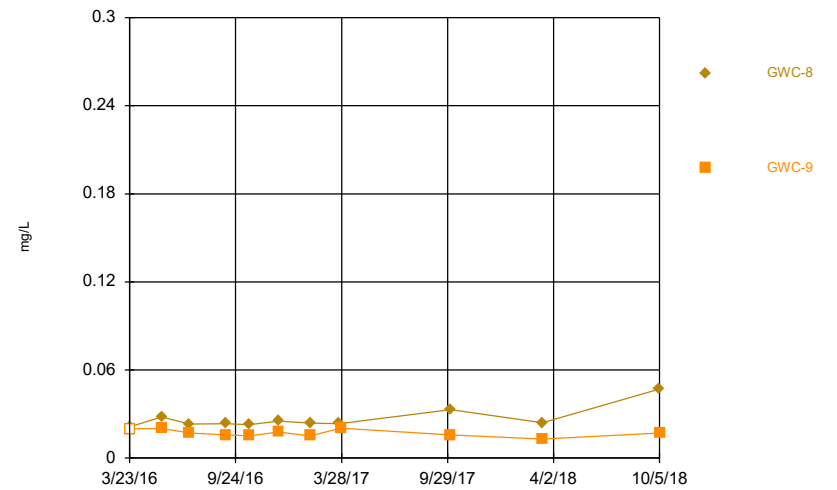
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



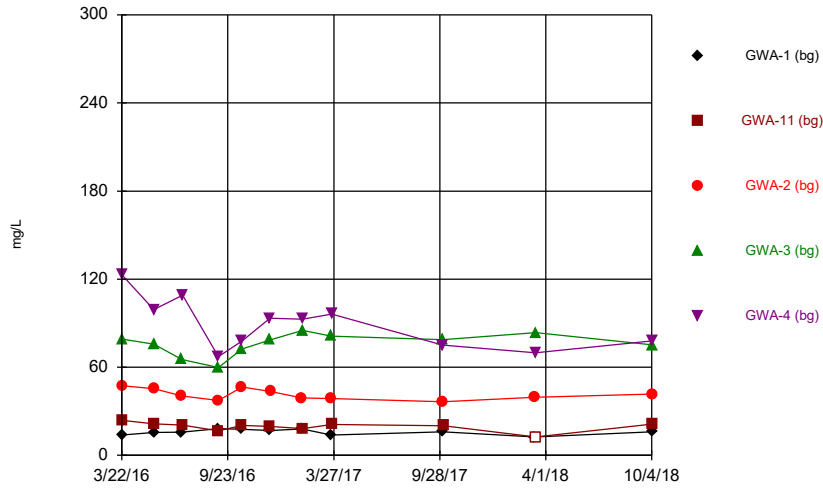
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



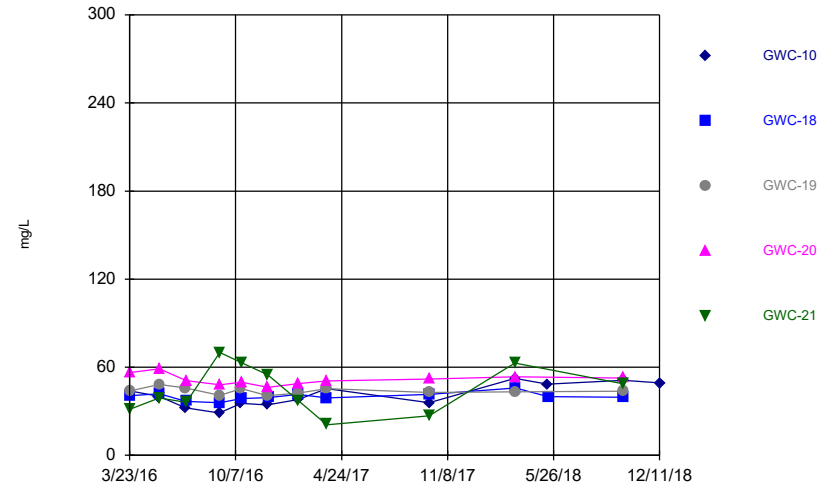
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



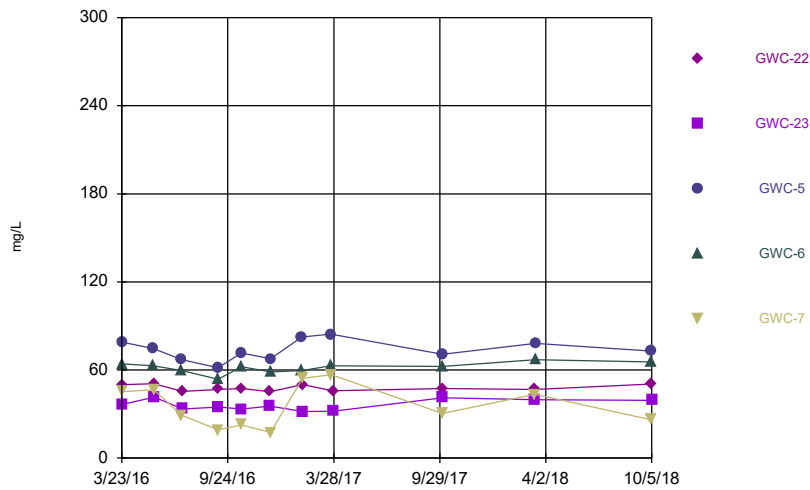
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



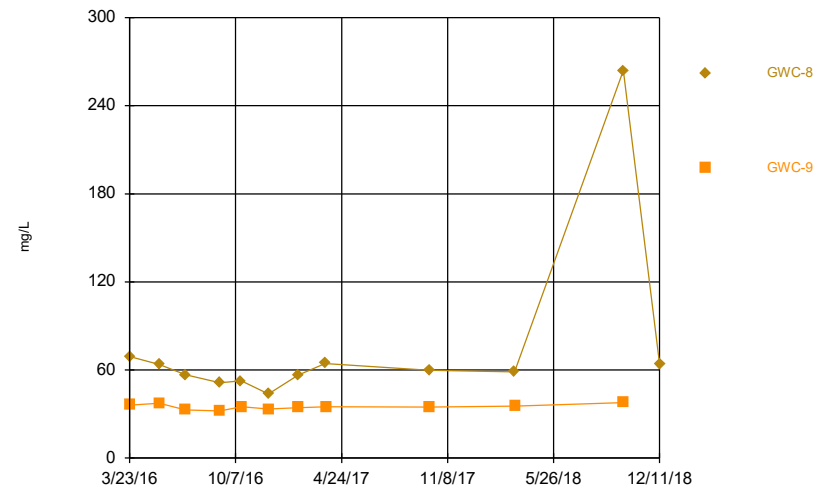
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Time Series



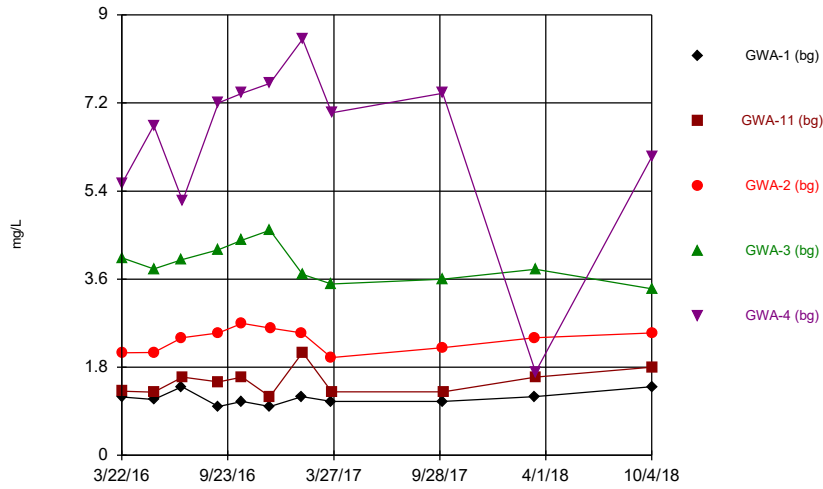
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



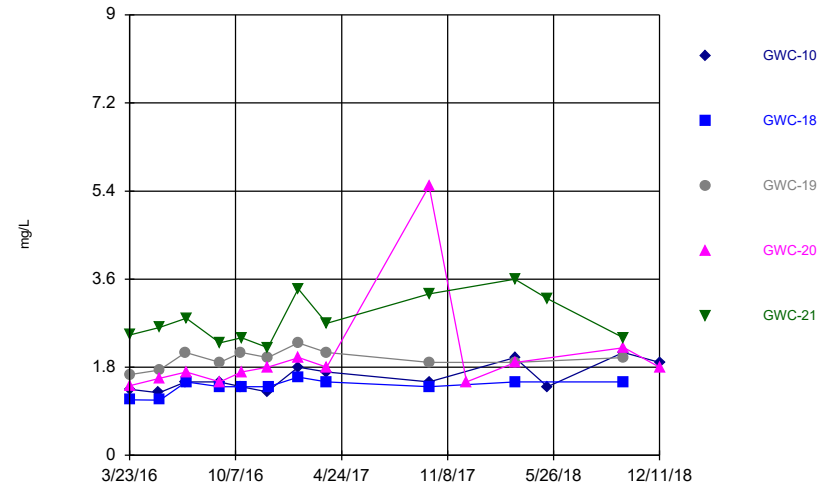
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Time Series



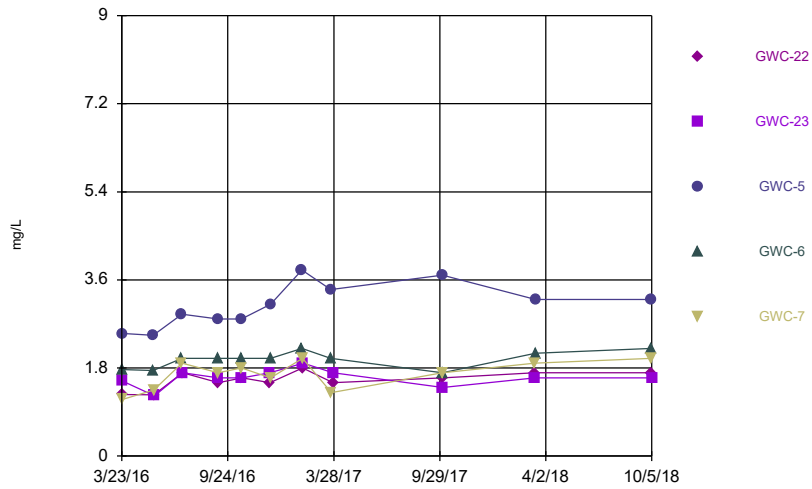
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Time Series



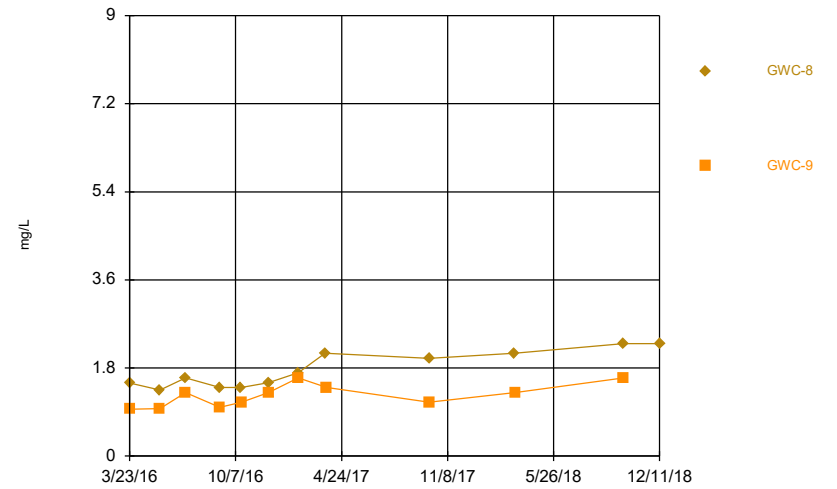
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Time Series



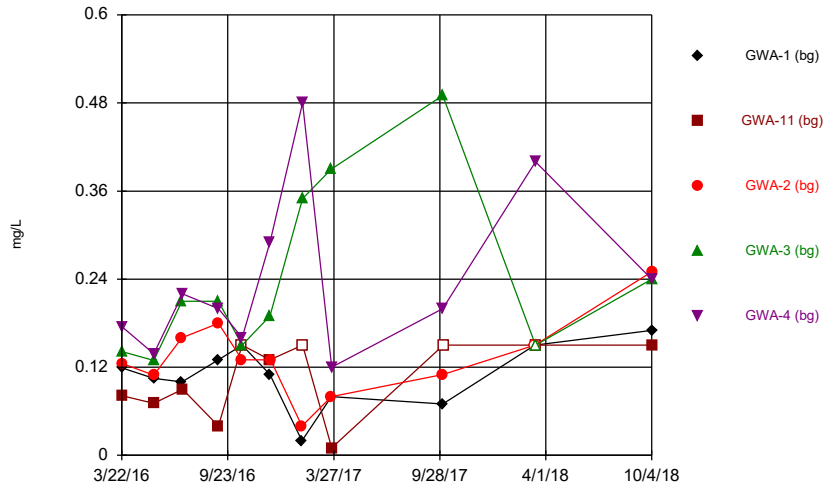
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Time Series



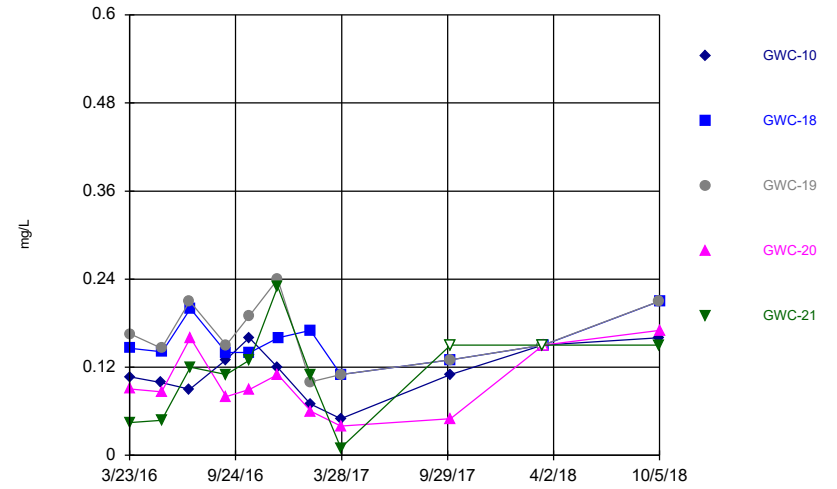
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Time Series



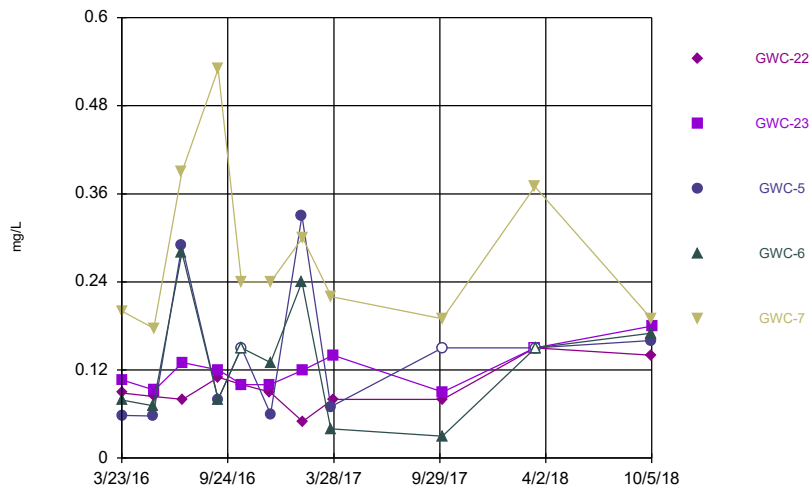
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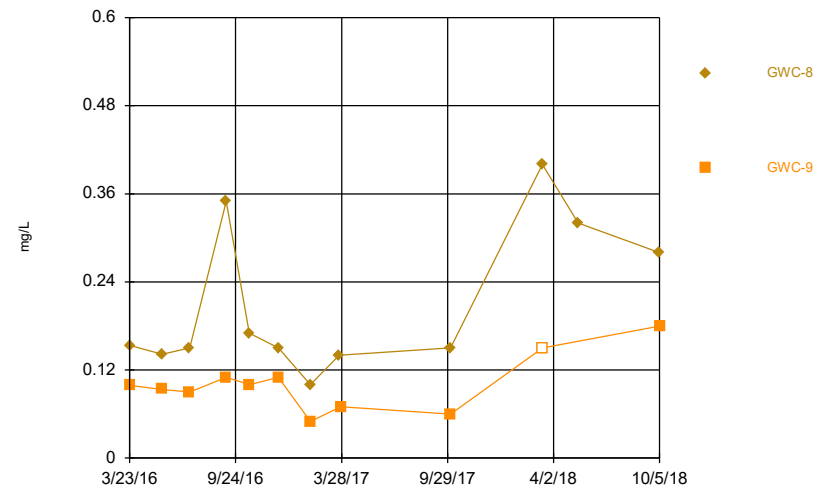
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Time Series



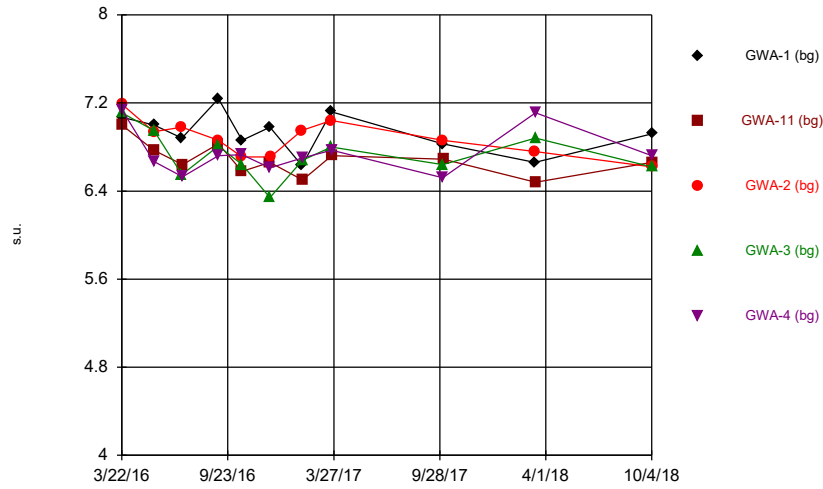
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Time Series



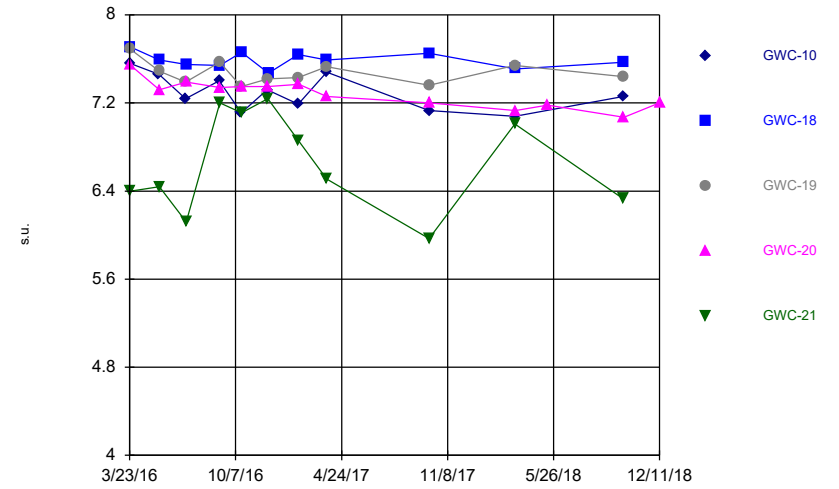
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Time Series



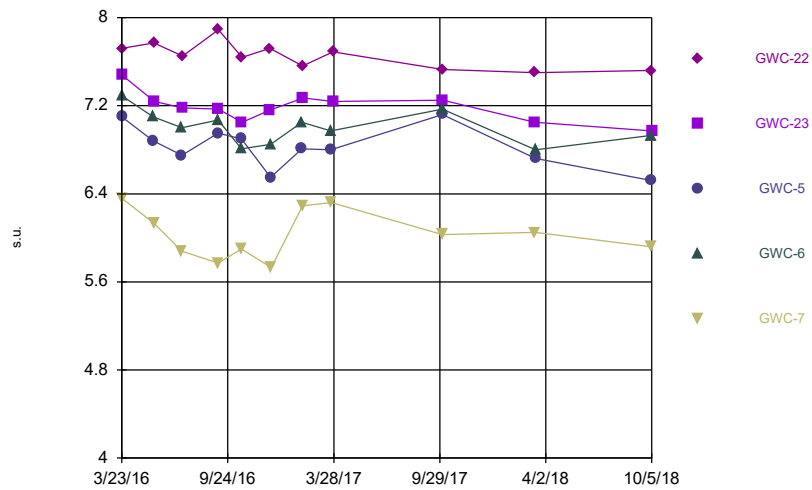
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Time Series



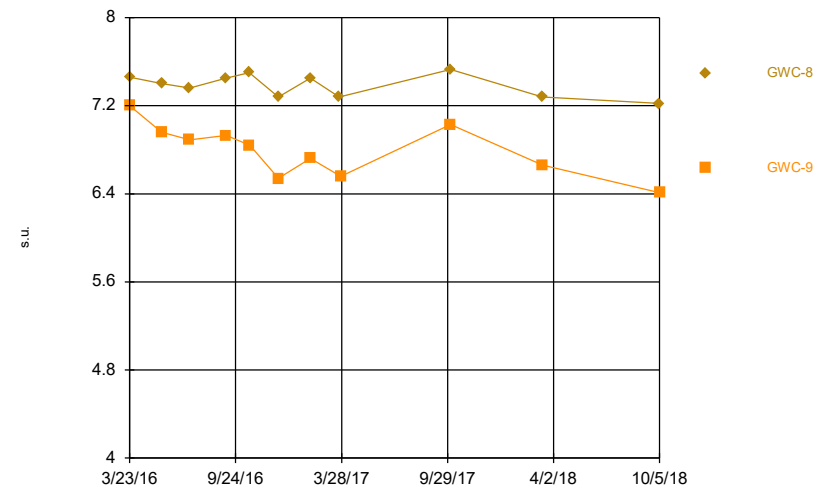
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Time Series



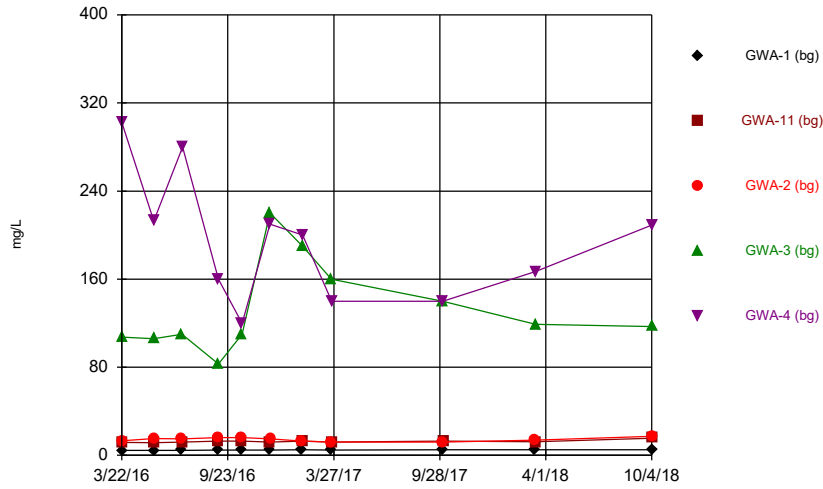
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Time Series



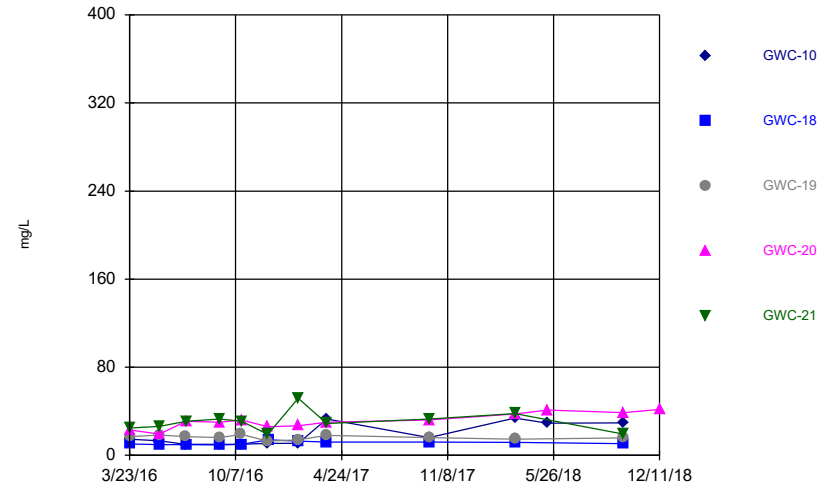
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Time Series



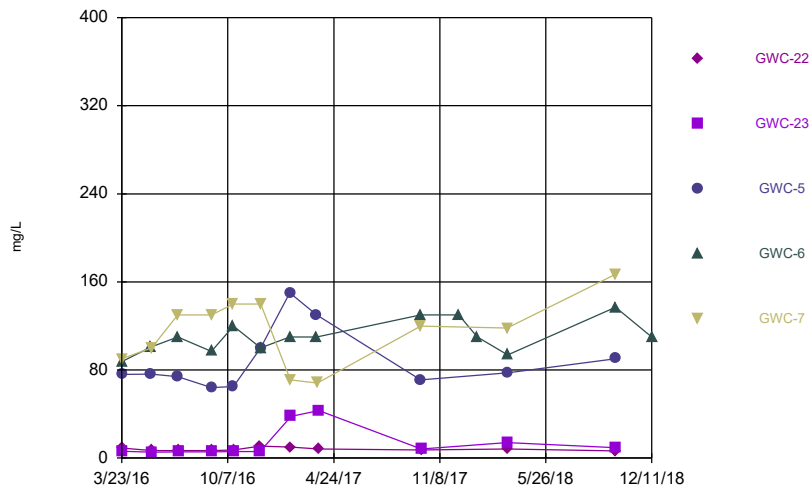
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Time Series



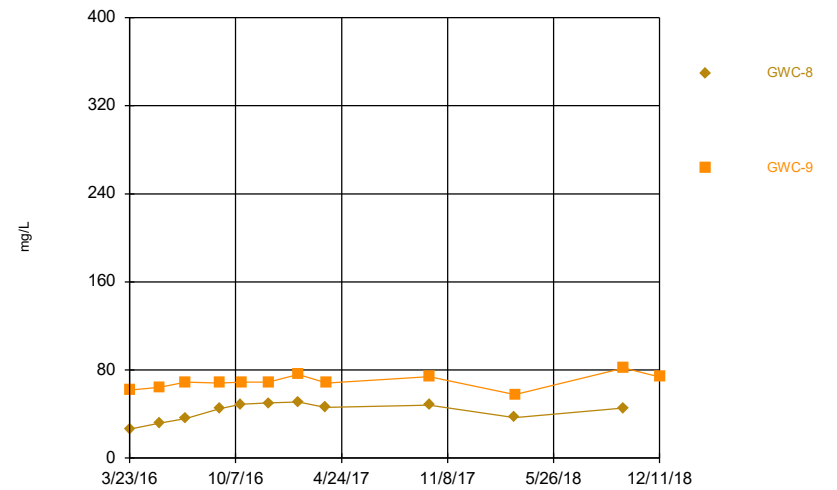
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Time Series



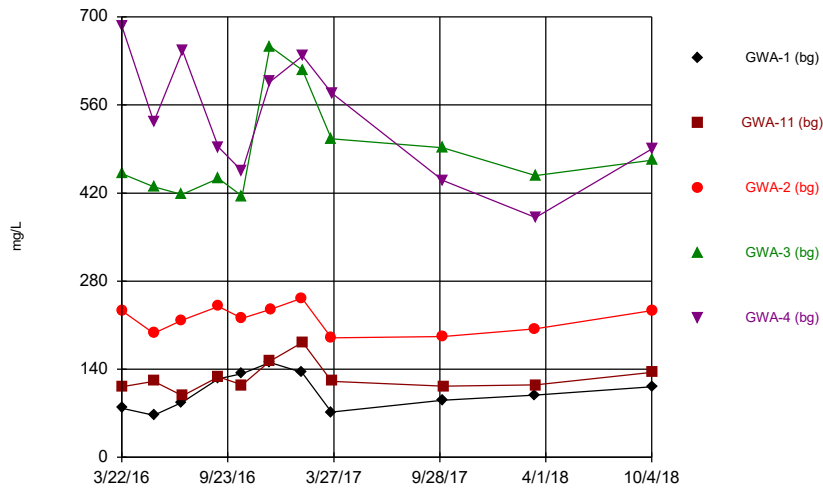
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Time Series



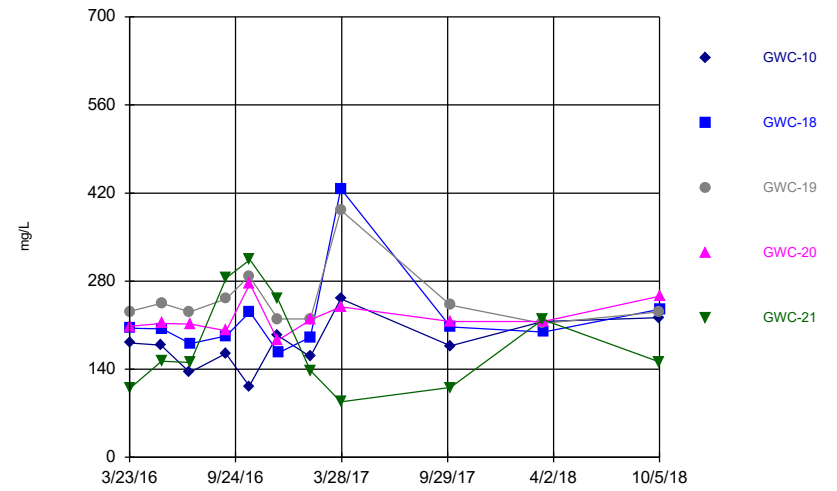
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Time Series



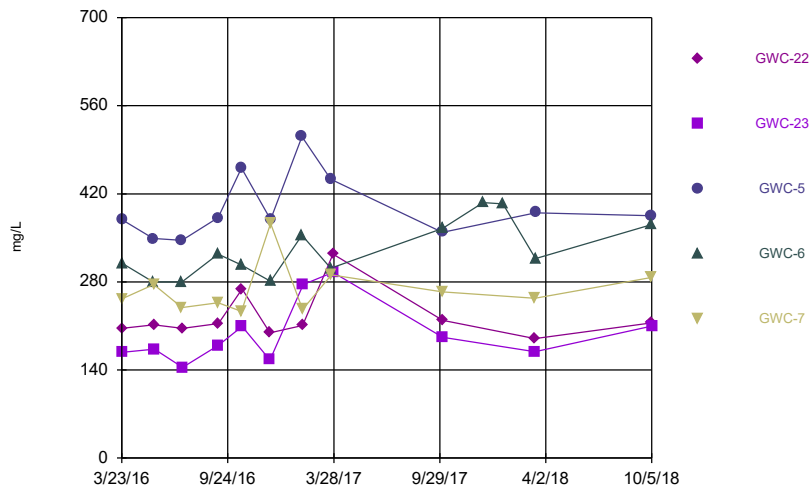
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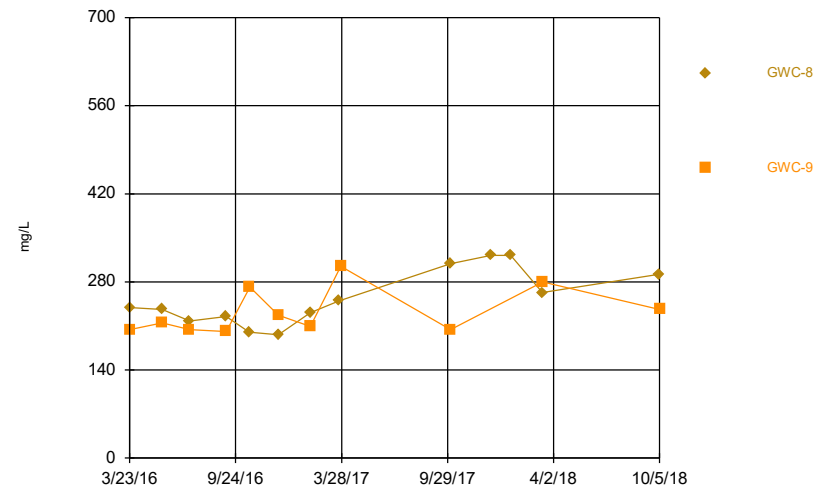
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 Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



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Time Series

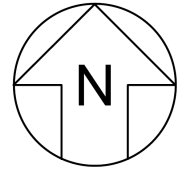


Constituent: Total Dissolved Solids Analysis Run 1/7/2019 3:59 PM
 Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill




APPENDIX B

October 2018 Potentiometric Surface
Contour Map from 2018 Annual Report

N:\GA Power\Plant Hammond GW Services\2018\GIS\mxd\Huffaker\CCR annual\2018\Figure4 POTmap.mxd 1/25/2019 6:32:26 AM



LEGEND

-  Compliance Monitoring Well and Groundwater Elevation (3 October 2018)
-  Groundwater Elevation Iso-Contour (ft AMSL)
-  Approximate Groundwater Flow Direction



- Notes:
1. Aerial Photograph Google Earth, February 2017.
 2. Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88.



**POTENTIOMETRIC SURFACE
CONTOUR MAP - OCTOBER 2018**

GEORGIA POWER COMPANY
PLANT HAMMOND HUFFAKER ROAD LANDFILL
ROME, FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

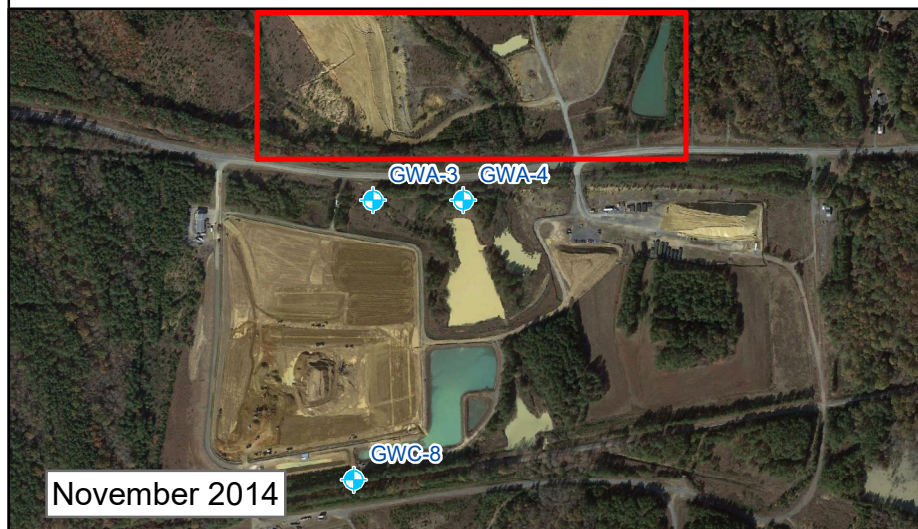
Prepared By:  Geosyntec
consultants



**FIGURE
4**

KENNESAW, GA JANUARY 2019

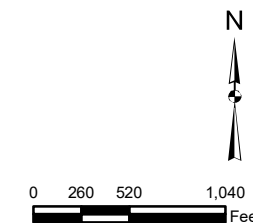
APPENDIX C

Historical Aerial Photographs



Legend
 Monitoring Well
 Area of Historical Mining Operations

Note:
 1. Aerial Photograph from Google Earth



Historical Aerial Photographs

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

Geosyntec
 consultants

Kennesaw, GA

January 2019

Figure
C-1

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

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,



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.



REPORT OF LABORATORY ANALYSIS

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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

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace 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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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

Sample: GWA-1		Lab ID: 262895001		Collected: 03/14/18 18:30		Received: 03/15/18 12:05		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 20:00	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 Preparation Method: EPA 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		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262895

QC Batch: 2725	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 262895001	

METHOD BLANK: 14428 Matrix: Water
Associated Lab Samples: 262895001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000036	03/18/18 14:09	

LABORATORY CONTROL SAMPLE: 14429

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0024	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 14475 14476

Parameter	Units	262928001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0020	0.0020	81	81	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 2745 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 262895001

METHOD BLANK: 14542 Matrix: Water
Associated Lab Samples: 262895001

Parameter	Units	Blank Result	Reporting 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	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262895

Parameter	Units	14544		14545		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
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	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262895

QC Batch: 402761

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 262895001

METHOD BLANK: 2234065

Matrix: Water

Associated Lab Samples: 262895001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	03/20/18 17:42	

LABORATORY CONTROL SAMPLE: 2234066

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	226	90	90-110	

SAMPLE DUPLICATE: 2234067

Parameter	Units	92376993002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	351	347	1	5	

SAMPLE DUPLICATE: 2234068

Parameter	Units	262896003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	263	210	22	5	D6

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QUALITY CONTROL DATA

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

QC Batch: 2695 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 262895001

METHOD BLANK: 14190 Matrix: Water
Associated Lab Samples: 262895001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	03/17/18 02:27	
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 CONTROL SAMPLE: 14191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
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 SPIKE DUPLICATE: 14192 14193

Parameter	Units	262779001		262779002		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
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 SAMPLE: 14194

Parameter	Units	262779002 Result	Spike Conc.	MS Result	MS % Rec	% 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	

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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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace 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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manser Road, Atlanta, GA 30339
 Email: abraham@southernco.com
 Phone: (404)505-7239 Fax: []
 Requested Due Date: **STANDARD TAT**

Section B
Required Project Information:
 Report To: Jsu Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Huffaker Road
 Project #: []

Section C
Invoice Information:
 Attention: scsinvoices@southernco.com
 Company Name: []
 Address: []
 Pace Quote: []
 Pace Project Manager: betty.mcdarris@pace-labs.com
 Pace Profile #: 328.3

Regulatory Agency: []
State / Location: GA

ITEM	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES		ANALYSES TEST	Y/N	METS (App. III + State)	TDS by 2540C	Chloride, Fluoride, Sulfate	Residual Chlorine (Y/N)
			START	END					H2SO4	HNO3						
1	DW	G-GRAB C-COMP	3/14/18	18:30	3/14/18	18:30	2	1	Unpreserved		Y	Y	Y			N
2	Waste Water	G-GRAB C-COMP														
3	Waste Water	G-GRAB C-COMP														
4	Waste Water	G-GRAB C-COMP														
5	Waste Water	G-GRAB C-COMP														
6	Waste Water	G-GRAB C-COMP														
7	Waste Water	G-GRAB C-COMP														
8	Waste Water	G-GRAB C-COMP														
9	Waste Water	G-GRAB C-COMP														
10	Waste Water	G-GRAB C-COMP														
11	Waste Water	G-GRAB C-COMP														
12	Waste Water	G-GRAB C-COMP														

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

02-11-18
 GWA-1

Handwritten: EAST STEEP

NO#: 262895



RECEIVED BY / SEPARATION	DATE	TIME	ACCEPTED BY / SEPARATION	DATE	TIME	SAMPLE CONDITION
[Signature]	3/14/18	20:00	Mollie M...	3/14/18	20:00	
[Signature]	3/14/18	21:10	Egg...	3/14/18	21:10	
[Signature]	3/15/18	10:43	Mike...	3/15/18	10:43	
[Signature]	3/15/18	12:05	M...	3/15/18	12:05	

Section D
Received on: []
Temp in C: []
Ice (Y/N): []
Clarity (Y/N): []
Sorted (Y/N): []
Cooler (Y/N): []
Intact (Y/N): []

Signature of Sampler: [Signature]
Print Name of Sampler: DAN GIBBS
Date Signed: 03/14/18



Sample Condition Upon Receipt

Client Name: GAPower

Project # _____

WO#: **262895**

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

PM: **BM** Due Date: **03/22/18**

Tracking #: _____ Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

CLIENT: **GAPower-CCR**

Packing Material: Bubble Wrap Bubble Bags None Other _____

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

Cooler Temperature 2.4 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 3/15/18 MP

Temp should be above freezing to 6°C Comments: _____

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

Client Notification/ Resolution: _____ Date/Time: _____ Field Data Required? **Y / N**

Person Contacted: _____

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).

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,



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.



REPORT OF LABORATORY ANALYSIS

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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

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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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

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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

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262896

Sample: GWA-2		Lab ID: 262896001		Collected: 03/14/18 17:10		Received: 03/15/18 12:05		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262896

Sample: FD-01		Lab ID: 262896002		Collected: 03/14/18 00:00		Received: 03/15/18 12:05		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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

Sample: GWC-8		Lab ID: 262896003		Collected: 03/14/18 19:35		Received: 03/15/18 12:05		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 2725 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 262896001, 262896002, 262896003

METHOD BLANK: 14428 Matrix: Water
Associated Lab Samples: 262896001, 262896002, 262896003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000036	03/18/18 14:09	

LABORATORY CONTROL SAMPLE: 14429

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0024	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 14475 14476

Parameter	Units	262928001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0020	0.0020	81	81	75-125	0	20	

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QUALITY CONTROL DATA

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 Samples: 262896001, 262896002, 262896003

METHOD BLANK: 14542 Matrix: Water

Associated Lab Samples: 262896001, 262896002, 262896003

Parameter	Units	Blank Result	Reporting 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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262896

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 14544		14545		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		262928001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
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	

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QUALITY CONTROL DATA

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

QC Batch: 402761 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 262896001, 262896002, 262896003

METHOD BLANK: 2234065 Matrix: Water
Associated Lab Samples: 262896001, 262896002, 262896003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	03/20/18 17:42	

LABORATORY CONTROL SAMPLE: 2234066

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	226	90	90-110	

SAMPLE DUPLICATE: 2234067

Parameter	Units	92376993002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	351	347	1	5	

SAMPLE DUPLICATE: 2234068

Parameter	Units	262896003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	263	210	22	5	D6

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QUALITY CONTROL DATA

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

QC Batch: 2695 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 262896001, 262896002, 262896003

METHOD BLANK: 14190 Matrix: Water
Associated Lab Samples: 262896001, 262896002, 262896003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	03/17/18 02:27	
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 CONTROL SAMPLE: 14191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
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 SPIKE DUPLICATE: 14192 14193

Parameter	Units	262779001		262779002		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
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 SAMPLE: 14194

Parameter	Units	262779002 Result	Spike Conc.	MS Result	MS % Rec	% 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	

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REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A		Section B	
Required Client Information: Company: Georgia Power - Coal Combustion Residuals Address: 2480 Marler Road Atlanta, GA 30339 Email: labraham@southernco.com Phone: (404)506-7239 Requested Due Date: <u>Standard TAT</u>		Required Project Information: Report To: Jsu Abraham / Lauren Peaty Copy To: Geosyntec Purchase Order #: SCS10348606 Project Name: Plant Hammond - Huffaker Road Project #:	
Attention: SCSinvoices@southernco.com Company Name: Address: Pace Quote: Pace Project Manager: betsy.mcdaniel@pacestabs.com Pace Profile #: 328.3		Regulatory Agency: State / Location: GA	

Page: 1 of 1

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES						ANALYSES TEST Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)		
			START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol				Other	Metals (App. III + State)
1	GWA-2	WTG	3/14/18	1700	3/14/18	3	2	1									
2	FD-01	WTG	3/14/18		3/14/18	3	2	1									
3	GWC-8	WTG	3/14/18	1925	3/14/18	3	2	1									
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

ITEM 5-P 23-14 2018

LAST

WO#: 262896

262896

RECEIVED BY / DATE	ACCEPTED BY / DATE	TEMP IN C	Received in	Custody	Sealed	Cooler	Samples
Stephen W. Randall 3/14/18 20:15	Mollie Munson 3/14/18 20:15	20.15					
Mollie Munson 3/14/18 21:00	3/14/18 21:00						
Mollie Munson 3/15/18 10:43	M. Kay Nguyen / Pace 3/15/18 10A3						
	Mollie Munson 3/15/18 12:05	20.4					

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: STEPHEN W. RANDALL
 SIGNATURE OF SAMPLER: *Stephen W. Randall*
 DATE Signed: 3/14/18

Sample Condition Upon Receipt



Client Name: GIA Power

Project # _____

WO#: 262896

PM: **BM**

Due Date: **03/22/18**

CLIENT: **GAPower-CCR**

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

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

Cooler Temperature 2.4 Biological Tissue Is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/15/18 BM

Comments: _____

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

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,



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.



REPORT OF LABORATORY ANALYSIS

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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

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace 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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262979

Sample: GWC-20		Lab ID: 262979001		Collected: 03/16/18 10:55		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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

Sample: GWC-5		Lab ID: 262979002		Collected: 03/16/18 12:22		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 2820 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 262979001, 262979002

METHOD BLANK: 14731 Matrix: Water
Associated Lab Samples: 262979001, 262979002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000036	03/20/18 17:46	

LABORATORY CONTROL SAMPLE: 14732

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 14733 14734

Parameter	Units	262979001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0026	0.0024	103	98	75-125	5	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

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

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
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	mg/L	ND	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	
Copper	mg/L	ND	0.0050	0.0013	03/20/18 20:23	
Lead	mg/L	ND	0.0050	0.00027	03/20/18 20:23	
Nickel	mg/L	ND	0.0050	0.00095	03/20/18 20:23	
Selenium	mg/L	ND	0.010	0.0014	03/20/18 20:23	
Silver	mg/L	ND	0.0050	0.00095	03/20/18 20:23	
Thallium	mg/L	ND	0.0010	0.00014	03/20/18 20:23	
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	mg/L	.1	0.11	110	80-120	
Arsenic	mg/L	.1	0.10	103	80-120	
Barium	mg/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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262979

Parameter	Units	14718		14719		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
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		

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QUALITY CONTROL DATA

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

QC Batch: 403194 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 262979001, 262979002

METHOD BLANK: 2236685 Matrix: Water
Associated Lab Samples: 262979001, 262979002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	03/26/18 13:30	

LABORATORY CONTROL SAMPLE: 2236686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	250	100	90-110	

SAMPLE DUPLICATE: 2236687

Parameter	Units	262978001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		5	

SAMPLE DUPLICATE: 2236688

Parameter	Units	262960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	<25.0	ND		5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 3105 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 262979001, 262979002

METHOD BLANK: 16004 Matrix: Water
Associated Lab Samples: 262979001, 262979002

Parameter	Units	Blank Result	Reporting 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	

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 SPIKE DUPLICATE: 16006 16007

Parameter	Units	262979001		16007		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
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

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

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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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road
Pace 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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Marner Road
 Atlanta, GA 30339
 Email: labraham@scsulfhemco.com Fax
 Phone: (404)506-7239
 Requested Due Date: STANDARD TAT

Section B Required Project Information:
 Report To: Joju Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10346606
 Project Name: Plant Hammond - Huffaker Road
 Project #: TAT

Section C Invoice Information:
 Attention: SCSinvoices@southemco.com
 Company Name:
 Address:
 POC Quote:
 POC Project Manager: betsy.mcdonie@pacelabs.com
 POC Profile #: 328.3

Resubmit Agency
 State / Location
 GA

ITEM #	MATRIX Disinfectant Water Waste Water Product Soil/Sediment Oil Wipe Air Other Tissue	MATRIX CODE DW WT WW P SL OK WP AR OT TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	UNPRESERVED	PRESERVATIVES				ANALYSES TEST Y/N	Metals (App. III + State)	TDS by 2540C	Chloride, Fluoride, Sulfate	Requested Analysis Filtered (Y/N)
			START DATE TIME	END DATE TIME						H2SO4	HNO3	HCl	NaOH					
1			3/16/18 10:45	3/16/18 10:55	G	WT	3	2						Y			Y	03/14/2018
2			3/16/18 12:15	3/16/18 12:22	G	WT	3	2						Y			Y	03/16/2018
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
<i>Last Item</i>																		

Additional Comments
 03/16/18 13:15
 03/16/18 15:25
 03/16/18 17:30

Relinquished by / Affiliation
 J. Parker
 Mochia Mofarrah
 M. Rahman

Accepted by / Affiliation
 Mochia Mofarrah
 M. Rahman

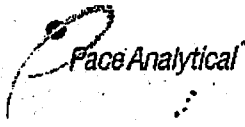
DATE TIME
 03/16/18 13:15
 03/16/18 15:25
 03/16/18 17:30

SAMPLE CONDITIONS
 Received on
 Temperature
 Sealed
 Cooled
 Custody
 Samples (Y/N)

WO#: 262979

262979

Sample Condition Upon Receipt



Client Name: GIA Power

Project # _____

WO#: 262979

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____
Tracking #: _____

PM: BM Due Date: 03/26/18

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

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

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

Cooler Temperature 4.2 Biological Tissue Is Frozen: Yes No

Date and Initials of person examining contents: 3/16/18 MR

Temp should be above freezing to 6°C

Comments: _____

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

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,



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.



REPORT OF LABORATORY ANALYSIS

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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

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

Sample: EB-02		Lab ID: 262980001		Collected: 03/16/18 08:40		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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

Sample: FB-02		Lab ID: 262980002		Collected: 03/16/18 08:55		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

Sample: GWC-18 **Lab ID: 262980003** Collected: 03/16/18 10:38 Received: 03/16/18 17:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

Sample: GWC-6		Lab ID: 262980004		Collected: 03/16/18 12:25		Received: 03/16/18 17:30		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 2968 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 262980001, 262980002, 262980003, 262980004

METHOD BLANK: 15501 Matrix: Water
Associated Lab Samples: 262980001, 262980002, 262980003, 262980004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	03/23/18 11:12	

LABORATORY CONTROL SAMPLE: 15502

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 15503 15504

Parameter	Units	262980004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0027	0.0027	110	110	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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 Samples: 262980001, 262980002, 262980003, 262980004

METHOD BLANK: 15362 Matrix: Water

Associated Lab Samples: 262980001, 262980002, 262980003, 262980004

Parameter	Units	Blank Result	Reporting 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
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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 15389		15390		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		262980003 Result	MS Spike Conc.	MSD Spike Conc.									
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		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262980

QC Batch: 403194

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 262980001, 262980002, 262980003, 262980004

METHOD BLANK: 2236685

Matrix: Water

Associated Lab Samples: 262980001, 262980002, 262980003, 262980004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	03/26/18 13:30	

LABORATORY CONTROL SAMPLE: 2236686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	250	100	90-110	

SAMPLE DUPLICATE: 2236687

Parameter	Units	262978001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		5	

SAMPLE DUPLICATE: 2236688

Parameter	Units	262960001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	<25.0	ND		5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 3105 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 262980001, 262980002, 262980003, 262980004

METHOD BLANK: 16004 Matrix: Water
Associated Lab Samples: 262980001, 262980002, 262980003, 262980004

Parameter	Units	Blank Result	Reporting 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	

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 SPIKE DUPLICATE: 16006 16007

Parameter	Units	262979001		262979002		262979001		262979002		% Rec Limits	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS % Rec	MSD % Rec	MS % Rec	MSD % Rec			
Chloride	mg/L	1.9	10	10	10	11.9	11.9	100	100	90-110	0	15
Fluoride	mg/L	ND	10	10	10	11.4	11.4	113	114	90-110	1	15 M1
Sulfate	mg/L	37.5	10	10	10	43.8	43.8	64	64	90-110	0	15 M1

MATRIX SPIKE SAMPLE: 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	

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REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

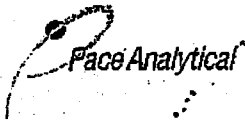
Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	José Abraham / Lauren Petty	Attention:	SCSInvoices@southernco.com
Address:	2480 Manser Road Allama, GA 30339	Copy To:	Geosyntec	Company Name:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Address:	
Phone:	(404)506-7239 Fax	Project Name:	Plant Hammond - Huffaker Road	Pace Quote:	
Requested Due Date:	Standard TAR	Project #:		Pace Project Manager:	betsy.mcdaniel@pacelabs.com
				Pace Profile #:	328.3
				State / Location:	GA
				Regulatory Agency:	
				Page:	1 Of 1

#	ITEM	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	OF CONTAINERS	PRESERVATIVES				ANALYSES TEST	RESIDUAL CHROME (V/N)	TEMP IN C	RECEIVED ON	CUSTODY	COOLER	SAMPLES (V/N)	INTER (V/N)
				START	END				H2SO4	HNO3	HCl	NaOH								
1	EB-02	Drinking Water	DW	0820	3/16/18 0840	G	W6	3	2											
2	FB-02	Waste Water	WW	0845	3/16/18 0855	G	W6	3	2											
3	GWC-1B	Process Water	P	035	3/16/18 1038	G	W6	3	2											
4	GWC-6	Surface	S	1215	3/16/18 1225	G	W6	3	2											
5		Sludge	Sl																	
6		Oil	Ol																	
7		Wipe	Wp																	
8		Air	Ar																	
9		Other	Ot																	
10		Tissue	Ts																	
11																				
12																				

WO#: 262980

REQUISITIONED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Noelia Muskus Ruiz	03/16/18	15:25	Madamman	03/16/18	17:30	4.2 Y P P

Sample Condition Upon Receipt



Client Name: GIA Power

Project # _____

WO# : 262980

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

PN: BM Due Date: 03/26/18

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

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other _____

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

Cooler Temperature 4.2 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/16/18

Comments: _____

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

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,



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.



REPORT OF LABORATORY ANALYSIS

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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

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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

Sample: GWA-3		Lab ID: 262982001		Collected: 03/15/18 10:30		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWA-4		Lab ID: 262982002		Collected: 03/15/18 11:28		Received: 03/16/18 17:30		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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	

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWA-11		Lab ID: 262982003		Collected: 03/15/18 12:42		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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

Sample: GWC-10		Lab ID: 262982004		Collected: 03/15/18 13:43		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWC-22		Lab ID: 262982005		Collected: 03/15/18 15:29		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

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ANALYTICAL RESULTS

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

Sample: GWC-21		Lab ID: 262982006		Collected: 03/15/18 16:20		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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	mg/L	1.0	0.017	1		03/25/18 21:59	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Sample: GWC-19		Lab ID: 262982007		Collected: 03/15/18 17:28		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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	mg/L	1.0	0.017	1		03/25/18 23:42	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 2968 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 262982001, 262982002, 262982003, 262982004, 262982005, 262982006, 262982007

METHOD BLANK: 15501 Matrix: Water
Associated Lab Samples: 262982001, 262982002, 262982003, 262982004, 262982005, 262982006, 262982007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000036	03/23/18 11:12	

LABORATORY CONTROL SAMPLE: 15502

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 15503 15504

Parameter	Units	262980004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0027	0.0027	110	110	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 2942 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 262982001, 262982002, 262982003, 262982004, 262982005, 262982006, 262982007

METHOD BLANK: 15362 Matrix: Water
Associated Lab Samples: 262982001, 262982002, 262982003, 262982004, 262982005, 262982006, 262982007

Parameter	Units	Blank Result	Reporting 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
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	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262982

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 15389		15390		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		262980003 Result	MS Spike Conc.	MSD Spike Conc.									
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		

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QUALITY CONTROL DATA

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

QC Batch: 403061 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 262982001, 262982002, 262982003, 262982004, 262982005, 262982006, 262982007

METHOD BLANK: 2235790 Matrix: Water
Associated Lab Samples: 262982001, 262982002, 262982003, 262982004, 262982005, 262982006, 262982007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	03/26/18 13:30	

LABORATORY CONTROL SAMPLE: 2235791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	268	107	90-110	

SAMPLE DUPLICATE: 2235792

Parameter	Units	262983002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		5	

SAMPLE DUPLICATE: 2235793

Parameter	Units	262982006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	219	229	4	5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 3105 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 262982001, 262982002, 262982003, 262982004, 262982005, 262982006, 262982007

METHOD BLANK: 16004 Matrix: Water
Associated Lab Samples: 262982001, 262982002, 262982003, 262982004, 262982005, 262982006, 262982007

Parameter	Units	Blank Result	Reporting 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	

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 SPIKE DUPLICATE: 16006 16007

Parameter	Units	262979001		262979002		262979001		262979002		% Rec Limits	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS % Rec	MSD % Rec					
Chloride	mg/L	1.9	10	10	10	11.9	11.9	100	100	90-110	0	15
Fluoride	mg/L	ND	10	10	10	11.4	11.4	113	114	90-110	1	15 M1
Sulfate	mg/L	37.5	10	10	10	43.8	43.8	64	64	90-110	0	15 M1

MATRIX SPIKE SAMPLE: 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	

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REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power - Coal Combustion Residuals	Report To: Jón Abraham / Lauren Pletty	Company Name: Geosyntec	Attention: SCSInvoicing@southemco.com	Company Name: SCSInvoicing@southemco.com	Company Name: SCSInvoicing@southemco.com
Address: 2480 Manner Road	Copy To: Geosyntec	Purchase Order #: SCS10348806	Address: Atlanta, GA 30339	Address: Atlanta, GA 30339	Address: Atlanta, GA 30339
Email: j.abraham@southemco.com	Project Name: Plant Hammond - Huffaker Road	Project #: STANDARD TAT	Project Manager: betsy.mcdaniel@paceclabs.com	Project Manager: betsy.mcdaniel@paceclabs.com	Project Manager: betsy.mcdaniel@paceclabs.com
Phone: (404) 506-7239	Requested Due Date: STANDARD TAT		Pace Profile #: 328.3	Pace Profile #: 328.3	Pace Profile #: 328.3
			State / Location: GA	State / Location: GA	State / Location: GA

#	ITEMS	MATRIX CODE	MATRIX	SAMPLE ID	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	TEMPERATURE AT COLLECTION		PRESERVATIVES	ANALYSES TEST	RESIDUAL CHLORINE (Y/N)
					START DATE/TIME	END DATE/TIME			TEMP	TEMP			
1		WT G	Densim Water	GWA-3	3/15/18 10:20	3/15/18 10:30	G	WT G	19.00	19.00	Y	Y	N
2		WT G	Waste Water	GWA-4	3/15/18 11:23	3/15/18 11:26	G	WT G	20.40	20.40	Y	Y	N
3		WT G	Waste Water	GWA-11	3/15/18 12:52	3/15/18 12:54	G	WT G	17.30	17.30	Y	Y	N
4		WT G	Product	GWC-10	3/15/18 13:37	3/15/18 13:43	G	WT G	19.00	19.00	Y	Y	N
5		WT G	Soil/Sed	GWC-22	3/15/18 15:24	3/15/18 15:29	G	WT G	20.40	20.40	Y	Y	N
6		WT G	Wipe	GWC-21	3/15/18 16:14	3/15/18 16:20	G	WT G	17.28	17.28	Y	Y	N
7		WT G	Air	GWC-19	3/15/18 17:20	3/15/18 17:28	G	WT G			Y	Y	N
8			Other										
9			Tissue										
10													
11													
12													

NO#: 262982

262982

RECEIVED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP	RECEIVED ON	TEMP	IS6	CUSTODY	SEALED	COOL	SAMPLES
Medica Mulsion	3/15/18	19:00	Medica Mulsion	3/15/18	19:00	19.00							
Medica Mulsion	3/15/18	20:40	Medica Mulsion	3/15/18	20:40	20.40							
Medica Mulsion	3/15/18	17:30	Medica Mulsion	3/15/18	17:30	17.30							

DATE SIGNED: 3/15/2018

Sample Condition Upon Receipt



Client Name: GPA Power

Project # _____

WO#: 262982

PM: BM

Due Date: 03/26/18

CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

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

Cooler Temperature 1.9 Biological Tissue Is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/16/18 MR

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

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,



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.



REPORT OF LABORATORY ANALYSIS

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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

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Texas Certification #: T104704397-08-TX

Virginia Certification #: 460204

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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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

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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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: EB-01		Lab ID: 262983001		Collected: 03/15/18 10:27		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: FB-01		Lab ID: 262983002		Collected: 03/15/18 10:45		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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	mg/L	1.0	0.017	1		03/26/18 00:24	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: GWC-23		Lab ID: 262983003		Collected: 03/15/18 14:20		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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	mg/L	1.0	0.017	1		03/26/18 00:44	14808-79-8		

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ANALYTICAL RESULTS

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

Sample: FD-02		Lab ID: 262983004		Collected: 03/15/18 00:00	Received: 03/16/18 17:30	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: GWC-7		Lab ID: 262983005		Collected: 03/15/18 17:10		Received: 03/16/18 17:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Sample: GWC-9		Lab ID: 262983006		Collected: 03/15/18 18:35		Received: 03/16/18 17:30		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 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	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

QC Batch: 2968

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

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

METHOD BLANK: 15501

Matrix: Water

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

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000036	03/23/18 11:12	

LABORATORY CONTROL SAMPLE: 15502

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 15503

15504

Parameter	Units	262980004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0027	0.0027	110	110	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 2942 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 262983001, 262983002, 262983003, 262983004, 262983005, 262983006

METHOD BLANK: 15362 Matrix: Water
Associated Lab Samples: 262983001, 262983002, 262983003, 262983004, 262983005, 262983006

Parameter	Units	Blank Result	Reporting 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
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	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 15389		15390		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		262980003 Result	MS Spike Conc.	MSD Spike Conc.									
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		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

QC Batch: 402965

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 262983001

METHOD BLANK: 2235297

Matrix: Water

Associated Lab Samples: 262983001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	03/26/18 14:51	

LABORATORY CONTROL SAMPLE: 2235298

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	268	107	90-110	

SAMPLE DUPLICATE: 2235299

Parameter	Units	92377175006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	79.0	80.0	1	5	

SAMPLE DUPLICATE: 2235300

Parameter	Units	262969004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	88.0	93.3	6	5	D6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

QC Batch: 403061

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

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

METHOD BLANK: 2235790

Matrix: Water

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

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	03/26/18 13:30	

LABORATORY CONTROL SAMPLE: 2235791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	268	107	90-110	

SAMPLE DUPLICATE: 2235792

Parameter	Units	262983002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		5	

SAMPLE DUPLICATE: 2235793

Parameter	Units	262982006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	219	229	4	5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 262983

QC Batch: 3105 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 262983001, 262983002, 262983003, 262983004, 262983005, 262983006

METHOD BLANK: 16004 Matrix: Water
 Associated Lab Samples: 262983001, 262983002, 262983003, 262983004, 262983005, 262983006

Parameter	Units	Blank Result	Reporting 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	

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 SPIKE DUPLICATE: 16006 16007

Parameter	Units	262979001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max 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

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	

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REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: | Of |

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power - Coal Combustion Residuals	Report To: Jodi Abraham / Lauren Petty	Company Name: SCS/VOICES@SOUTHHEMCO.COM	Attention: SCS/VOICES@SOUTHHEMCO.COM	Company Name: SCS/VOICES@SOUTHHEMCO.COM	Attention: SCS/VOICES@SOUTHHEMCO.COM
Address: 2480 Manner Road Atlanta, GA 30339	Copy To: Geosyntec	Purchase Order #: SCS10346906	Address: Plant Hammond - Huffaker Road	Address: Plant Hammond - Huffaker Road	Address: Plant Hammond - Huffaker Road
Email: j.abraham@southhemco.com	Project Name: Standard 1A7	Project #: 404506-7239	Plant Manager: Betsy Mcdonell@pacelabs.com	Plant Manager: Betsy Mcdonell@pacelabs.com	Plant Manager: Betsy Mcdonell@pacelabs.com
Phone: (404) 506-7239			Plant Profile #: 328.3	Plant Profile #: 328.3	Plant Profile #: 328.3
Requested Due Date: Standard 1A7					

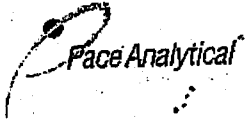
ITEM #	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	FOR CONTAINERS	PRESERVATIVES	ANALYSES TEST	TEMP IN C	RECEIVED ON	CUSTODY	SEALED	COOLER	SAMPLES
		START DATE	END DATE										
1	WT G	03/15/18	1010	03/15/18	1027	1	Y	2	19.00				
2	WT G	03/15/18	1040	03/15/18	1045	1	Y	2	20.40				
3	WT G	03/15/18	1410	03/15/18	1420	1	Y	2	3-4-18				
4	WT G	03/15/18	-	03/15/18	-	1	Y	2	3-4-18				
5	WT G	03/15/18	1700	03/15/18	1710	1	Y	2	3-4-18				
6	WT G	03/15/18	1825	03/15/18	1835	1	Y	2	3-4-18				
7													
8													
9													
10													
11													
12													

ADDITIONAL COMMENTS:		DATE: 03/15/18	TIME: 19:00
		DATE: 3/15/18	TIME: 20:40
		DATE: 3-4-18	TIME:
		DATE: 3/16/18	TIME: 30:09
SAMPLER NAME AND SIGNATURE:		DATE SIGNED: 3/15/18	
PRINT Name of SAMPLER: STEPHEN W. RANDALL		DATE SIGNED: 3/15/18	
SIGNATURE of SAMPLER: <i>Stephen W. Randall</i>		DATE SIGNED: 3/15/18	

NO#: 262983



Sample Condition Upon Receipt



Client Name: GIA Power

Project # **WO#: 262983**
 PM: BM Due Date: 03/26/18
 CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____
 Tracking #: _____
 Custody Seal on Cooler/Box Present: yes no Seals intact: yes no
 Packing Material: Bubble Wrap Bubble Bags None Other _____
 Thermometer Used 83 Type of Ice: Wet Blue None Samples on ice, cooling process has begun
 Cooler Temperature 1.9 Biological Tissue Is Frozen: Yes No
 Temp should be above freezing to 8°C

Date and Initials of person examining contents: 3/16/18 MK

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

Client Notification/ Resolution: _____ Field Data Required? Y / N
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

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

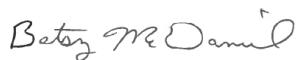
Dear Joju Abraham:

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,



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.



REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace 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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Sample: GWC-10		Lab ID: 265118001		Collected: 05/15/18 13:55	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 Preparation Method: EPA 3005A								
Barium	0.16	mg/L	0.010	0.00078	1	05/17/18 12:10	05/17/18 15:52	7440-39-3		
Calcium	48.4	mg/L	25.0	0.69	50	05/17/18 12:10	05/17/18 15:57	7440-70-2	M6	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0								
Chloride	1.4	mg/L	0.25	0.024	1		05/17/18 18:57	16887-00-6		
Sulfate	29.1	mg/L	1.0	0.017	1		05/17/18 18:57	14808-79-8	M1	

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Sample: FD-01		Lab ID: 265118002		Collected: 05/15/18 00:00	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 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 Method: EPA 300.0							
Chloride	1.3	mg/L	0.25	0.024	1		05/17/18 19:58	16887-00-6	
Sulfate	29.1	mg/L	1.0	0.017	1		05/17/18 19:58	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Sample: GWC-21		Lab ID: 265118003		Collected: 05/15/18 16:35		Received: 05/17/18 11:05		Matrix: 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	

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Sample: GWC-6		Lab ID: 265118004		Collected: 05/16/18 10:50		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 Preparation Method: EPA 3005A							
Boron	0.042	mg/L	0.040	0.0039	1	05/17/18 12:10	05/17/18 16:55	7440-42-8	

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Sample: GWC-8		Lab ID: 265118005		Collected: 05/16/18 12:35		Received: 05/17/18 11:05		Matrix: 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	

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Sample: FB-01		Lab ID: 265118006		Collected: 05/16/18 13:20	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 Preparation Method: EPA 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	

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

Sample: EB-01		Lab ID: 265118007		Collected: 05/16/18 13:25	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 Preparation Method: EPA 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	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 6305 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 265118001, 265118002, 265118004, 265118006, 265118007

METHOD BLANK: 30425 Matrix: Water
Associated Lab Samples: 265118001, 265118002, 265118004, 265118006, 265118007

Parameter	Units	Blank Result	Reporting 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	

LABORATORY CONTROL SAMPLE: 30426

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

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		265118001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265118

QC Batch: 6298 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 265118001, 265118002, 265118003, 265118005, 265118006, 265118007

METHOD BLANK: 30395 Matrix: Water
 Associated Lab Samples: 265118001, 265118002, 265118003, 265118005, 265118006, 265118007

Parameter	Units	Blank Result	Reporting 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 SPIKE DUPLICATE: 30397 30398

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		265118001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
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.

REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 265118

Client Name: GA Power

PM: BM Due Date: 05/21/18 CLIENT: GAPower - IIR

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used THRO82 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 4.18°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 5/17/18 [Signature]

Table with 16 rows of inspection items and checkboxes. Items include Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested (48 hr TAT), Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Samples checked for dechlorination, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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,



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.



REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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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

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265121

Lab ID	Sample ID	Method	Analysts	Analytes Reported
265121001	GWC-20	EPA 300.0	RLC	1
265121002	GWC-18	EPA 6020B	CSW	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265121

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265121

Sample: GWC-18		Lab ID: 265121002		Collected: 05/16/18 11:12	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 Preparation Method: EPA 3005A								
Calcium	40.0	mg/L	25.0	0.69	50	05/17/18 12:10	05/17/18 17:24	7440-70-2		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265121

QC Batch: 6305	Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A	Analysis Description: 6020B MET
Associated Lab Samples: 265121002	

METHOD BLANK: 30425 Matrix: Water
Associated Lab Samples: 265121002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	0.014	05/17/18 15:40	

LABORATORY CONTROL SAMPLE: 30426

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 30427 30428

Parameter	Units	265118001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 265121

QC Batch: 6298	Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0	Analysis Description: 300.0 IC Anions
Associated Lab Samples: 265121001	

METHOD BLANK: 30395 Matrix: Water
Associated Lab Samples: 265121001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
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
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 30397 30398

Parameter	Units	265118001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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.

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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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace 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		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company	Georgia Power - Coal Combustion Residuals	Report To	Lauren Petty / Joji Abraham	Attention:	SCSINVOICES@southernco.com
Address	42 Inverness Center Parkway Birmingham, AL 35242	Copy To	Geosyntec	Company Name	
Email	lpetty@southernco.com	Purchase Order #	SCS10349506	Pace Quote:	
Phone	(832)265-5614	Project Name	Hammond Hufaker Road Resample	Pace Project Manager	betsy.mcdaniel@pacelabs.com
Requested Due Date	2 DAY TAT	Project #		Pace Profile #	328 6
Regulatory Agency		State / Location		GA	

Page : 1 Of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES						ANALYSES TEST	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
			START DATE	START TIME				END DATE	END TIME	Unpreserved	H2SO4	HNO3	HCl				
1			05/15/18	1825	G	1838	1									2	
2			05/16/18	1108	G	1112	1									2	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	Received on	TEMP in C	Ice (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
* 2-day TAT	Moelia Mufson	05/17/18	10:00	Milee Narsary/Pace	5/17/18	1000	Y		4.8	Y	Y	Y	Y
				Cherub-Huber	5/17/18	1105	Y						

WO# : 265121

265121



Sample Condition Upon Receipt

WO#: 265121
PM: BM Due Date: 05/21/18
CLIENT: GAPower R

Client Name: GA Power

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Proj. Due Date:
Proj. Name:

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used THRO82 Type of Ice: No Blue None

Cooler Temperature 4.8 C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 5/17/18

Temp should be above freezing to 6 C

Table with 16 rows and 3 columns. Columns: Question, Yes/No/N/A checkboxes, and Comments. Includes items like Chain of Custody Present, Short Hold Time Analysis, Rush Turn Around Time Requested (48 hr TAT), etc.

Client Notification/ Resolution:
Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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,



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

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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

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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

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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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 2540C								
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	

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ANALYTICAL RESULTS

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

Sample: GWA-1		Lab ID: 2610158002		Collected: 10/04/18 12:06		Received: 10/05/18 11:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 2540C								
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	B	
Fluoride	0.17J	mg/L	0.30	0.029	1		10/10/18 16:18	16984-48-8		
Sulfate	5.2	mg/L	1.0	0.017	1		10/10/18 16:18	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Sample: FD-04		Lab ID: 2610158003		Collected: 10/04/18 00:00	Received: 10/05/18 11:30	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 2540C								
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	mg/L	1.0	0.017	1		10/10/18 19:20	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Sample: GWC-7		Lab ID: 2610158004		Collected: 10/04/18 14:12		Received: 10/05/18 11:30		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 2540C							
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 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	mg/L	10.0	0.17	10		10/11/18 02:58	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Sample: GWC-8		Lab ID: 2610158005		Collected: 10/04/18 16:02		Received: 10/05/18 11:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 2540C								
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		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

QC Batch: 15013 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

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

METHOD BLANK: 67190 Matrix: Water

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

Parameter	Units	Blank Result	Reporting 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	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610158

Parameter	Units	67194		67195		MS % Rec	MSD % Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
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	

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QUALITY CONTROL DATA

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

QC Batch: 14910 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610158001, 2610158002, 2610158003, 2610158004, 2610158005

LABORATORY CONTROL SAMPLE: 66856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	400	100	84-108	

SAMPLE DUPLICATE: 66857

Parameter	Units	2610112003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	238	232	3	10	

SAMPLE DUPLICATE: 66858

Parameter	Units	2610117001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	700	615	13	10	D6

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QUALITY CONTROL DATA

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

QC Batch: 15084 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610158001, 2610158002, 2610158003, 2610158004, 2610158005

METHOD BLANK: 67495 Matrix: Water
Associated Lab Samples: 2610158001, 2610158002, 2610158003, 2610158004, 2610158005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.16J	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	0.017	10/10/18 14:23	

LABORATORY CONTROL SAMPLE: 67496

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10	100	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67497 67498

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

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	

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REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Joju Abraham / Lauren Petty	Attention:	SCSInvoices@southernco.com
Address:	2480 Maner Road	Copy To:	Geosyntec	Company Name:	
	Atlanta, GA 30339	Purchase Order #:	SCS10348606	Address:	
Email:	jabraham@southernco.com	Project Name:	Plant Hammond - Huffaker Road	Pace Quote:	
Phone:	(404)506-7239	Requested Due Date:	Standard TAT	Pace Project Manager:	betsy.mcdaniel@pacelabs.com
		Project #:	GWC5B1	Pace Profile #:	328.3
Regulatory Agency		Slate / Location		GA	

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLER NAME AND SIGNATURE		RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ANALYSES TEST	Y/N	Requested Analysis Filtered (Y/N)		TEMP in C	Received on	Ice (Y/N)	Custody (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)	
			START	END			DATE	TIME									DATE	TIME							DATE
1	Drinking Water	DW	10/21/18	10/24	WT G	WT G	Modia Mustkus	10/21/18	10/24	10:34	10:50	Nardos Ciabina	10/4/18	18:00	Metals (App. III + State)	Y	Y	2							
2	Water	WT	10/21/18	11:43	WT G	WT G	Nardos Ciabina	10/21/18	10/24	11:43	12:06	Modia Mustkus	10/4/18	19:50	TDS Chloride, Fluoride, Sulfate	Y	Y	2							
3	Waste Water	WW	10/21/18	-	WT G	WT G	Modia Mustkus	10/21/18	10/24	-	-	Mike Nguyen / Pace	10/5/18	10:00	Metals (App. III + State)	Y	Y	2							
4	Product	P	10/21/18	13:57	WT G	WT G	Modia Mustkus	10/21/18	10/24	13:57	14:12	MDA Luman	10/5/18	11:30	Metals (App. III + State)	Y	Y	2							
5	Soil/Solid	SL	10/21/18	15:47	WT G	WT G	Modia Mustkus	10/21/18	10/24	15:47	16:02	MDA Luman	10/5/18	11:30	Metals (App. III + State)	Y	Y	2							
6	Oil	OL																							
7	Wipe	WP																							
8	Air	AR																							
9	Other	OT																							
10	Tissue	TS																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ANALYSES TEST	Y/N	Requested Analysis Filtered (Y/N)	TEMP in C	Received on	Ice (Y/N)	Custody (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Modia Mustkus	10/21/18	18:00	Nardos Ciabina	10/4/18	18:00	Metals (App. III + State)	Y	Y						
	Nardos Ciabina	10/4/18	19:50	Modia Mustkus	10/4/18	19:50	TDS Chloride, Fluoride, Sulfate	Y	Y						
	Modia Mustkus	10/5/18	10:00	Mike Nguyen / Pace	10/5/18	10:00	Metals (App. III + State)	Y	Y						
	MDA Luman	10/5/18	11:30	MDA Luman	10/5/18	11:30	Metals (App. III + State)	Y	Y						

WO#: 2610158

2610158

DATE Signed: 10/04/18

SIGNATURE of SAMPLER: Modia Mustkus

PRINT Name of SAMPLER: Modia Mustkus



Sample Condition Upon Receipt

Client Name: GAPower

Project # _____

WO#: 2610158

PM: BM Due Date: 10/12/18

CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

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

Cooler Temperature 4°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/05/18 MR

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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,



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

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610159001	GWA-2	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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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	B	
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
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		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

Sample: GWC-5 **Lab ID: 2610159002** Collected: 10/04/18 11:05 Received: 10/05/18 11:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 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	B
2540C Total Dissolved Solids Analytical Method: SM 2540C									
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	

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ANALYTICAL RESULTS

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

Sample: GWC-6		Lab ID: 2610159003		Collected: 10/04/18 12:58		Received: 10/05/18 11:30		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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	B
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
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	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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 Samples: 2610159001, 2610159002, 2610159003

METHOD BLANK: 67344 Matrix: Water
Associated Lab Samples: 2610159001, 2610159002, 2610159003

Parameter	Units	Blank Result	Reporting 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
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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67346		67347		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2610159001 Result	MS Spike Conc.	MSD Spike Conc.									
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		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

QC Batch: 14931 Analysis Method: SM 2540C
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
 Associated Lab Samples: 2610159001, 2610159002, 2610159003

LABORATORY CONTROL SAMPLE: 66900

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	406	102	84-108	

SAMPLE DUPLICATE: 66901

Parameter	Units	2610164001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	11.0J	17.0J	43	10	D6

SAMPLE DUPLICATE: 66902

Parameter	Units	2610162002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	135	128	5	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610159

QC Batch: 15084 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610159001, 2610159002, 2610159003

METHOD BLANK: 67495 Matrix: Water

Associated Lab Samples: 2610159001, 2610159002, 2610159003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.16J	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	0.017	10/10/18 14:23	

LABORATORY CONTROL SAMPLE: 67496

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10	100	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67497 67498

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

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

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

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

Section B Required Project Information: Report To: Jolu Abraham / Lauren Petty, Copy To: Geosyntec, Purchase Order #: SCS10348606, Project Name: Plant Hammond - Huffaker Road, Project #: GWC581

Section C Invoice Information: Attention: SCSinvoices@southernco.com, Company Name: Pace Analytical, Address: Pace Project Manager: beisy.mcdaniel@pacelabs.com, Pace Quote: 328.3, State / Location: GA

Page: Of

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES						ANALYSES TEST Y/N	Metals (App. III + State)	TDS Chloride, Fluoride, Sulfate	Residual Chlorine (Y/N)
			START DATE	START TIME				END DATE	END TIME	UNPRESERVED	H2SO4	HNO3	HCl				
1	GWA-2	WT	10/4/18	0937	10/4/18	0949	4	1	3								
2	GWC-5	WT	10/4/18	1055	10/4/18	1105	4	1	3								
3	GWC-6	WT	10/4/18	1248	10/4/18	1258	4	1	3								
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

ADDITIONAL COMMENTS

REQUISITIONED BY / AFFILIATION: R.D. Murray

DATE: 10/4/18

TIME: 1800

ACCEPTED BY / AFFILIATION: Nardos Tlahun

DATE: 10/4/18

TIME: 1800

RELINQUISHED BY / AFFILIATION: Nardos Tlahun

DATE: 10/4/18

TIME: 1950

ACCEPTED BY / AFFILIATION: M. Lee

DATE: 10/5/18

TIME: 1000

RELINQUISHED BY / AFFILIATION: M. Lee

DATE: 10/5/18

TIME: 1000

ACCEPTED BY / AFFILIATION: M. Lee

DATE: 10/5/18

TIME: 1130

RELINQUISHED BY / AFFILIATION: M. Lee

DATE: 10/5/18

TIME: 1130

ACCEPTED BY / AFFILIATION: M. Lee

DATE: 10/5/18

TIME: 1130

TEMP in C: 4°C

SAMPLE CONDITIONS: Received on Ice (Y/N), Custody Sealed (Y/N), Cooler (Y/N), Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE: R.D. Murray

PRINT Name of SAMPLER: R.D. Murray

SIGNATURE of SAMPLER: R.D. Murray

DATE Signed: 10/4/18

WO# : 2610159

2610159

Page 14 of 15



Sample Condition Upon Receipt

Client Name: GAP Power

Project # _____

WO#: 2610159

PM: **BM** Due Date: **10/12/18**

CLIENT: **GAPower-CCR**

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 4°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/05/18 MR

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

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,



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

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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

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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

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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

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ANALYTICAL RESULTS

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

Sample: GWA-3		Lab ID: 2610162001		Collected: 10/04/18 10:30		Received: 10/05/18 11:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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	B	
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
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	mg/L	1.0	0.017	1		10/10/18 23:55	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Sample: GWA-11		Lab ID: 2610162002		Collected: 10/04/18 12:10		Received: 10/05/18 11:30		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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	B
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
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	mg/L	1.0	0.017	1		10/11/18 00:41	14808-79-8	

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Sample: GWC-10		Lab ID: 2610162003		Collected: 10/04/18 13:35	Received: 10/05/18 11:30	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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	B	
2540C Total Dissolved Solids		Analytical Method: SM 2540C								
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		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Sample: GWC-22 **Lab ID: 2610162004** Collected: 10/04/18 14:40 Received: 10/05/18 11:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				

6020B MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 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	B

2540C Total Dissolved Solids

Analytical Method: SM 2540C

Total Dissolved Solids	215	mg/L	25.0	10.0	1		10/08/18 18:02		
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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	mg/L	1.0	0.017	1		10/10/18 22:01	14808-79-8	

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ANALYTICAL RESULTS

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			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 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 18:58	7440-43-9	
Calcium	48.6	mg/L	25.0	0.69	50	10/09/18 16:23	10/12/18 18:53	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	B
2540C Total Dissolved Solids Analytical Method: SM 2540C									
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	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

Sample: GWC-19 **Lab ID: 2610162006** Collected: 10/04/18 17:05 Received: 10/05/18 11:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				

6020B MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 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	B

2540C Total Dissolved Solids

Analytical Method: SM 2540C

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	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

QC Batch: 15051 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

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

METHOD BLANK: 67344 Matrix: Water

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

Parameter	Units	Blank Result	Reporting 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
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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67346			67347									
Parameter	Units	2610159001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Spike Conc.	Spike 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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610162

QC Batch: 14931 Analysis Method: SM 2540C
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
 Associated Lab Samples: 2610162001, 2610162002, 2610162003, 2610162004, 2610162005, 2610162006

LABORATORY CONTROL SAMPLE: 66900

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	406	102	84-108	

SAMPLE DUPLICATE: 66901

Parameter	Units	2610164001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	11.0J	17.0J	43	10	D6

SAMPLE DUPLICATE: 66902

Parameter	Units	2610162002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	135	128	5	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 15084 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610162001, 2610162002, 2610162003, 2610162004, 2610162005, 2610162006

METHOD BLANK: 67495 Matrix: Water
Associated Lab Samples: 2610162001, 2610162002, 2610162003, 2610162004, 2610162005, 2610162006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.16J	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	0.017	10/10/18 14:23	

LABORATORY CONTROL SAMPLE: 67496

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10	100	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67497 67498

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

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	

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REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Marner Road
 Atlanta, GA 30339
 Email: jbraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: 5/10/2018

Section B
Required Project Information:
 Report To: Joliz Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Huffaker Road
 Project #: GW579

Page: 1 Of 1

Section C
Invoice Information:
 Attention: SCSinvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Plant Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 328.3
 State / Location: GA

Section D
Requested Analysis Filtered (Y/N)

ITEM #	MATRIX	CODE	COLLECTED		DATE	TIME	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals (App. III + State)	TDS, Chloride, Fluoride, Sulfate	Requested Analysis Filtered (Y/N)	TEMP in C	Received on	Ice (Y/N)	Custody (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)	
			START DATE	START TIME																						END DATE
1	WT	DW	10-4-18	10:21	10-4-18	10:36	4	1								X		X								
2	WT	WT	10-4-18	11:55	10-4-18	12:10	4	1								X		X								
3	WT	WW	10-4-18	13:20	10-4-18	13:35	4	1								X		X								
4	WT	WP	10-4-18	14:24	10-4-18	14:40	4	1								X		X								
5	WT	WP	10-4-18	15:29	10-4-18	15:49	4	1								X		X								
6	WT	WP	10-4-18	16:44	10-4-18	17:05	4	1								X		X								
7																										
8																										
9																										
10																										
11																										
12																										

DG 10-04-2018

Section E
Additional Comments:
 DAN GIBBS
 Nardos Tilahun
 LEBLOW
 DATE: 10-4-18 18:00
 DATE: 10-4-18 19:50
 DATE: 10-5-18 1000
 DATE: 10-5-18 11:30
 ACCEPTED BY / AFFILIATION: Nardos Tilahun, LEBLOW, Mike Ngyron/Pace, Madalman
 DATE SIGNED: 10-04-2018

Section F
Barcode and Signatures:
 WO#: 2610162
 PRINT Name of SAMPLER: DAN GIBBS
 SIGNATURE of SAMPLER: [Signature]
 DATE SIGNED: 10-04-2018



Sample Condition Upon Receipt

Client Name: GA Power

Project # _____

WO#: 2610162
PM: BM Due Date: 10/12/18
CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 83

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 4°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/05/18 MR

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

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,



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

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace 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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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	B	
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		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 15129 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610212001

METHOD BLANK: 67679 Matrix: Water
Associated Lab Samples: 2610212001

Parameter	Units	Blank Result	Reporting 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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610212

Parameter	Units	2610208001		67681		67682		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
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			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 15066 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610212001

LABORATORY CONTROL SAMPLE: 67393

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	396	99	84-108	

SAMPLE DUPLICATE: 67394

Parameter	Units	2610166001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	10200	10100	1	10	

SAMPLE DUPLICATE: 67395

Parameter	Units	2610210001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	813	828	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 15085 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610212001

METHOD BLANK: 67500 Matrix: Water
Associated Lab Samples: 2610212001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	10/11/18 06:47	
Fluoride	mg/L	ND	0.30	0.029	10/11/18 06:47	
Sulfate	mg/L	ND	1.0	0.017	10/11/18 06:47	

LABORATORY CONTROL SAMPLE: 67501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67502 67503

Parameter	Units	67502		67503		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2610208001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
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

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REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace 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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
 Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Email: jabraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: *5/18/18*

Section B
 Required Project Information:
 Report To: Jaju Abraham / Lauren Peaty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Huffaker Road
 Project #: 3283

Section C
 Invoice Information:
 Attention: SCSINVOICES@southernco.com
 Company Name:
 Address:
 Pace Quote
 Pace Project Manager: betsy.mcdaniel@paceilabs.com
 Pace Profile #: 3283

Regulatory Agency
 State / Location
 GA

#	ITEM	MATRIX CODE DW: Drinking Water WW: Waste Water P: Product SL: Soil/Solid OI: Oil WI: Wipe AR: Air OT: Other TS: Tissue	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	# OF CONTAINERS	PRESERVATIVES			Analyses Test Y/N	Requested Analysis Filtered (Y/N)	TEMP in C	Received on	Custody (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)
				START DATE	END DATE			UNPRESERVED	H2SO4	HNO3							
1	GWC-9		WT	10/5/18 10:25	10/18/18 10:35	G	4	Unpreserved				X		10/18/18 14:15			
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

ADDITIONAL COMMENTS
 RELINQUISHED BY / AFFILIATION: *Rich Murray* 10/5/18 14:15
 ACCEPTED BY / AFFILIATION: *Malicia Wadsworth* 10/18/18 14:15
 SIGNATURE OF SAMPLER: *Rich Murray* DATE SIGNED: 10/5/18
 SIGNATURE OF SAMPLER: *Malicia Wadsworth* DATE SIGNED: 10/18/18
 SIGNATURE OF SAMPLER: *Charles Harte* DATE SIGNED: 10/18/18
 SIGNATURE OF SAMPLER: *Rich Murray* DATE SIGNED: 10/5/18

NO#: 2610212

2610212

Sample Condition Upon Receipt

WO#: 2610212

PM: BM
 CLIENT: GAPower-CCR
 Due Date: 10/15/18

Face Analytical

Client Name: GA Power

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #:

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used

082

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature

2.5°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/8/18 CA

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	#
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.	Rads present but not listed on COC (24 10/8/18)
-Includes date/time/ID/Analysis Matrix:			GW
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) <i>Rads</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

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,



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

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610208

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610208001	GWC-18	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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610208

Sample: GWC-18		Lab ID: 2610208001		Collected: 10/05/18 10:00		Received: 10/08/18 11:00		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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	B
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
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	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610208

Sample: GWC-20		Lab ID: 2610208002		Collected: 10/05/18 10:00		Received: 10/08/18 11:00		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 2540C							
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	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 15129 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610208001, 2610208002

METHOD BLANK: 67679 Matrix: Water
Associated Lab Samples: 2610208001, 2610208002

Parameter	Units	Blank Result	Reporting 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	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610208

Parameter	Units	2610208001		67681		67682		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
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			

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610208

QC Batch: 15066 Analysis Method: SM 2540C
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
 Associated Lab Samples: 2610208001, 2610208002

LABORATORY CONTROL SAMPLE: 67393

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	396	99	84-108	

SAMPLE DUPLICATE: 67394

Parameter	Units	2610166001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	10200	10100	1	10	

SAMPLE DUPLICATE: 67395

Parameter	Units	2610210001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	813	828	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 15085 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610208001, 2610208002

METHOD BLANK: 67500 Matrix: Water
Associated Lab Samples: 2610208001, 2610208002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	10/11/18 06:47	
Fluoride	mg/L	ND	0.30	0.029	10/11/18 06:47	
Sulfate	mg/L	ND	1.0	0.017	10/11/18 06:47	

LABORATORY CONTROL SAMPLE: 67501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67502 67503

Parameter	Units	67502		67503		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2610208001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
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

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REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace 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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manner Road
 Atlanta, GA 30339
 Email: jbraham@southernco.com
 Phone: (404)506-7239
 Requested Due Date: Standard Rate

Section B
Required Project Information:
 Report To: Joju Abraham / Lauren Petty
 Copy To: Geosynetic
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Huffaker Road
 Project #: 638638

Section C
Invoice Information:
 Attention: SCSInvoices@southernco.com
 Company Name
 Address
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 3283

Regulatory Agency
 State / Location: GA

Page: 1 Of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	RELINQUISHED BY / AFFILIATION		DATE		TIME	ACCEPTED BY / AFFILIATION		DATE		TIME	SAMPLE CONDITIONS		
			START	END			DATE	TIME	DATE	TIME		DATE	TIME	Received on	Temp in C		Sealed	Custody	Cooler
1	Drinking Water	DW	10/5/18	7:44	10/5/18	10:00	Dan GIBBS	10/05/2018	1300	10/05/2018	1300	Madia Mjumbun	10/05/18	1300					
2	Waste Water	WW	10/5/18	10:30	10/5/18	11:25	Madia Mjumbun	10/05/2018	0945	10/05/2018	0945	Mike Newton/Pace	10/05/18	0945					
3	Product	P					Charlan Harts	08/18	1100										
4	Soil/Solid	SL																	
5	Oil	OP																	
6	Wipe	WP																	
7	Air	AP																	
8	Other	OT																	
9	Tissue	TS																	
10																			
11																			
12																			

Requested Analysis Filtered (Y/N)

Analyses Test: Y/N

Metals (App III + State): X X

TDS Chloride, Fluoride, Sulfate: X X

Residual Chlorine (Y/N): N N

DATE Signed: 10-05-2018

SAMPLER NAME AND SIGNATURE: DAN GIBBS

PRINT Name of SAMPLER: DAN GIBBS

SIGNATURE of SAMPLER: [Signature]

DATE Signed: 10-05-2018

WO#: 2610208

2610208

Sample Condition Upon Receipt

WO#: 2610208

PM: BM

Due Date: 10/15/18

CLIENT: GAPower-CCR



Client Name: GAPower

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____
 Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.5°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C Comments: _____
 Date and Initials of person examining contents: 10/8/18 ca

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.	<u>Rads present but not listed on COC (2H 10/8/18)</u>
-Includes date/time/ID/Analysis Matrix: <u>CUV</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) <u>Rads</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased): _____			

Client Notification/ Resolution:
 Person Contacted: _____ Date/Time: _____ Field Data Required? Y / N
 Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

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

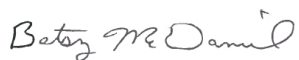
Dear Joju Abraham:

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,



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

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace 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

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Sample: GWC-23		Lab ID: 2610209001		Collected: 10/05/18 12:18		Received: 10/08/18 11:00		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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	B
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
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	

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

Sample: FB-05		Lab ID: 2610209002		Collected: 10/05/18 13:05	Received: 10/08/18 11:00	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 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 2540C								
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 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		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

QC Batch: 15185	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 2610209002	

METHOD BLANK: 67911 Matrix: Water
Associated Lab Samples: 2610209002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/11/18 16:47	

LABORATORY CONTROL SAMPLE: 67912

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67913 67914

Parameter	Units	2610090002		67914		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	0.95 ug/L	.0025	.0025	0.0032	0.0031	89	88	75-125	1	20

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QUALITY CONTROL DATA

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

QC Batch: 15129 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610209001, 2610209002

METHOD BLANK: 67679 Matrix: Water
Associated Lab Samples: 2610209001, 2610209002

Parameter	Units	Blank Result	Reporting 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	
Lithium	mg/L	ND	0.050	0.00097	10/12/18 19:18	
Molybdenum	mg/L	ND	0.010	0.0019	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	
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	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

LABORATORY CONTROL SAMPLE: 67680

Parameter	Units	Spike Conc.	LCS Result	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 SPIKE DUPLICATE: 67681 67682

Parameter	Units	2610208001		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
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				

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

QC Batch: 15066

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 2610209001, 2610209002

LABORATORY CONTROL SAMPLE: 67393

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	396	99	84-108	

SAMPLE DUPLICATE: 67394

Parameter	Units	2610166001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	10200	10100	1	10	

SAMPLE DUPLICATE: 67395

Parameter	Units	2610210001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	813	828	2	10	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610209

QC Batch: 15085 Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions

Associated Lab Samples: 2610209001, 2610209002

METHOD BLANK: 67500 Matrix: Water

Associated Lab Samples: 2610209001, 2610209002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	10/11/18 06:47	
Fluoride	mg/L	ND	0.30	0.029	10/11/18 06:47	
Sulfate	mg/L	ND	1.0	0.017	10/11/18 06:47	

LABORATORY CONTROL SAMPLE: 67501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67502 67503

Parameter	Units	67502		67503		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2610208001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
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

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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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace 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		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 Of 1

Section A

Required Client Information:

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

Section B

Required Project Information:

Report To: Jolu Abraham / Lauren Peity
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Hufaker Road
 Project #: GWC-23

Section C

Invoice Information:

Attention: SCSinvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: beasy.mcdaniel@pacelabs.com
 Pace Profile #: 3283

Regulatory Agency

State / Location: GA

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	TEMP in C	Received on	Custody	Sealed	Cooler	Samples Intact (Y/N)
			START DATE	START TIME													
1	Drinking Water	DW	10/10/18	1204	G	WT G	4	H2SO4	Metals (App III + State)	N	N						
2	Waste Water	WT	10/10/18	1218	G	WT G	4	Unpreserved	TDS Chloride Fluoride Sulfate	N	N						
3	Waste Water	WT	10/10/18	1305	G	WT G	4	Unpreserved	Metals (App III + State)	N	N						
4	Waste Water	WT															
5	Waste Water	WT															
6	Waste Water	WT															
7	Waste Water	WT															
8	Waste Water	WT															
9	Waste Water	WT															
10	Waste Water	WT															
11	Waste Water	WT															
12	Waste Water	WT															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Medicia Mufson	10/10/18	0945	Mike Nguyen / Pace	10/18/18	0945	Y Y Y X
	Medicia Mufson	10/10/18	1305	Charles Hank	10/18/18	1100	Y Y Y X

WO#: 2610209

2610209

Sample Condition Upon Receipt

WO# : 2610209

PM: BM

Due Date: 10/15/18

CLIENT: GAPower-CCR

Proj. Due Date:
Proj. Name:



Client Name: GAPower

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____
Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____
Thermometer Used: 082

Cooler Temperature: 2.5°C
Temp should be above freezing to 6°C
Type of Ice: Wet Blue None Samples on ice, cooling process has begun
Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/8/18 CA

Item	Yes	No	N/A	Comments
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. #
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: <u>GW</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Rads present but not listed on coc (2H 10/8/18)
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) <u>Rads</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed
Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	16.
Pace Trip Blank Lot # (if purchased): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Client Notification/ Resolution:
 Person Contacted: _____ Date/Time: _____ Field Data Required? Y / N
 Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

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,



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

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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

REPORT OF LABORATORY ANALYSIS

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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

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SAMPLE ANALYTE COUNT

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

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610116001	FB-03	EPA 6020B	CSW	19
		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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

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

Sample: FB-03		Lab ID: 2610116001		Collected: 10/03/18 16:49	Received: 10/04/18 12:30	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Preparation Method: EPA 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 2540C								
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	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/09/18 07:23	16984-48-8		
Sulfate	0.056J	mg/L	1.0	0.017	1		10/09/18 07:23	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

Sample: EB-02		Lab ID: 2610116002		Collected: 10/03/18 17:01		Received: 10/04/18 12:30		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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 Method: EPA 7470A Preparation Method: EPA 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 Method: EPA 300.0								
Chloride	0.098J	mg/L	0.25	0.024	1		10/09/18 09:16	16887-00-6	B	
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		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 15032 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2610116001, 2610116002

METHOD BLANK: 67254 Matrix: Water
Associated Lab Samples: 2610116001, 2610116002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/10/18 11:47	

LABORATORY CONTROL SAMPLE: 67255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67256 67257

Parameter	Units	269791027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0026	0.0026	103	105	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 15013 Analysis Method: 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

Parameter	Units	Blank Result	Reporting 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

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	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	
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	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610116

LABORATORY CONTROL SAMPLE: 67191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.10	100	80-120	
Zinc	mg/L	.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67194 67195

Parameter	Units	2610117002		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	
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	
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	

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QUALITY CONTROL DATA

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 Dissolved Solids
Associated Lab Samples: 2610116001	

LABORATORY CONTROL SAMPLE: 66856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	400	100	84-108	

SAMPLE DUPLICATE: 66857

Parameter	Units	2610112003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	238	232	3	10	

SAMPLE DUPLICATE: 66858

Parameter	Units	2610117001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	700	615	13	10	D6

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QUALITY CONTROL DATA

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

QC Batch: 14939 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610116001, 2610116002

METHOD BLANK: 66933 Matrix: Water
Associated Lab Samples: 2610116001, 2610116002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.078J	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	

LABORATORY CONTROL SAMPLE: 66934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	11.0	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 66935 66936

Parameter	Units	2610035001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max 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

Parameter	Units	2610037001 Result	Spike Conc.	MS Result	MS % Rec	% 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	

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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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road
Pace 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		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Report To: Georgia Power - Coal Combustion Residuals
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Maner Road
 Atlanta, GA 30339
 Phone: (404)506-7239 Fax: _____
 Email: jabraham@southernco.com
 Requested Due Date: Standard

Section B Required Project Information: Report To: Joy Abraham / Lauren Petty
 Company Name: Geosyntec
 Address: _____
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Huffaker Road
 Project #: 6206301

Section C Invoice Information: Attention: SCSinvoices@southernco.com
 Company Name: _____
 Address: _____
 Pace Quote: _____
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 3283
 State / Location: GA

Page: 1 Of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives	Analyses Test	Requested Analysis Filtered (Y/N)	TEMP in C	Received on	Ice (Y/N)	Custody	Sealed Cooler (Y/N)	Samples Intact (Y/N)
			START DATE	START TIME		END DATE	END TIME										
1	Drinking Water	DW	10/01/18	16:39	G	10/01/18	16:49	4		Metals (App. III + State) *	N						
2	Drinking Water	DW	10/03/18	16:51	G	10/03/18	17:01	4		TDS Chloride, Fluoride, Sulfate	N						
3	Drinking Water	DW								Residual Chlorine (Y/N)	N						
4	Drinking Water	DW															
5	Drinking Water	DW															
6	Drinking Water	DW															
7	Drinking Water	DW															
8	Drinking Water	DW															
9	Drinking Water	DW															
10	Drinking Water	DW															
11	Drinking Water	DW															
12	Drinking Water	DW															

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION: Naelia Mustus DATE: 10/01/18 TIME: 17:45

ACCEPTED BY / AFFILIATION: Nardos Tilahun DATE: 10/3/18 TIME: 17:45

RELINQUISHED BY / AFFILIATION: Nardos Tilahun DATE: 10/3/18 TIME: 19:30

ACCEPTED BY / AFFILIATION: Mike Ngara/Pace DATE: 10/4/18 TIME: 1000

RELINQUISHED BY / AFFILIATION: Naelia Mustus DATE: 10/4/18 TIME: 12:30

ACCEPTED BY / AFFILIATION: Naelia Mustus DATE: 10/03/18 TIME: 1000

SAMPLER NAME AND SIGNATURE: Naelia Mustus

PRINT Name of SAMPLER: Naelia Mustus

SIGNATURE of SAMPLER: Naelia Mustus

DATE Signed: 10/03/18

WO# : 2610116

2610116



Sample Condition Upon Receipt

Client Name: GIA Power

Project # _____

WO#: 2610116

PM: **BM** Due Date: **10/11/18**

CLIENT: **GA Power-CCR**

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used S3

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 2°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: <u>10/04/18 MR</u>
--

Temp should be above freezing to 6°C

Comments: _____

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

Client Notification/ Resolution: _____

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

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)

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,



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

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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

REPORT OF LABORATORY ANALYSIS

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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

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SAMPLE ANALYTE COUNT

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

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2610161001	FB-04	EPA 6020B	CSW	19
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

Sample: FB-04		Lab ID: 2610161001		Collected: 10/04/18 17:00	Received: 10/05/18 11:30	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 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	B	
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 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 2540C								
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	B	
Fluoride	ND	mg/L	0.30	0.029	1		10/10/18 19:43	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		10/10/18 19:43	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

QC Batch: 15032

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2610161001

METHOD BLANK: 67254

Matrix: Water

Associated Lab Samples: 2610161001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/10/18 11:47	

LABORATORY CONTROL SAMPLE: 67255

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67256

67257

Parameter	Units	269791027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0026	0.0026	103	105	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

QC Batch: 15051 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2610161001

METHOD BLANK: 67344 Matrix: Water
Associated Lab Samples: 2610161001

Parameter	Units	Blank Result	Reporting 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

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	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	

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QUALITY CONTROL DATA

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

LABORATORY CONTROL SAMPLE: 67345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vanadium	mg/L	.1	0.11	105	80-120	
Zinc	mg/L	.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67346 67347

Parameter	Units	2610159001		67346		67347		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
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	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

QC Batch: 14931	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2610161001	

LABORATORY CONTROL SAMPLE: 66900

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	406	102	84-108	

SAMPLE DUPLICATE: 66901

Parameter	Units	2610164001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	11.0J	17.0J	43	10	D6

SAMPLE DUPLICATE: 66902

Parameter	Units	2610162002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	135	128	5	10	

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2610161

QC Batch: 15084	Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0	Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2610161001	

METHOD BLANK: 67495 Matrix: Water

Associated Lab Samples: 2610161001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.16J	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	0.017	10/10/18 14:23	

LABORATORY CONTROL SAMPLE: 67496

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.5	105	90-110	
Fluoride	mg/L	10	10	100	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 67497 67498

Parameter	Units	2610158001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		
										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

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

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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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road
Pace 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		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

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

Section B
Report To: Jolu Abraham / Lauren Petty
 Copy To: Geosyntec
 Purchase Order #: SCS10348606
 Project Name: Plant Hammond - Hurflaker Road
 Project #:

Section C
Invoice Information:
 Attention: SCSinvoices@southernco.com
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: betsy.mcdaniel@pacelabs.com
 Pace Profile #: 328.3
 State / Location: GA

Regulatory Agency
State / Location
 GA

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST	Y/N	Requested Analysis Filtered (Y/N)		TEMP in C	Received on	Ice (Y/N)	Custody	Sealed Cooler (Y/N)	Samples Intact (Y/N)
			START DATE	START TIME							END DATE	END TIME						
1	Drinking Water	DW	10/14/18	1645	10/14/18	1700	4	Unpreserved	H2SO4	Y	Y	Y	10/14/18	1800				
2	Waste Water	WW						NaOH	Metals (App. III + State)	Y	Y	Y						
3	Waste Water	WW						HCl	TDS, Chloride, Fluoride, Sulfate	Y	Y	Y						
4	Product	P						Other	Metals Apprv **	Y	Y	Y						
5	Soil/Solid	SL																
6	Oil	OL																
7	Wipe	WP																
8	Air	AR																
9	Other	OT																
10	Tissue	TS																
11																		
12																		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Noelia Moskos	10/14/18	1800	Nardos Tikhon	10/14/18	1800	
Metals Apprv: Li, Hg, Mo	Nardos Tikhon	10/14/18	1950	EBLAW	10/14/18	1950	
	EBLAW	10/15/18	1000	Milee Noyon	10/15/18	1000	
				Mda Maman	10/05/18	1130	487

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Noelia Moskos
 SIGNATURE of SAMPLER: Noelia Moskos
 DATE Signed: 10/04/18

WO#: 2610161

2610161



Sample Condition Upon Receipt

Client Name: GFA Power

Project # _____

WO#: 2610161

PM: BM Due Date: 10/12/18

CLIENT: GFA Power-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

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

Cooler Temperature 4°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/05/18 MR

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

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,



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

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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

REPORT OF LABORATORY ANALYSIS

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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

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2612619001	GWC-6	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

REPORT OF LABORATORY ANALYSIS

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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	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	110	mg/L	10.0	0.17	10		12/14/18 12:54	14808-79-8	M6

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

Sample: GWC-8		Lab ID: 2612619002		Collected: 12/11/18 12:30	Received: 12/12/18 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
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		

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

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

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

Sample: GWC-10		Lab ID: 2612619004		Collected: 12/11/18 10:15	Received: 12/12/18 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
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 Method: EPA 300.0								
Chloride	1.9	mg/L	0.25	0.024	1		12/14/18 17:12	16887-00-6		

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

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

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: GWC-21									
Lab ID: 2612619006									
Collected: 12/11/18 14:40 Received: 12/12/18 16:15 Matrix: Water									
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Nickel	0.0052J	mg/L	0.010	0.00095	1	12/14/18 12:46	12/14/18 19:22	7440-02-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

Sample: EB-01		Lab ID: 2612619007		Collected: 12/11/18 15:50	Received: 12/12/18 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
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	B	
Sulfate	ND	mg/L	1.0	0.017	1		12/14/18 17:55	14808-79-8		

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

Sample: FD-1		Lab ID: 2612619008		Collected: 12/11/18 00:00	Received: 12/12/18 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
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 Method: EPA 300.0								
Chloride	1.8	mg/L	0.25	0.024	1		12/14/18 19:41	16887-00-6		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

QC Batch: 18932 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

Associated Lab Samples: 2612619002, 2612619004, 2612619006, 2612619007, 2612619008

METHOD BLANK: 85500 Matrix: Water

Associated Lab Samples: 2612619002, 2612619004, 2612619006, 2612619007, 2612619008

Parameter	Units	Blank Result	Reporting 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	
Nickel	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

Parameter	Units	2612619002		85503		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2612619

QC Batch: 18863

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 2612619001, 2612619002, 2612619003, 2612619004, 2612619005, 2612619007, 2612619008

METHOD BLANK: 85072

Matrix: Water

Associated Lab Samples: 2612619001, 2612619002, 2612619003, 2612619004, 2612619005, 2612619007, 2612619008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.072J	0.25	0.024	12/14/18 12:12	
Sulfate	mg/L	ND	1.0	0.017	12/14/18 12:12	

LABORATORY CONTROL SAMPLE: 85073

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 85074

85075

Parameter	Units	2612619001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Chloride	mg/L	2.9	100	101	100	104	99	101	90-110	3	15	
Sulfate	mg/L	110	100	199	100	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.

REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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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		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Face Analytical

Client Name: GIA Power

Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #: _____

WO#: 2612619

PM: BM Due Date: 12/14/18

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

CLIENT: GAPower-CCR

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 83 Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Cooler Temperature 1.5 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 12/12/18 [Signature]

Temp should be above freezing to 6°C Comments: _____

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

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,



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

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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

REPORT OF LABORATORY ANALYSIS

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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

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant Hammond - Huffaker Road

Pace 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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2613682

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: GWC-8									
Lab ID: 2613682001									
Collected: 01/11/19 11:37									
Received: 01/14/19 12:34									
Matrix: Water									
Analytical Method: EPA 300.0									
Chloride	2.8	mg/L	0.25	0.024	1		01/15/19 22:03	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2613682

Sample: GWC-10		Lab ID: 2613682002		Collected: 01/11/19 13:11	Received: 01/14/19 12:34	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Barium	0.17	mg/L	0.010	0.00078	1	01/15/19 10:29	01/15/19 15:33	7440-39-3		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2613682

QC Batch: 20589	Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A	Analysis Description: 6020B MET
Associated Lab Samples: 2613682002	

METHOD BLANK: 92498 Matrix: Water

Associated Lab Samples: 2613682002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	mg/L	ND	0.010	0.00078	01/15/19 15:21	

LABORATORY CONTROL SAMPLE: 92499

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 92500 92501

Parameter	Units	2613682002		92501		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Barium	mg/L	0.17	0.1	0.1	0.27	0.27	104	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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond - Huffaker Road

Pace Project No.: 2613682

QC Batch: 20597	Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0	Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2613682001	

METHOD BLANK: 92510 Matrix: Water

Associated Lab Samples: 2613682001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.13J	0.25	0.024	01/15/19 21:20	

LABORATORY CONTROL SAMPLE: 92511

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.8	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 92512 92513

Parameter	Units	92512		92513		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2613682001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Chloride	mg/L	2.8	10	10	12.1	12.1	93	93	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.

REPORT OF LABORATORY ANALYSIS

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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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond - Huffaker Road

Pace 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		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2613682

Client Name: GAPower

PM: BM

Due Date: 01/21/19

CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 5.3°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 1/14/19 car

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Page 12 of 12 Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Data Validation Reports

Memorandum

Date: April 24, 2018
To: Whitney Law
From: Mary Tyler
Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverables – Pace Analytical Services, LLC Project Numbers 262895, 262896, 262979, 262980, 262982 and 262983**

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
- 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

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

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

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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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 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 Method Blank

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 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

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 RL

1.8 Field Duplicate

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 Sensitivity

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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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 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 Holding Time

The holding time for the mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

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 Matrix Spike/Matrix Spike Duplicate

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 Laboratory Control Sample

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 Field Duplicate

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 Sensitivity

The samples were reported to the MDLs. 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 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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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 Method Blank

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 Matrix Spike/Matrix Spike Duplicate

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.

No MS/MSD pairs were reported for TDS.

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-

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 Laboratory Duplicate

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 Laboratory Control Sample

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 Field Duplicate

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 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. The D6 and M1 flags were 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.

- 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
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.

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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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 Method Blank

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 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

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 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 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 Field Blank

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

1.8 Field Duplicate

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

1.9 Sensitivity

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.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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 Overall Assessment

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

2.2 Holding Times

The holding time for the anion analysis of a water sample is 28 days from sample collection to analysis.

2.3 Method Blank

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 Matrix Spike/Matrix Spike Duplicate

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	M-
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 Laboratory Control Sample

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 Field Duplicate

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 Sensitivity

The samples were reported to the MDLs. 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. 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.

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.

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

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

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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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 Method Blank

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 (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
GWA-2	Zinc	0.0041	J B	0.0041	U*	BL
GWC-5	Zinc	0.0028	J B	0.0028	U*	BL
GWC-6	Zinc	0.0039	J B	0.0039	U*	BL
FB-04	Zinc	0.0042	J B	0.0042	U*	BL
GWA-3	Zinc	0.0043	J B	0.0043	U*	BL
GWA-11	Zinc	0.0046	J B	0.0046	U*	BL
GWC-10	Zinc	0.0033	J B	0.0033	U*	BL
GWC-22	Zinc	0.0030	J B	0.0030	U*	BL
GWC-21	Zinc	0.0077	J B	0.0077	U*	BL
GWC-19	Zinc	0.013	B	0.013	U*	BL
GWC-18	Zinc	0.0029	J B	0.0029	U*	BL
GWC-23	Zinc	0.0048	J B	0.0048	U*	BL
FB-05	Zinc	0.010	B	0.010	U*	BL
GWC-9	Zinc	0.0044	J B	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 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

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 RL. 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 Field Duplicate

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 Sensitivity

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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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 Holding Time

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 Method Blank

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 Matrix Spike/Matrix Spike Duplicate

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 Laboratory Control Sample

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 Field Duplicate

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 $< RL$) was demonstrated between the field duplicate and the original sample GWC-7. **Sensitivity**

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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Blank
- ⊗ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverables Review

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 Holding Times

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 Method Blank

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	J B	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 Matrix Spike/Matrix Spike Duplicate

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 Laboratory Control Sample

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 Laboratory Duplicate

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 Field Duplicate

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 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. 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

Reason Code	Explanation
BL	Laboratory blank contamination. The result should be considered "not-detected."
FD	Field duplicate imprecision.

Memorandum

Date: December 20, 2018
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: Stage 2A Data Validations - Level II Data Deliverable – Pace 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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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 Holding Time

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 Method Blank

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 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

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 Field Duplicate

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 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

1.9 Electronic Data Deliverables (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The 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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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 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 Holding Times

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 Method Blank

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	J B	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 Matrix Spike/Matrix Spike Duplicate

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 Laboratory Control Sample

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 **Field Duplicate**

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 $< RL$) was demonstrated between the field duplicate and the original sample GWC-10.

2.8 **Sensitivity**

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

2.9 **Electronic Data Deliverable Review**

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The 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

Reason Code	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.

Memorandum

Date: January 17, 2019
To: Whitney Law
From: Kristoffer Henderson
CC: J. Caprio
Subject: **Stage 2A Data Validations - Level II Data Deliverable – Pace 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,

- 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
2613682001	GWC-8

Laboratory ID	Client ID
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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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%.

1.2 Holding Time

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 Method Blank

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 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

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 Field Duplicate

Field duplicates were not collected with the sample set.

1.8 Sensitivity

The samples were reported to the MDL. Elevated nondetect results were not reported.

1.9 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. 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 (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) 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 Overall Assessment

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 Holding Times

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 Method Blank

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 Matrix Spike/Matrix Spike Duplicate

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 Laboratory Control Sample

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 Field Duplicate

Field duplicates were not collected with the sample set.

2.8 Sensitivity

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

2.9 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

* * * * *

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

Reason Code	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

Product Name: Low-Flow System

Date: 2018-03-14 18:32:10

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .250 in
Tubing Length 39 ft

Pump placement from TOC ft

Well Information:

Well ID GWA-1
Well diameter 2 in
Well Total Depth 40.07 ft
Screen Length 10 ft
Depth to Water 10.59 ft

Pumping Information:

Final Pumping Rate 130 mL/min
Total System Volume 0.4664565 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-14 17:01:50

Project Information:

Operator Name Noelia Muskus/Stephen Randall
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 501336
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type Polyethylene
Tubing Diameter 0.250 in
Tubing Length 21.11 ft

Pump placement from TOC ft

Well Information:

Well ID GWA-2
Well diameter 2.0 in
Well Total Depth 26.11 ft
Screen Length 10 ft
Depth to Water 6.05 ft

Pumping Information:

Final Pumping Rate 160 mL/min
Total System Volume 0.2937692 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 6.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-15 10:25:54

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .250 in
Tubing Length 20 ft

Pump placement from TOC ft

Well Information:

Well ID GWA-3
Well diameter 2 in
Well Total Depth 21.60 ft
Screen Length 10 ft
Depth to Water 4.62 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.2830546 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-03-15 11:20:31

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .250 in
Tubing Length 20 ft

Pump placement from TOC ft

Well Information:

Well ID GWA-4
Well diameter 2 in
Well Total Depth 21.76 ft
Screen Length 10 ft
Depth to Water 8.65 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.2830546 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-15 12:42:47

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .250 in
Tubing Length 36 ft

Pump placement from TOC ft

Well Information:

Well ID GWA-11
Well diameter 2 in
Well Total Depth 36.45 ft
Screen Length 10 ft
Depth to Water 15.67 ft

Pumping Information:

Final Pumping Rate 130 mL/min
Total System Volume 0.4374984 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 3.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-16 12:12:03

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .250 in
Tubing Length 20 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-5
Well diameter 2 in
Well Total Depth 21.72 ft
Screen Length 10 ft
Depth to Water 4.45 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.2830546 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-16 12:05:35

Project Information:

Operator Name Noelia Muskus/Stephen Randall
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 501336
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type Polyethylene
Tubing Diameter 0.250 in
Tubing Length 38.09 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-6
Well diameter 2.0 in
Well Total Depth 43.09 ft
Screen Length 10 ft
Depth to Water 14.82 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.4576725 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-15 16:50:11

Project Information:

Operator Name Noelia Muskus/Stephen Randall
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 501336
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type Polyethylene
Tubing Diameter 0.250 in
Tubing Length 27.29 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-7
Well diameter 2.0 in
Well Total Depth 32.29 ft
Screen Length 10 ft
Depth to Water 13.65 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.3534231 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-14 19:29:18

Project Information:

Operator Name Noelia Muskus/Stephen Randall
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 501336
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type Polyethylene
Tubing Diameter 0.250 in
Tubing Length 22.62 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-8
Well diameter 2 in
Well Total Depth 27.62 ft
Screen Length 10 ft
Depth to Water 10.37 ft

Pumping Information:

Final Pumping Rate 170 mL/min
Total System Volume 0.3083448 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 11.85 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-15 18:23:05

Project Information:

Operator Name Noelia Muskus/Stephen Randall
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 501336
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type Polyethylene
Tubing Diameter 0.250 in
Tubing Length 47.50 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-9
Well diameter 2.0 in
Well Total Depth 52.50 ft
Screen Length 10 ft
Depth to Water 12.68 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5485048 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-15 13:43:32

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .250 in
Tubing Length 33.5 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-10
Well diameter 2 in
Well Total Depth 34.53 ft
Screen Length 10 ft
Depth to Water 12.60 ft

Pumping Information:

Final Pumping Rate 160 mL/min
Total System Volume 0.4133665 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 2.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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									
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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-16 10:43:22

Project Information:

Operator Name Noelia Muskus/Stephen Randall
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 501336
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type Polyethylene
Tubing Diameter 0.250 in
Tubing Length 52.17 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-18
Well diameter 2.0 in
Well Total Depth 57.17 ft
Screen Length 10 ft
Depth to Water 12.49 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.593583 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-15 17:19:08

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .250 in
Tubing Length 57 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-19
Well diameter 2 in
Well Total Depth 57.0 ft
Screen Length 10 ft
Depth to Water 18.16 ft

Pumping Information:

Final Pumping Rate 130 mL/min
Total System Volume 0.6402057 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 2.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-16 10:48:03

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .250 in
Tubing Length 30 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-20
Well diameter 2 in
Well Total Depth 31.45 ft
Screen Length 10 ft
Depth to Water 3.01 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.3795819 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-15 16:11:45

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .250 in
Tubing Length 18 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-21
Well diameter 2 in
Well Total Depth 18.50 ft
Screen Length 10 ft
Depth to Water 4.11 ft

Pumping Information:

Final Pumping Rate 125 mL/min
Total System Volume 0.2637492 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 1.875 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-03-15 15:21:44

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter .250 in
Tubing Length 42 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-22
Well diameter 2 in
Well Total Depth 42.30 ft
Screen Length 10 ft
Depth to Water 1.18 ft

Pumping Information:

Final Pumping Rate 165 mL/min
Total System Volume 0.4954147 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 7.425 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Grab Samples

Log: Huffaker Rd Landfill- 1 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: SmarTROLLå,,ç Battery Pack
 Battery SN: 466646
 Device Type: SmarTROLLå,,ç MP
 Device SN: 501336

Created	Baro (mbar)	Temp (C)	RDO (mg/L)	RDO Sat (%)	pH (pH)	ORP (mV)	Act Cond (ÅµS/cm)	Sp Cond (ÅµS/cm)	Salinity (psu)	Resist (Ohm-cm)	Density (g/cm^3)	TDS (ppt)	Depth (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
3/15/2018 12:07		996.2	15.47	0.23	2.3	7.04	91.5	290.1	354.6	0.2	3447	0.999	0	0	0.001	16.5
3/15/2018 12:12		996.1	15.67	0.22	2.2	7.03	91.1	289.4	352.2	0.2	3455	0.999	0	-0.01	-0.003	17.3
3/15/2018 12:17		996.2	15.84	0.22	2.3	7.03	90.9	288.8	350.1	0.2	3463	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 13:37		995.2	17.67	0	0	7.04	84	277.1	322.2	0.2	3609	0.999	0	-0.15	-0.065	37.4
3/15/2018 13:42		995.2	17.71	0	0	7.03	83.3	277.2	322.1	0.2	3607	0.999	0	-0.11	-0.046	37.2
3/15/2018 13:47		995	17.8	0	0	7.04	82.5	276	320	0.2	3623	0.999	0	-0.12	-0.053	37.5
3/15/2018 13:52		994.8	17.79	0	0	7.04	82.4	273.6	317.3	0.2	3655	0.999	0	-0.12	-0.051	33.4
3/15/2018 13:57		994.7	17.8	0	0	7.04	81.9	272	315.3	0.2	3677	0.999	0	-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

GROUNDWATER SAMPLING LOG SHEET

Client: SCS Project No.: GW6581 Sampling Date: 03/15/18
 Site: Huffaker Rd Landfill Location: Plant Hammond Sampler's Name: Stephen Randall
 Well ID: GWC-23 Pump Type/Model: Peristaltic / Alexis Sample Collection Time: 1410
 Total Depth (ft): 50.17 Tubing Material: Polyethylene Sample Purge Rate (mL/min): 130
 Depth to Water (ft): 7.76 Pump Intake Depth (ft): 45.17 Sample ID: GWC-23
 Well Diameter (in): 2 Start/Stop Purge Time: 1045/1401 (PM) 1410 Laboratory Analyses: Metals, ions, TDS
 Well Volume (gal) = 0.041d²h: 6.96 Purge Rate (mL/min): 150 - 130
 Well Volume (L) = gal * 3.785: 26.33 Total Purge Volume (L): 26.25
 d = well diameter (inches) h = length of water column
 Well Type: Flush Stick Up Purge Method: Low Flow Well Volume Other: QA/QC Collected? No
 Well Lock: Yes No Sampling Method: Pump Discharge Other: QA/QC I.D.
 Well Cap Condition: Good Replace
 Well Tag Present: Yes No

All sample containers requiring chemical preservation properly preserved prior to demob from well? Yes No

Time	Temp. (°C)	Spec. Cond. (µS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTUs)	Purge Rate (mL/min)	Purged Volume (L)	H ₂ O Depth (ft btoc)	Notes (Purge method, water clarity, odor, purge rate, issues with)
1050	13.53	366.50	1.39	6.90	99.10	39.40	150	0.50	8.01	Red particulates in purge
1055	14.39	357.70	0.83	6.98	96.80	39.60	150	1.50	8.04	
1100	14.58	370.00	0.67	7.00	96.40	36.30	150	2.00	8.04	
1105	14.71	368.20	0.62	7.01	95.90	27.00	150	2.90	8.04	
1110	14.89	366.80	0.57	7.02	95.60	30.40	150	3.75	8.07	
1115	14.94	366.50	0.49	7.03	95.20	26.29	150	4.40	8.07	
1120	15.02	364.90	0.43	7.03	95.00	NM 24.20	150	5.20	8.07	Turb. 24.00
1125	15.09	364.70	0.39	7.03	94.90	18.70	150	5.80	8.07	
1130	15.44	361.30	0.34	7.03	94.50	17.00	150	6.60	8.09	
1135	15.30	361.20	0.32	7.03	94.20	22.40	150	7.50	8.09	
1140	15.29	360.10	0.30	7.03	93.90	13.60	150	8.00	8.07	
1145	15.48	360.70	0.27	7.03	93.80	11.10	150	9.00	8.07	
1150	15.39	359.30	0.26	7.03	93.20	11.30	150	9.50	8.07	
1155	15.25	358.70	0.25	7.04	92.90	10.21	150	10.50	8.07	
1200	15.30	356.00	0.24	7.04	91.90	10.71	150	10.75	8.07	
1205	15.47	354.60	0.23	7.04	91.50	10.18	150	11.50	8.07	
1210	15.67	352.20	0.22	7.03	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	8.07	
1220	16.00	349.00	0.38	7.03	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	



GROUNDWATER SAMPLING LOG SHEET

Client: SCS Project No.: GW6581 Sampling Date: 03/15/18
 Site: Huffman Rd landfill Location: Plant Hammer Sampler's Name: Stephen Randall
 Well ID: GWC-23 Pump Type/Model: Peristaltic / Alexis Sample Collection Time: 1410
 Total Depth (ft): 50.17 Tubing Material: Polyethylene Sample Purge Rate (mL/min): 130
 Depth to Water (ft): 7.76 Pump Intake Depth (ft): 45.17 Sample ID: GWC-23
 Well Diameter (in): 2 Start/Stop Purge Time: 1045/1410 Laboratory Analyses: Metals, ions, TDS
 Well Volume (gal) = 0.041d²h: 6.96 Purge Rate (mL/min): 150-130
 Well Volume (L) = gal * 3.785: 26.33 Total Purge Volume (L): 26.25
 d = well diameter (inches) h = length of water column
 Well Type: Flush Stick Up Purge Method: Low-Flow Well Volume Other: No
 Well Lock: Yes No Sampling Method: Pump Discharge Other: —
 Well Cap Condition: Good Replace
 Well Tag Present: Yes No

All sample containers requiring chemical preservation properly preserved prior to demob from well? Yes No

Time	Temp. (°C)	Spec. Cond. (µS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTUs)	Purge Rate (mL/min)	Purged Volume (L)	H ₂ O Depth (ft btoc)	Notes (Purge method, water clarity, odor, purge rate, issues with)
1225	16.17	346.10	0.35	7.04	89.60	7.16	150	14.50	8.07	
1230	16.37	343.90	0.33	7.03	89.30	7.03	150	15.00	8.07	
1235	16.60	341.10	0.30	7.03	89.10	7.30	150	16.00	8.07	
1240	17.00	337.10	0.00	7.03	88.40	6.72	150	17.00	8.03	
1245	17.13	335.10	0.00	7.03	88.00	6.59	150	17.50	8.02	
1250	17.31	333.90	0.00	7.02	87.60	6.45	130	18.00	8.01	
1255	17.43	331.70	0.00	7.04	87.20	6.31	130	18.50	8.00	
1300	17.45	329.70	0.00	7.03	86.70	6.42	130	19.00	8.00	
1305	17.51	329.20	0.00	7.03	86.60	7.09	130	19.50	8.00	
1310	17.63	327.80	0.00	7.04	85.90	7.06	130	20.00	8.00	
1315	17.63	327.00	0.00	7.04	85.50	7.25	130	20.50	8.00	
1320	17.63	326.10	0.00	7.04	85.00	6.53	130	21.20	8.00	
1325	17.70	325.40	0.00	7.04	84.50	5.96	130	21.90	8.00	
1330	17.63	323.50	0.00	7.02	84.00	8.86	130	22.50	8.00	
1335	17.67	322.20	0.00	7.04	84.00	6.99	130	23.00	8.01	
1340	17.71	322.10	0.00	7.03	83.30	6.59	130	23.70	8.01	
1345	17.80	320.0	0.00	7.04	82.50	6.61	130	24.40	8.01	
1350	17.79	317.3	0.00	7.04	82.40	6.66	130	25.10	8.01	
1355	17.80	315.3	0.00	7.04	81.90	6.72	130	25.70	8.01	
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	

03/15/18

GROUNDWATER SAMPLING LOG SHEET

Client: SCS Project No.: GW6581 Sampling Date: 03/15/18
 Site: Huffaker Rd landfill Location: Plant Hammond Sampler's Name: Stephen Randall
 Well ID: GWC-23 Pump Type/Model: Peristaltic / Alexis Sample Collection Time: 1410
 Total Depth (ft): 50.17 Tubing Material: Polyethylene Sample Purge Rate (mL/min): 130
 Depth to Water (ft): 7.76 Pump Intake Depth (ft): 45.17 Sample ID: GWC-23
 Well Diameter (in): 2 Start/Stop Purge Time: 1045 / 1410 Laboratory Analyses: Metals, ions, TDS
 Well Volume (gal) = 0.041d²h: 6.96 Purge Rate (mL/min): 150-130
 Well Volume (L) = gal * 3.785: 26.33 Total Purge Volume (L): 26.25
 d = well diameter (inches) h = length of water column
 Well Type: Flush Stick Up Purge Method: Low-Flow Well Volume Other:
 Well Lock: Yes No Sampling Method: Pump Discharge Other:
 Well Cap Condition: Good Replace QA/QC Collected? No
 Well Tag Present: Yes No QA/QC I.D. —

All sample containers requiring chemical preservation properly preserved prior to demob from well? Yes No

Time	Temp. (°C)	Spec. Cond. (µS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTUs)	Purge Rate (mL/min)	Purged Volume (L)	H ₂ O Depth (ft btoc)	Notes (Purge method, water clarity, odor, purge rate, issues with
1400	17.77	314.9	0.00	7.05	80.9	6.90	130	26.25	8.01	
N.M. 03/15/18										
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	

Product Name: Low-Flow System

Date: 2018-05-16 13:21:27

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond-Huffaker Hu
Site Name ffaker Rd. Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 26 ft

Well Information:

Well ID GWC-7
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.22 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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.

Grab Samples

Product Name: Low-Flow System

Date: 2018-05-16 12:32:50

Project Information:

Operator Name Rich Murray
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd. Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 22 ft

Well Information:

Well ID GWC-8
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 11.76 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Product Name: Low-Flow System

Date: 2018-05-16 11:17:29

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond-Huffaker Hu
Site Name ffaker Rd. Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 51 ft

Well Information:

Well ID GWC-18
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.27 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Product Name: Low-Flow System

Date: 2018-05-15 18:10:12

Project Information:

Operator Name Rich Murray
Company Name Geosyntec
Project Name GP-Hammond-Huffaker Hu
Site Name ffaker Rd. Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 513028
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 52 ft

Well Information:

Well ID GWC-19
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 19.92 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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.

Grab Samples

Product Name: Low-Flow System

Date: 2018-05-15 16:04:50

Project Information:

Operator Name Noelia Muskus and Rich Murray
Company Name Geosyntec
Project Name GP-Hammond-Huffaker
Site Name Huffaker Rd. Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 497259
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 36.75 ft

Pump placement from TOC 36.75 ft

Well Information:

Well ID GWC-22
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 3.22 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2540308 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 15 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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.

Grab Samples

Product Name: Low-Flow System

Date: 2018-10-04 12:13:36

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID GWA-1
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 11.48 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-10-04 09:53:29

Project Information:

Operator Name Rich Murray
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 18 ft

Well Information:

Well ID GWA-2
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 6.19 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-10-04 10:39:58

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 15.20 ft

Pump placement from TOC 13.20 ft

Well Information:

Well ID GWA-3
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 5.06 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.157844 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:06:12	300.05	25.20	6.57	772.62	2.66	5.38	0.20	-70.80
Last 5	10:11:12	600.02	24.92	6.59	778.48	1.87	5.39	0.14	-72.05
Last 5	10:16:12	900.02	24.86	6.62	780.67	1.10	5.41	0.12	-72.00
Last 5									
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

Product Name: Low-Flow System

Date: 2018-10-04 10:55:06

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID GWA-4
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 10.69 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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	10:28:36	900.05	21.96	6.72	708.37	0.72	10.97	0.44	114.97
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.07	-0.03	6.73			-0.01	-7.47
Variance 2			-0.11	-0.04	8.89			-0.02	-6.55

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: 21.78 ft.

Grab Samples

GWA-4
Grab

Product Name: Low-Flow System

Date: 2018-10-04 12:12:51

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 30.11 ft

Pump placement from TOC 28.11 ft

Well Information:

Well ID GWA-11
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.87 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2243937 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-10-04 10:53:11

Project Information:

Operator Name Rich Murray
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 13 ft

Well Information:

Well ID GWC-5
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 5.26 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-10-04 12:44:08

Project Information:

Operator Name Rich Murray
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 37 ft

Well Information:

Well ID GWC-6
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 15.79 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-10-04 14:37:05

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID GWC-7
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 14.98 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 4.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:41:42	300.10	21.76	5.95	417.96	3.19	15.18	0.17	36.37
Last 5	13:46:42	600.02	21.49	5.94	416.72	1.85	15.16	0.12	35.82
Last 5	13:51:42	900.01	21.36	5.92	412.78	2.73	15.15	0.10	36.43
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

Product Name: Low-Flow System

Date: 2018-10-04 16:08:16

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID GWC-8
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.29 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-10-05 10:23:08

Project Information:

Operator Name Rich Murray
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 463068
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC 47 ft

Well Information:

Well ID GWC-9
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 14.71 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.09 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-10-04 13:37:03

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 27.48 ft

Pump placement from TOC 25.48 ft

Well Information:

Well ID GWC-10
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 14.28 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2126549 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Product Name: Low-Flow System

Date: 2018-10-05 10:00:42

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 51.16 ft

Pump placement from TOC 49.16 ft

Well Information:

Well ID GWC-18
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 13.46 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3183487 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-10-04 17:07:50

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 52.76 ft

Pump placement from TOC 49.76 ft

Well Information:

Well ID GWC-19
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 19.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.3254902 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-10-05 11:04:56

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 28.51 ft

Pump placement from TOC 26.51 ft

Well Information:

Well ID GWC-20
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 4.35 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2172522 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:35:29	300.03	20.61	7.14	378.61	0.55	5.02	0.22	-112.82
Last 5	10:40:29	600.02	20.42	7.08	379.01	0.42	5.05	0.14	-116.84
Last 5	10:45:30	900.98	20.21	7.07	379.46	0.44	5.07	0.11	-118.10
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

Product Name: Low-Flow System

Date: 2018-10-04 15:50:37

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 10.91 ft

Pump placement from TOC 8.91 ft

Well Information:

Well ID GWC-21
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 5.48 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.1386959 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-10-04 14:44:37

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 365491
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 35.73 ft

Pump placement from TOC 33.73 ft

Well Information:

Well ID GWC-22
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 3.16 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2494781 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	14:09:23	300.02	23.41	7.43	367.04	3.43	3.76	0.37	-143.41
Last 5	14:14:23	600.02	22.97	7.49	366.95	3.16	3.80	0.17	-147.36
Last 5	14:19:23	900.02	22.75	7.52	366.60	3.40	3.80	0.10	-150.95
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.44	0.06	-0.09			-0.20	-3.95
Variance 2			-0.22	0.03	-0.35			-0.07	-3.59

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=42.32 ft.

Grab Samples

GWC-22
Grab

Product Name: Low-Flow System

Date: 2018-10-05 12:21:12

Project Information:

Operator Name Noelia Muskus
Company Name Geosyntec
Project Name GP-Hammond
Site Name Plant Hammond
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 449622
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MP50
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length ft

Pump placement from TOC ft

Well Information:

Well ID GWC-23
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 10.25 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.485 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 21 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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

Product Name: Low-Flow System

Date: 2018-12-11 13:28:21

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Huffaker Rd. Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 37.09 ft

Pump placement from TOC 35.09 ft

Well Information:

Well ID GWC-6
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 14.53 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2555484 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-12-11 12:28:14

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Huffaker Rd. Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 21.45 ft

Pump placement from TOC 19.45 ft

Well Information:

Well ID GWC-8
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 10.14 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1857404 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-12-11 11:16:11

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Huffaker Rd. Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 46.60 ft

Pump placement from TOC 44.60 ft

Well Information:

Well ID GWC-9
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 12.30 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2979955 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Grab Samples

Product Name: Low-Flow System

Date: 2018-12-11 10:17:25

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Huffaker Rd. Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 27.48 ft

Pump placement from TOC 25.48 ft

Well Information:

Well ID GWC-10
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 11.95 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2126549 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb 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	09:58:20	600.02	14.32	7.19	366.02	2.50	12.00	0.25	47.82
Last 5	10:03:20	900.01	14.28	7.19	369.93	1.54	12.00	0.35	38.98
Last 5									
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

Grab Samples

Product Name: Low-Flow System

Date: 2018-12-11 15:31:49

Project Information:

Operator Name Dan Gibbs
Company Name Geosyntec
Project Name GP-Hammond
Site Name Huffaker Rd. Landfill
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 440279
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 28.51 ft

Pump placement from TOC 26.51 ft

Well Information:

Well ID GWC-20
Well diameter 2 in
Well Total Depth ft
Screen Length 10 ft
Depth to Water 2.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2172522 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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

Grab Samples

Product Name: Low-Flow System

Date: 2019-01-11 11:38:18

Project Information:

Operator Name Grant Walter
Company Name Geosyntec
Project Name Plant Hammond
Site Name Hammond-Huffaker
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 588863
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic
Tubing Type polyethylene
Tubing Diameter 0.17 in
Tubing Length 19.5 ft

Pump placement from TOC ft

Well Information:

Well ID GWC-8
Well diameter 2 in
Well Total Depth 24.4 ft
Screen Length 10 ft
Depth to Water 9.79 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.1770367 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 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	pH	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 Sampling 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 Sampling 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

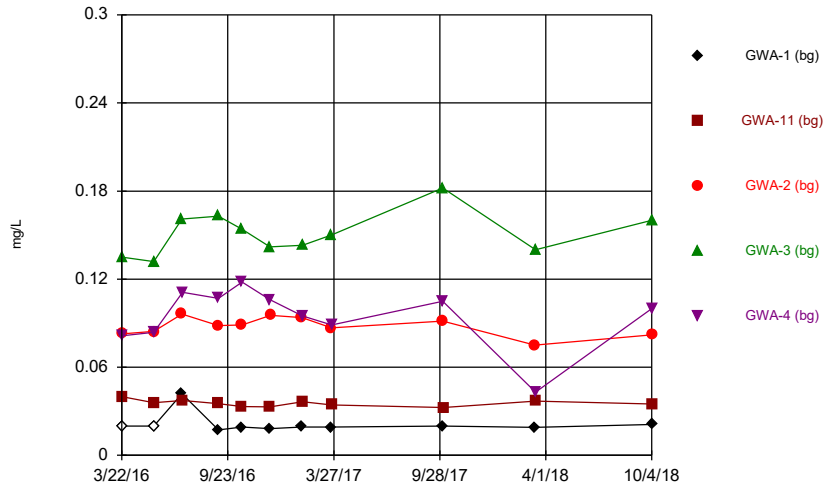
(1) Shaded values indicate an exceedance of the statistically derived PL.

(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 compared to both the upper and lower PL.

(3) Due to the uncertainty associated with estimated values, J qualified results are not considered when evaluating PL exceedances.

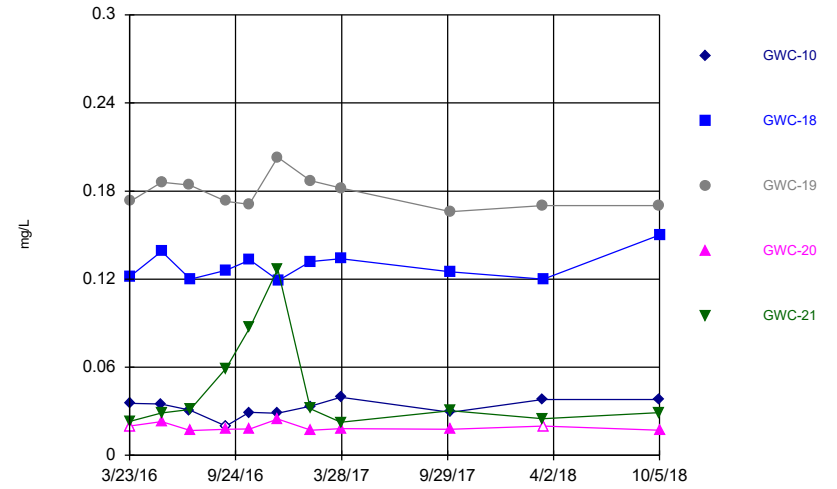
(4) Identified SSI addressed with an alternate source demonstration, as discussed in section 2.2 and section 4.2 of included report.

Time Series



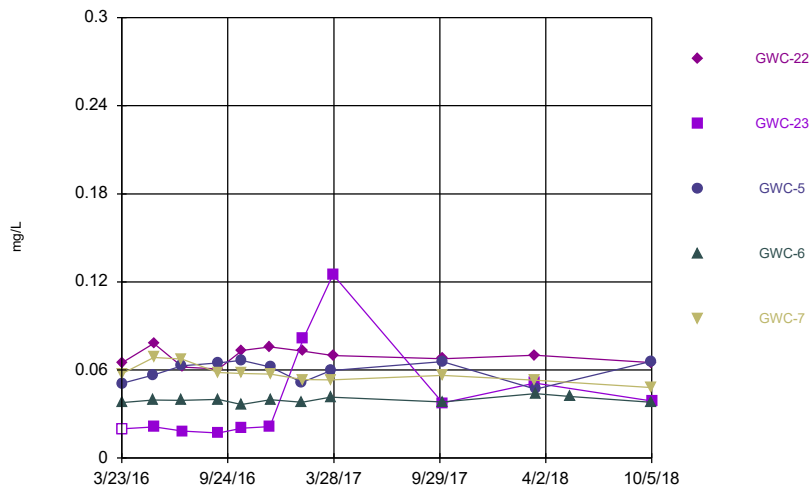
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



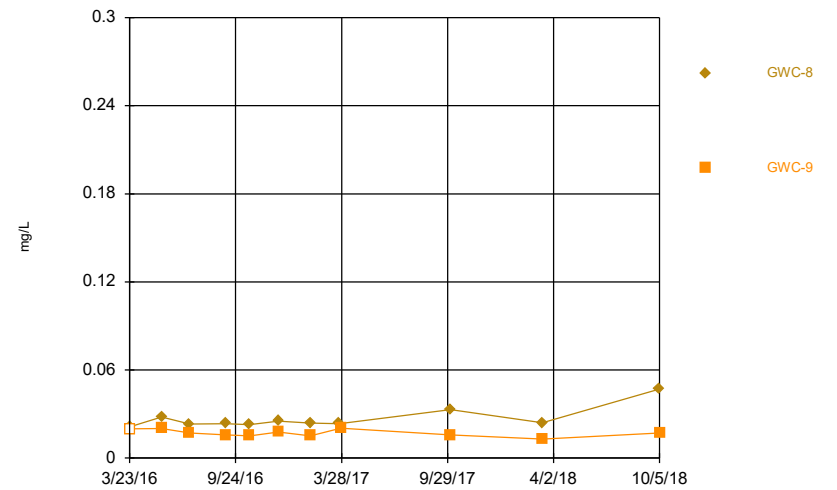
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



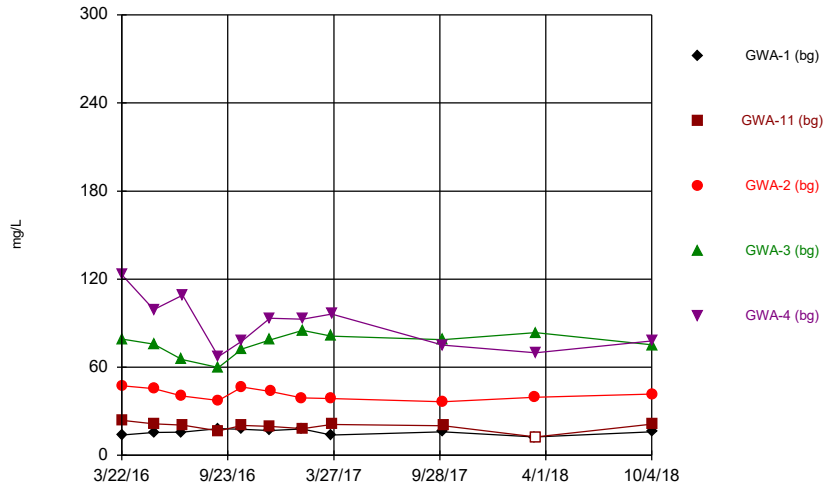
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Time Series



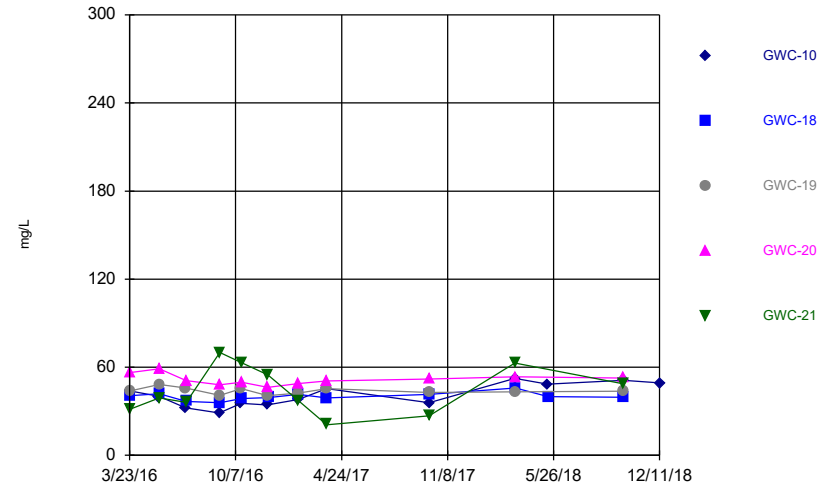
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Time Series



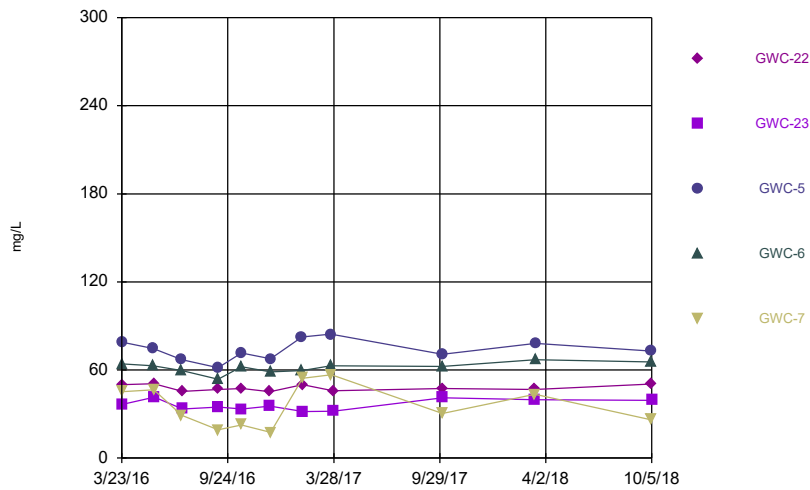
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Time Series



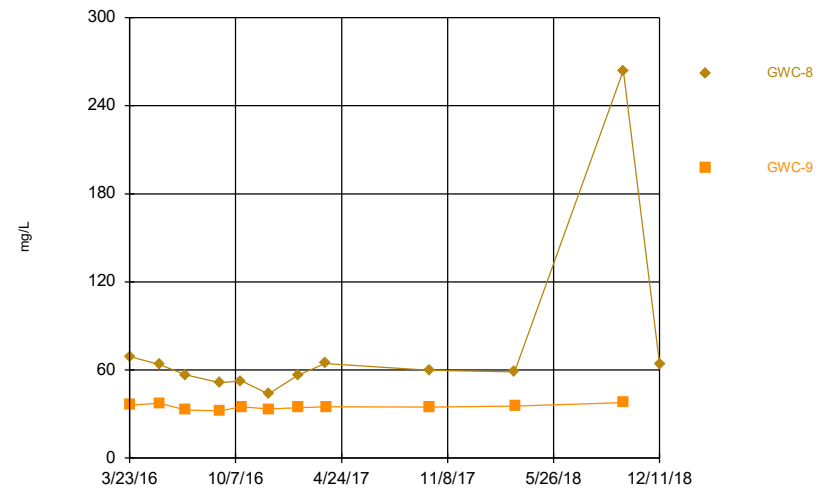
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



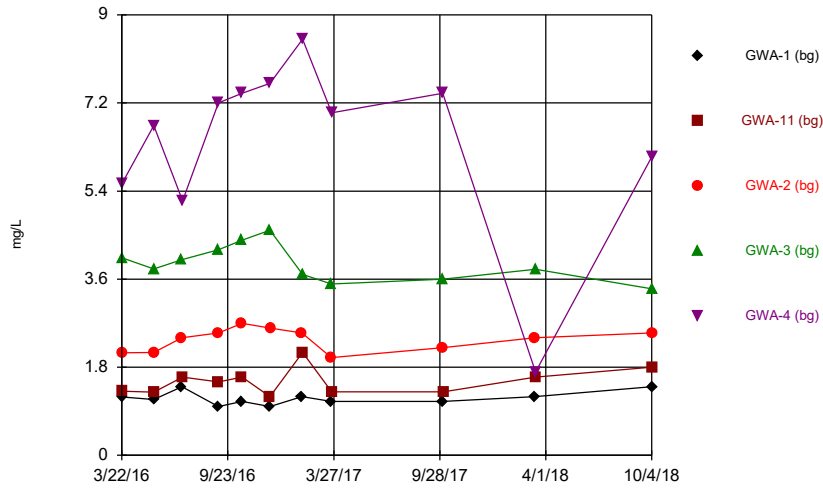
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



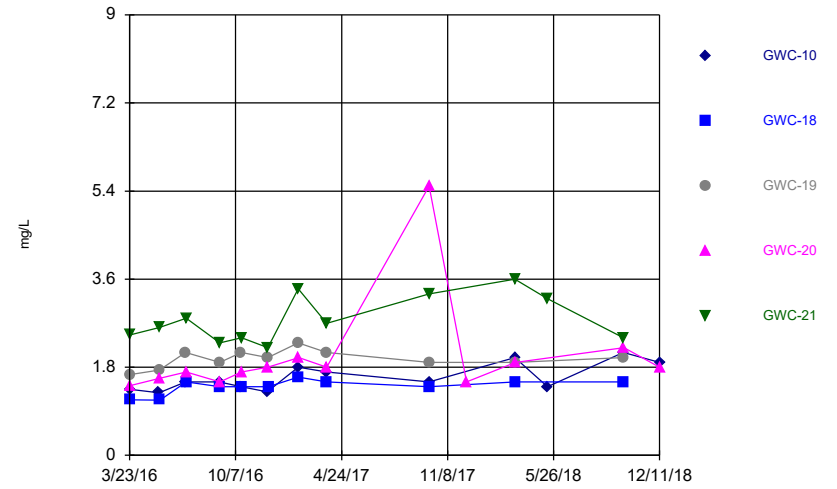
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



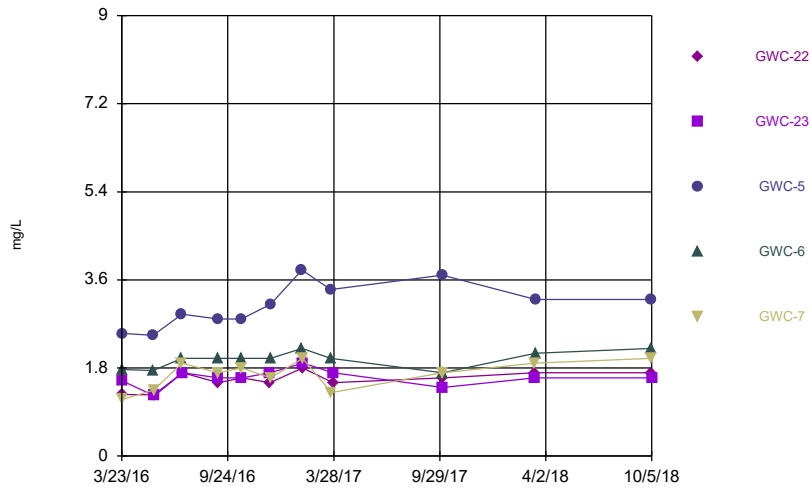
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Time Series



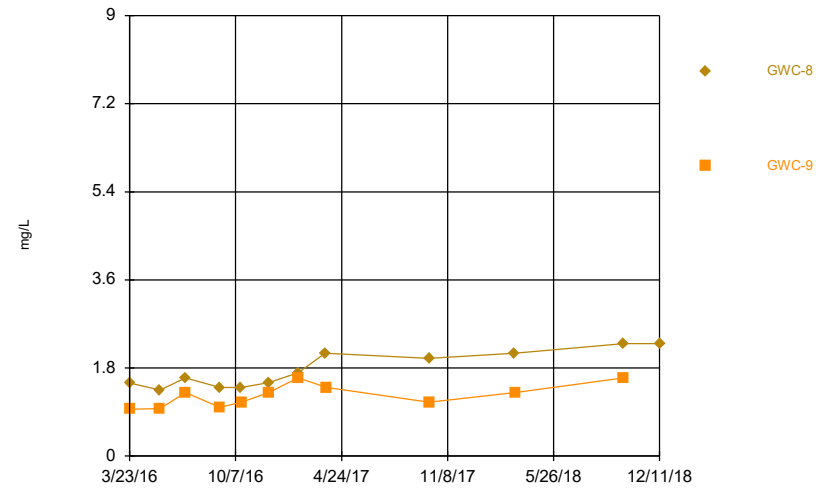
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 Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



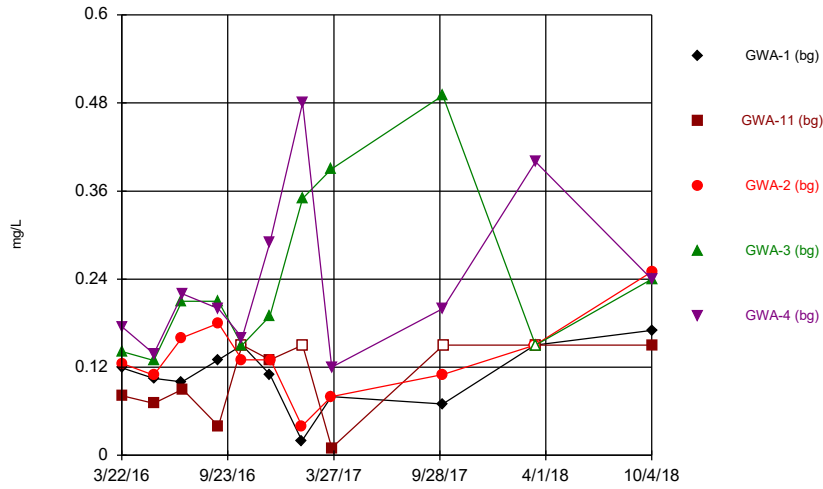
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 Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



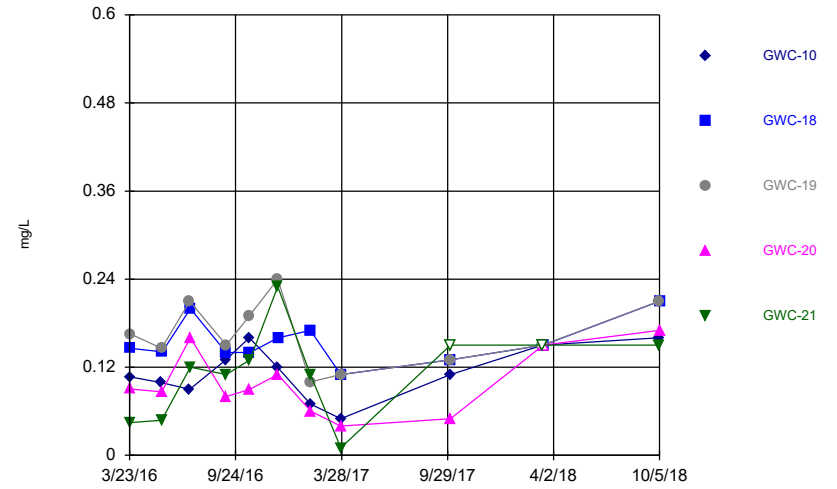
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Time Series



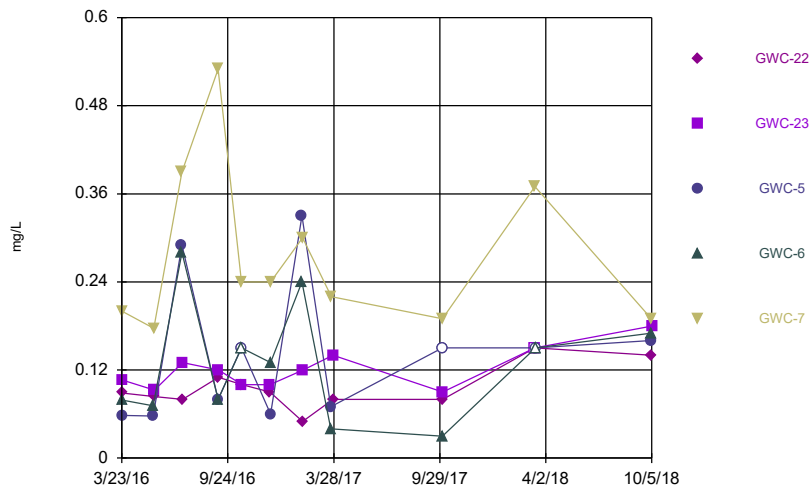
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Time Series



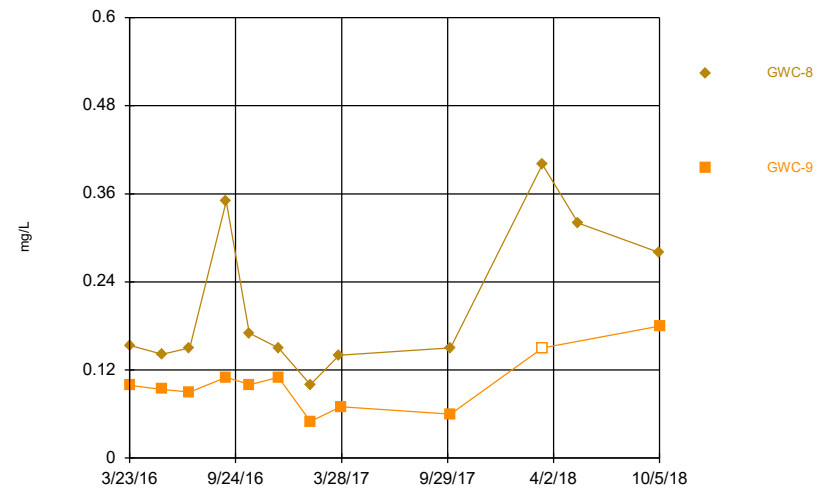
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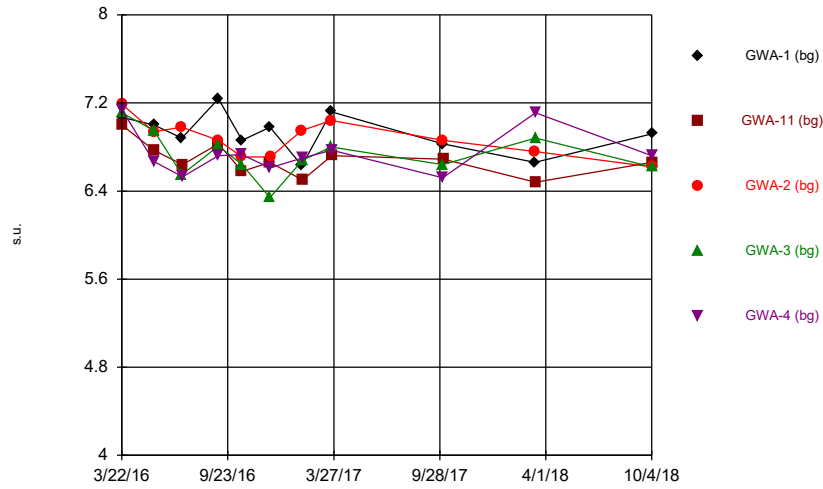
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

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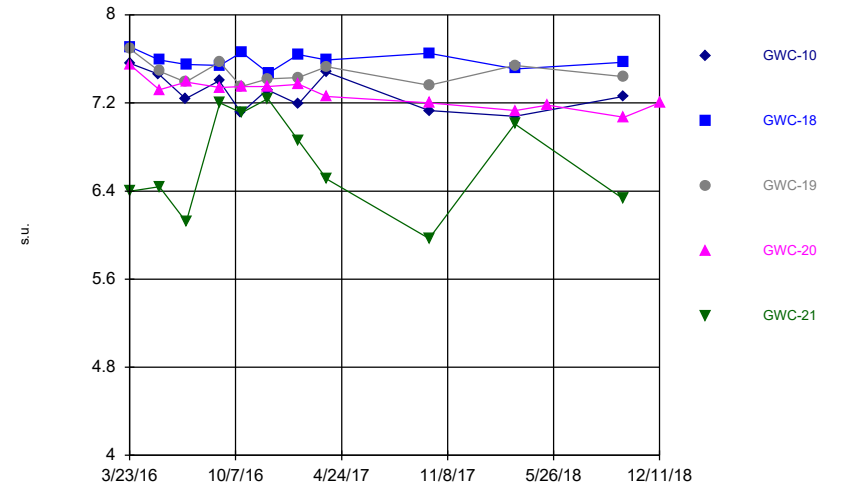
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



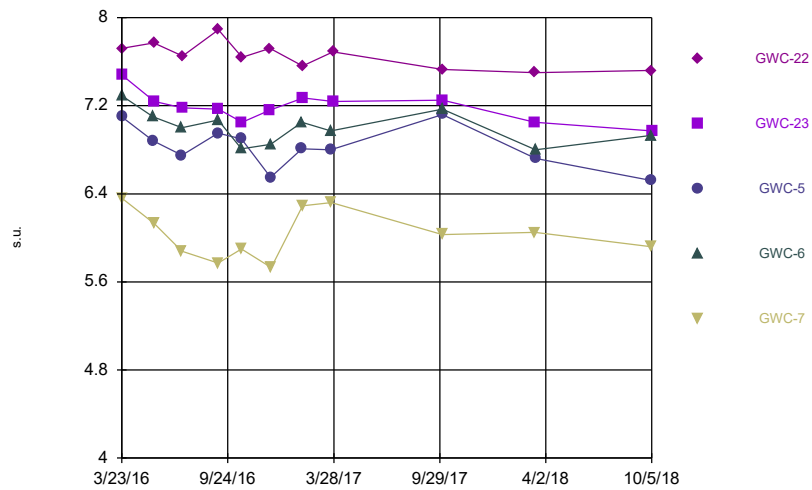
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 Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



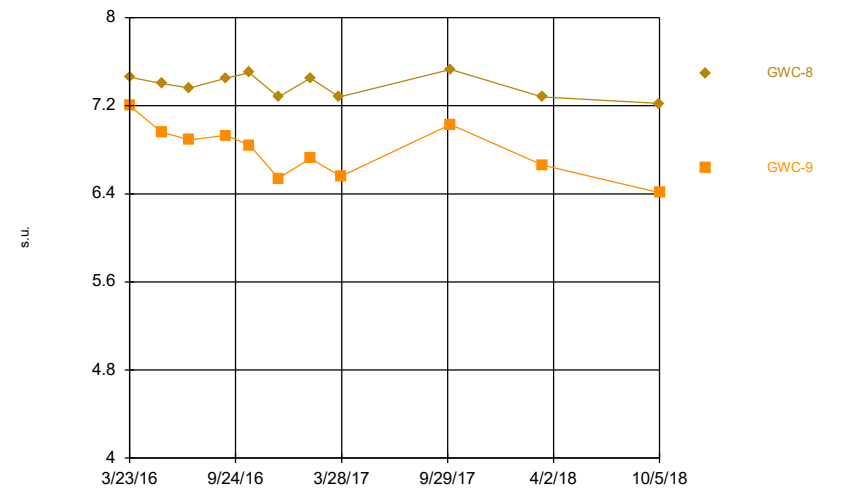
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Time Series



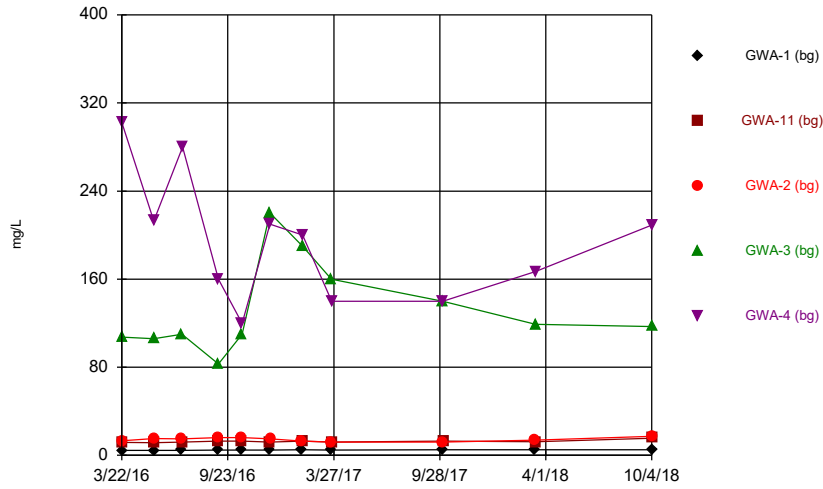
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Time Series



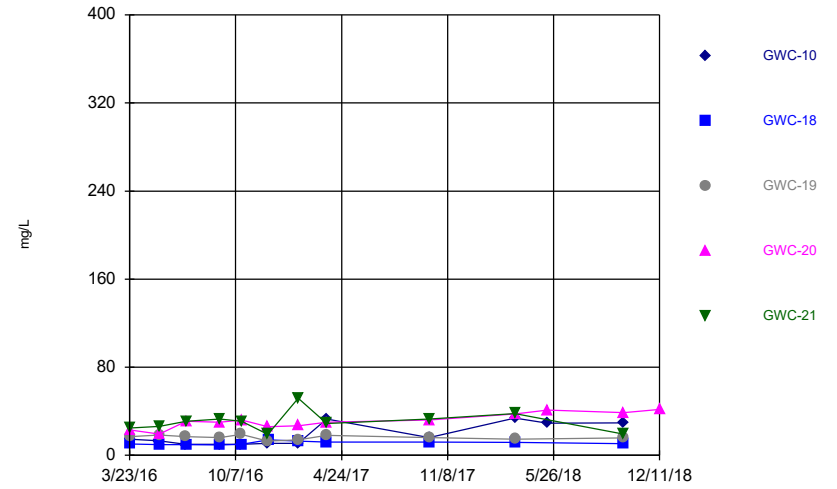
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 Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



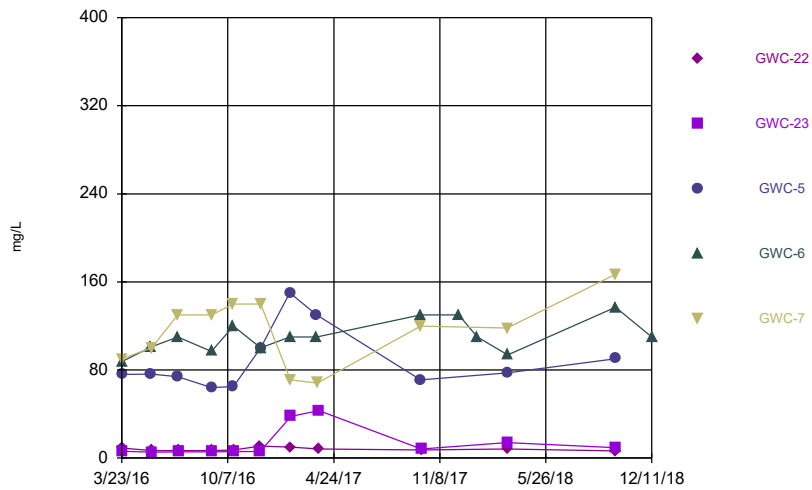
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



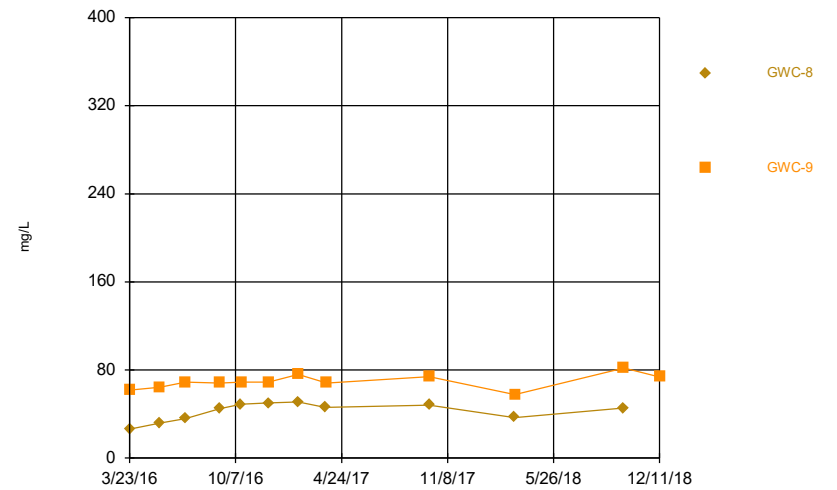
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



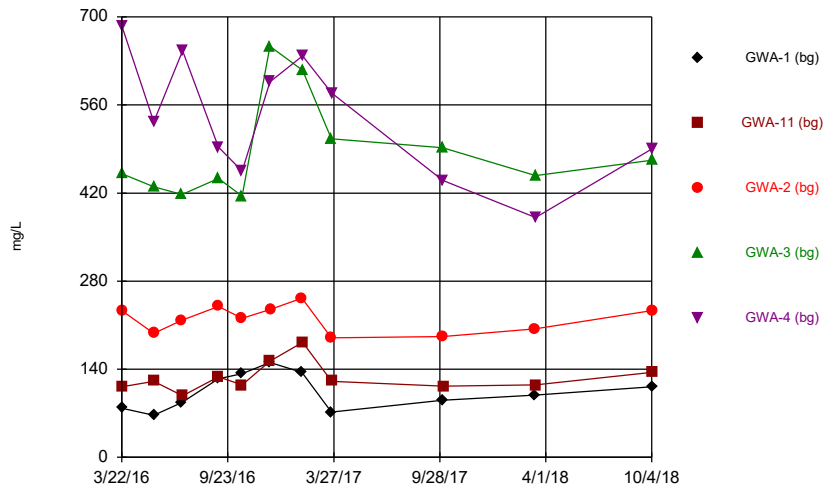
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



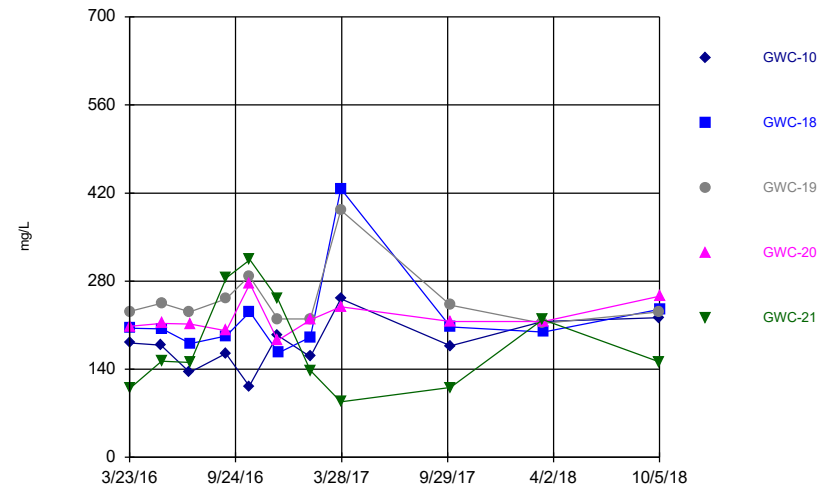
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Time Series



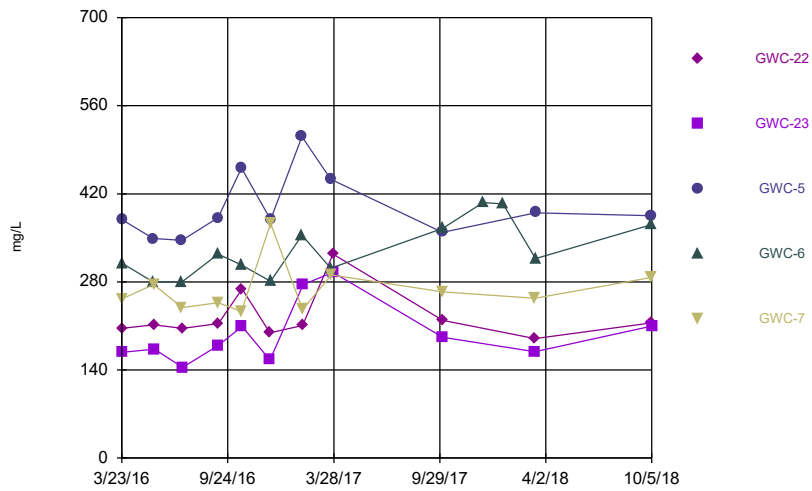
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



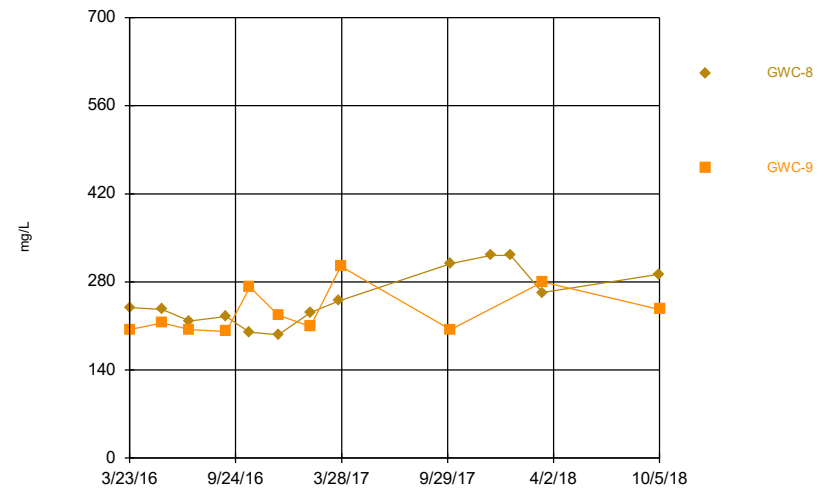
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Plant Hammond Client: Georgia Power Company Data: Huffaker Rd Landfill

Time Series



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

Time Series



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

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
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

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	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 (s.u.)	GWC-21	7.71	5.76	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (s.u.)	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 (s.u.)	GWC-5	7.211	6.474	n/a	1 future	n/a	8	0	No	0.0003135	Param Intra 1 of 3
pH (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 (s.u.)	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 (s.u.)	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)	GWC-10	33	n/a	n/a	1 future	n/a	8	0	n/a	0.005912	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-19	21.39	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-20	37.44	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-21	53	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-22	11.96	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-23	43	n/a	n/a	1 future	n/a	8	0	n/a	0.005912	NP Intra (normality) 1 of 3
Sulfate (mg/L)	GWC-5	165.8	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-6	127.6	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3
Sulfate (mg/L)	GWC-7	178	n/a	n/a	1 future	n/a	8	0	No	0.0006269	Param Intra 1 of 3

Prediction Limit

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<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
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