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2018 Annual Groundwater Monitoring and Corrective Action Report

Plant McIntosh Coal Combustion Residuals
Existing Landfill No. 4
Permit No. 051-010D(LI)

Prepared by:
GEI Consultants, Inc.
1375 Peachtree Street, Suite A15
Atlanta, GA 30309

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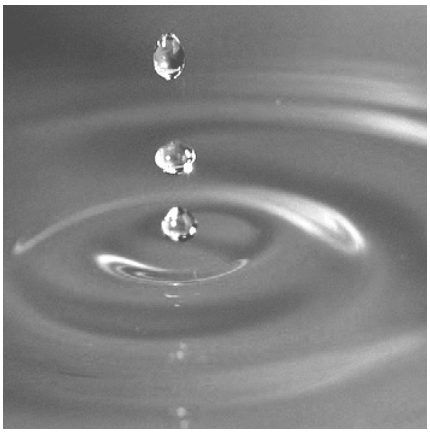

Prepared by: Peter Adams
Staff Geologist

Reviewed By: Christie Battenhouse, P.G.
Senior Project Manager

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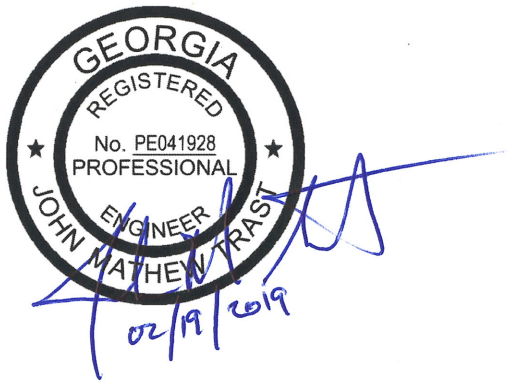
PROFESSIONAL ENGINEER CERTIFICATION

This *2018 Annual Groundwater Monitoring and Corrective Action Report, Georgia Power Company – Plant McIntosh Landfill No. 4* has been prepared in accordance with the United States Environmental Protection Agency coal combustion residual rule (40 Code of Federal Regulations (CFR) 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 GEI Consultants, Inc:



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1. Introduction

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residuals (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D; published in 80 FR 21302-21501, April 17, 2015), and the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management 391-3-4-.10, GEI Consultants, Inc. (GEI) has prepared this *2018 Annual Groundwater Monitoring and Corrective Action Report* to document groundwater monitoring activities conducted at Georgia Power Company's (GPC's) Plant McIntosh, Coal Combustion By-product Existing Landfill No. 4 (Landfill No. 4) and satisfy the requirements of §257.90(e). Groundwater monitoring and reporting for Landfill No. 4 is performed in accordance with the requirements §257.90 through §257.98. This report documents semiannual monitoring activities completed through the 2018 calendar year.

1.1 Site Description and Background

The plant property is located at 981 Old Augusta Road Central, in southeast Effingham County, Georgia, approximately 4 miles northeast of the city of Rincon, and 20 miles north-northwest of the city of Savannah. The Site is situated on the west bank of the Savannah River at Big Kiffer Point (**Figure 1**). Landfill No. 4 receives CCR generated from the plant and is on the western portion of the plant property, approximately 1.5 miles west of the Savannah River and approximately 800 feet south of Lockner Creek.

Landfill No. 4 is composed of Cells 1, 2A, 2B, 3, and 4 (**Figure 2**). Closure construction for Cell 1 of Landfill No. 4 began in June 2015 and final cover construction was completed in August 2016. GPC began construction of Cell 2A in June 2015 and received approval to begin receiving solid waste for disposal on July 20, 2017. Cell 2A of Landfill No. 4 began receiving CCR waste in September 2017. Cells 2B, 3, and 4 are for future development.

1.2 Regional Geology and Hydrogeologic Setting

Rincon, Georgia is located within the Coastal Plain Province of Georgia. Coastal Plain sediments are composed of stratified clay, silt, sand, and limestone, resting on much older igneous and metamorphic basement rocks. These older, crystalline rocks dip to the south and east causing the overlying sediments to form a wedge-shaped deposit, which is thickest to the east and the south. The Coastal Plain deposits crop out at the land surface in bands, from the oldest to the most recent, from the Fall Line to the coast. Pleistocene-aged deposits are at the surface in this region. Recharge to the major aquifers in the area is to the northeast of the site,

where these formations outcrop (Southern Company Services Earth Science & Environmental Engineering [SCS ES&EE], 2002).

Landfill No. 4 is situated on sediments that were deposited from Cretaceous to Pleistocene and consist of stratified marine deposits and materials eroded from crystalline rock of the Piedmont Region. Boring logs describe soils at Landfill No. 4 as interbedded clays, silts, and sands typical of Coastal Plain sediments.

The uppermost aquifer at Landfill No. 4 is the surficial aquifer, characterized by silty to sandy clays, clayey silts, silty sands, and fine to medium grained sands. Monitoring wells and piezometers were screened in the surficial aquifer between elevation 40 and 12 feet (ft) North American Vertical Datum (NAVD)1988.

1.3 Groundwater Monitoring Well Network

Pursuant to §257.91, a groundwater monitoring system was installed within the uppermost aquifer at Landfill No. 4. The monitoring system is designed to monitor groundwater passing the waste boundary of the unit within the uppermost aquifer. Wells were located to serve as upgradient and downgradient monitoring points based on groundwater flow direction relative to constructed waste boundaries (**Table 1**).

2. Groundwater Monitoring Activities

As required by §257.90(e), the following subsections describe monitoring-related activities performed during the preceding year. All groundwater sampling was performed in accordance with §257.93. Samples were collected from each well in the monitoring system shown on **Figure 2**. Pursuant to §257.90(e)(3), a summary and description of groundwater sampling events completed at Landfill No. 4 in 2018 is shown on **Table 2**.

2.1 Monitoring Well Installation and Maintenance

Piezometer and monitoring well locations are shown on **Figure 2**. No well maintenance was performed in 2018 on the existing groundwater monitoring network.

2.2 Alternate Source Demonstrations

Statistically significant increases (SSIs) of Appendix III groundwater monitoring parameters were reported in the *2017 Annual Groundwater Monitoring and Corrective Action Report* ([2017 AGMCAR], ERM, 2018). The 2017 AGMCAR listed the following SSIs:

- Boron: GWC-10
- Calcium: GWC-10, GWC-11, GWC-18, and GWC-19
- Chloride: GWC-9
- Fluoride: GWC-11 and GWC-18
- pH: GWC-10, GWC-11, and GWC-18
- TDS: GWC-10 and GWC-11

Following submittal of the 2017 AGMCAR, further evaluation of the statistical pool and well placement relative to cell 2A (which began receiving CCR waste in September 2017) was conducted. Monitoring wells GWC-17 and GWC-18, which are downgradient of undeveloped Cell 2B, were previously included in the downgradient statistical pool. SSIs observed in these wells could not have originated from the unit (Cells 1 and 2A) since Cell 2 B did not contain waste during background sampling. Since these wells are representative of background groundwater quality, as originally documented in the *Semiannual Groundwater Report – January 2018* (GEI, 2018a) submitted to Georgia EPD under Solid Waste Permit No. 051-010D(LI), GWC-17 and GWC-18 were moved into the upgradient (or background) statistical pool for statistical evaluation. Statistical analysis was conducted using upper prediction limits (UPLs) constructed incorporating GWC-17 and GWC-18, and SSIs for calcium, chloride, fluoride, pH, and total dissolved solids (TDS) were eliminated.

The SSI for boron in GWC-10 is the result of variability of naturally occurring constituents in groundwater and not a release from Landfill No. 4.

In accordance with §257.94(e), alternate source demonstrations (ASDs) were completed concluding that Landfill No. 4 was not the source of the observed SSIs. ASDs are provided in **Appendix A**.

2.3 Detection Monitoring

Two semiannual detection groundwater monitoring events were conducted in 2018 (January and July). Groundwater samples were collected from each monitoring well and analyzed for Appendix III constituents according to §257.94(a). Copies of the analytical data packages for semiannual detection monitoring events are included in **Appendix B**.

2.4 Other Sampling

Two semiannual compliance groundwater monitoring events were conducted in 2018 (January and July) to comply with the EPD Rules for Solid Waste Management 391-3-4-.10 and the approved EPD Solid Waste Permit No. 051-010D(LI). Groundwater samples were collected from each monitoring well and analyzed according to the EPD approved Groundwater Monitoring Plan and the August 2017 minor modification submitted to EPD. Copies of the results and the analytical data packages for EPD semiannual compliance monitoring events are included in the *Semiannual Groundwater Monitoring Reports* (GEI, 2018a and GEI, 2018b).

3. Sample Methodology and Analyses

GEI conducted the field work described herein. The field activities and results of the groundwater sampling events are summarized in the following sections. Copies of the laboratory analytical and field sampling reports are included in **Appendix B**.

3.1 Groundwater Level Measurement

Prior to conducting each groundwater sampling event, groundwater elevations were collected from PZ-22 and each well in the network at Landfill No. 4. GEI used an electronic water level indicator to measure water levels to the nearest 0.01 foot. The water levels and corresponding groundwater elevations measured during the detection monitoring events are summarized in **Table 3**.

Potentiometric surface elevation contours and estimated groundwater flow direction were developed using the groundwater elevation data in January 2018 (**Figure 3)** and July 2018 **(Figure 4)**. Interpretation of the potentiometric surface elevation contours indicates that groundwater flow across Landfill No. 4 is generally to the north but ranges from slightly northeast near Cell 1 to north-northwest near Cell 2A (**Figures 3** and **4**), which is consistent with previous events.

3.2 Groundwater Gradient and Flow Velocity

Horizontal flow velocity at the Landfill No. 4 was calculated using a derivation of Darcy's Law. Specifically,

$$v = linear\ velocity = \frac{Ki}{\eta_e}$$

where :

$K = hydraulic\ conductivity$

$$i = hydraulic\ gradient = \frac{(h_1 - h_2)}{L}$$

$\eta_e = effective\ porosity$

$h_1\ and\ h_2 = groundwater\ elevation\ at\ locations\ 1\ and\ 2$

$L = distance\ between\ locations\ 1\ and\ 2$

As presented in previous reports, and originally detailed in the July 2002 *Savannah Electric Plant McIntosh Proposed Ash Monofill Site Acceptability Report* (SCS ES&EE, 2002), the average hydraulic conductivity of the Unit 3 aquifer was used in the calculations, which is 0.859 feet per day (ft/day). Soils at the screened intervals of the wells are generally classified as silty sands (SM). The default value for effective porosity for this type soil is 0.20 (USEPA 530/SW-89-031, 1989). To calculate an average gradient across Landfill No. 4, the hydraulic gradient was calculated between three separate well pairs: GWA-3 and GWC-11, GWC-5(*GWB-5) and GWC-23, and GWA-14 and GWC-18 (**Table 4**). The calculated average groundwater flow velocity at Landfill No. 4 in July 2018 is 0.053 ft/day or 19.23 feet per year (ft/year).

3.3 Groundwater Sampling

Groundwater samples were collected in accordance with §257.93(a). Wells were purged using a peristaltic pump or submersible bladder pump with disposable tubing. The pumps were lowered into the well so that the intake was at the midpoint of the well screen (or as appropriate determined by the water level). All non-disposable equipment was decontaminated before use and between well locations. While the wells were purged, water level data and purge volumes were recorded electronically and by hand, and the following field parameters were collected:

pH (field)	Oxidation Reduction Potential (ORP)	Temperature
Specific Conductivity	Dissolved Oxygen (DO)	Turbidity

Monitoring wells were purged and sampled and using low-flow sampling procedures. A SmarTroll® (In-Situ® field instrument) was used to monitor and record field water quality parameters during well purging to verify stabilization prior to sampling. Turbidity was monitored using a LaMotte 1970-USEPA Compliant Model 2020we® or HANNA Instruments Model HI93703® USEPA and International Organization for Standardization (ISO) compliant turbidity meter. Groundwater samples were collected when the following stabilization criteria were met:

- ± 0.2 standard units for pH
- ± 5 percent for specific conductance
- ± 0.2 milligrams per liter (mg/L) or 10 percent for DO > 0.5 mg/L (whichever is greater). No criterion applies if DO < 0.5 mg/L

- Turbidity measurements less than 10 nephelometric turbidity units (NTU)

Once stabilization was achieved, unfiltered samples were collected in laboratory supplied bottles, placed in ice-packed coolers, and submitted to TestAmerica, Inc. (TAL) in Pensacola, Florida following chain-of-custody protocol. Field sampling data sheets are included in **Appendix B**.

3.4 Laboratory Analyses

Groundwater samples were collected in January and July 2018 from wells in the certified groundwater monitoring network and analyzed for Appendix III monitoring parameters as part of the detection monitoring program. Samples were analyzed using methods described in USEPA SW846, Methods for Chemical Analysis of Water and Wastes (MCAWW), and Standard Method for The Examination of Water and Wastewater (SM). Specific methods are identified on the laboratory analytical data reports included in **Appendix B**. A summary of detection groundwater monitoring data collected in 2018 for Landfill No. 4 is included in **Table 5**.

Laboratory analyses were performed by TAL in Pensacola, Florida. TAL is accredited by the National Environmental Laboratory Accreditation Program (NELAP) and maintains a NELAP certification for all parameters analyzed during the groundwater monitoring events in 2018 at Landfill No. 4. In addition, TAL is certified by the state of Georgia to perform analysis. Laboratory reports and chain-of-custody records for the monitoring events are presented in **Appendix B**.

3.5 Quality Assurance and Quality Control

During each sampling event, quality assurance/quality control samples (QA/QC) were collected at a rate of one sample per every 10 samples. QA/QC samples included field equipment rinsate blanks (FERB), field blanks (FB), and duplicate (DUP) samples. QA/QC sample data were evaluated during data validation (as discussed below) and are included in **Appendix B**.

Groundwater quality data in this report was validated in accordance with USEPA guidance (USEPA, 2011) and the analytical methods. Data validation consisted of reviewing holding times, laboratory methods, field equipment blanks and control samples, matrix spikes/matrix spike duplicate recoveries and relative percent differences (RPDs), post digestions spikes, and reporting limits (RLs) to verify sample integrity. Where appropriate, validation qualifiers and flags are applied to the data using USEPA procedures as guidance (USEPA, 2017). Flagged data is identified in the statistical analysis reports and described in Section 4.

4. Statistical Analyses

The statistical approach used for data analysis of Appendix III groundwater monitoring data was performed pursuant to §257.93 and according to the PE-certified statistical method for Landfill No. 4.

4.1 Statistical Methods

The statistical test used to evaluate the groundwater monitoring data will be both the interwell (boron, calcium, chloride, fluoride, pH, and TDS) and intrawell (sulfate) prediction limit (PL) method combined with the option of a 1-of-2 and 1-of-3 resample plan, respectively.

The interwell PLs pool background data from the network of upgradient wells to calculate a PL, while the intrawell PLs use 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 downgradient well data exceed the PL.

If data from a sampling event initially exceeds the PL, the resampling strategy may be used to verify the result. In 1-of-2 resampling, one independent resample may be collected and evaluated within 90 days to determine whether the initial exceedance is verified. In a 1-of-3 resample, 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 identified. When a re-sample 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 a confirmed exceedance. The following guidance is also applicable to the statistical method:

- Statistical analyses are not performed on analytes containing 100 percent non-detects (USEPA, 2009).

- When data contain less than 15 percent non-detects in background, simple substitution of one-half the RL is utilized in the statistical analysis. The RL utilized for non-detects is the Practical Quantitation Limit as reported by the laboratory.

- When data contain between 15 to 50 percent non-detects the Kaplan-Meier non-detect adjustment is applied to the background data. This technique adjusts the

mean and standard deviation of the historical concentrations to account for concentrations below the RL.

- Nonparametric PL are used on data containing greater than 50 percent non-detects.

The Sanitas™ groundwater statistical software was used to perform the statistical analyses (Sanitas™, 2007). Sanitas™ is a proprietary decision support software package, developed in 1991, that incorporates the statistical tests required of Subtitle C and D facilities according to USEPA regulations and guidance as recommended in the USEPA Unified Guidance (USEPA, 2009) document.

4.2 Statistical Analyses Results

Analytical data from the first (January 2018) and second (July 2018) semiannual detection monitoring events at Landfill No. 4 were statistically analyzed in accordance with the PE-certified statistical method. A summary of groundwater statistical analysis of January and July 2018 Appendix III semiannual monitoring data and comparison to PLs is included with the Sanitas™ statistical analysis and outputs are provided in **Appendix C**. The calculated PLs are listed on **Table 6**.

Based on the statistical results presented in **Appendix C**, PL exceedances were identified for boron in GWC-10 (January and July 2018), chloride in GWC-9 and GWC-20 (July 2018), and sulfate in GWC-4A (*GWB-4A), GWC-10, and GWC-11 (July 2018). The source for elevated boron concentrations was previously addressed with the April 2018 ASD discussed in Section 2.2 and provided in **Appendix A**. As such GWC-10 was not resampled and there is no SSI for boron.

Verification resampling for chloride in GWC-9 and GWC-20 was conducted in September 2018. The reported concentrations of chloride in the resampling event were below the PL. Since the resample result did not verify the initial result, there are no SSIs for chloride in GWC-9 or GWC-20.

No verification resampling was conducted for sulfate in GWC-4A(*GWB-4A), GWC-10, and GWC-11. An ASD will be prepared for the sulfate SSIs in accordance with 257.94(e).

5. Monitoring Program Status

Landfill No. 4 is in detection monitoring. Statistical evaluations of the detection groundwater monitoring data for Landfill No. 4 identified SSIs of Appendix III groundwater monitoring parameters. In accordance with §257.94(e), an ASD for boron was completed that concludes that Landfill No. 4 was not the source of the SSI. The ASD is included in **Appendix A**. An ASD will be prepared for the sulfate SSIs in accordance with 257.94(e). Landfill No. 4 will remain in detection monitoring.

6. Conclusions and Future Actions

Two semiannual detection monitoring events were conducted in January and July 2018 at Landfill No. 4, pursuant to the CCR Rule 40 CFR §257.94. Statistical evaluations of the groundwater monitoring data for Landfill No. 4 identified an SSI for boron in GWC-10 and sulfate in GWC-4A (*GWB-4A), GWC-10, and GWC-11. In accordance with §257.94(e), an ASD for boron was completed and is provided in **Appendix A**. An ASD will be prepared for the sulfate SSIs in accordance with 257.94(e). Landfill No. 4 will remain in detection monitoring.

Therefore, GEI recommends the following:

- Perform semiannual detection groundwater monitoring in 2019 in accordance with §257.94, and
- Continue annual reporting and submit reports in accordance with §257.90(e).

7. References

ERM, 2018. *2017 Annual Groundwater Monitoring and Corrective Action Report, prepared by Environmental Resources Management. January 31, 2018.*

GEI, 2018a. *Semiannual Groundwater Monitoring Report – January 2018*, prepared by GEI Consultants, Inc. March 2018.

GEI, 2018b. *Semiannual Groundwater Monitoring Report – July 2018*, prepared by GEI Consultants, Inc. October 2018.

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USEPA, 1989. *RCRA Facility Investigation (RFI) Guidance, Volume II of IV: Soil, Groundwater, Subsurface Gas Releases.* EPA/530/SW-89-031. Office of Solid Waste Management Division, U.S. Environmental Protection Agency, Washington, D.C.

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USEPA. 2017. *National Functional Guidelines for Inorganic Superfund Methods Data Review.* Office of Superfund Remediation and Technology Innovation. OLEM 9355.0-135 [EPA- 540-R-2017-001]. Washington, DC. January.

Tables

Table 1. Monitoring Well Network Summary
2018 Annual Groundwater Monitoring and Corrective Action Report
Georgia Power Company
Plant McIntosh Landfill No. 4
Effingham County, Georgia

Well ID	Installation Date	Northing	Easting	Total Depth (ft bTOC)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Top of Screen Elevation (ft)	Bottom of Screen Elevation (ft)	Location and Purpose
GWC-1	08/17/2004	855431.30	958419.36	28.50	44.06	47.06	29.06	19.06	Downgradient Monitoring Well
GWA-2	08/17/2004	855308.90	958103.93	28.50	50.64	53.64	35.64	25.64	Upgradient Monitoring Well
GWA-3	08/17/2004	855163.12	957786.21	38.50	54.93	57.93	29.93	19.93	Upgradient Monitoring Well
GWC-4A(*GWB-4A)	08/4/2016	855352.55	957496.51	39.00	62.20	64.98	39.98	29.98	Upgradient Monitoring Well
GWC-5(*GWB-5)	08/18/2004	855671.33	957319.99	41.50	59.29	62.29	31.29	21.29	Upgradient Monitoring Well
GWC-9	08/16/2004	856732.82	957909.70	38.50	50.56	53.56	25.56	15.56	Downgradient Monitoring Well
GWC-10	08/19/2004	856429.88	958077.92	33.50	46.55	49.55	26.55	16.55	Downgradient Monitoring Well
GWC-11	08/18/2004	856116.10	958244.61	43.50	54.97	57.97	24.97	14.97	Downgradient Monitoring Well
GWC-12	08/18/2004	855803.80	958413.62	18.76	54.26	57.26	26.26	16.26	Downgradient Monitoring Well
GWA-13	10/23/2015	855669.87	957006.97	40.11	57.74	60.85	31.04	21.04	Upgradient Monitoring Well
GWA-14	10/27/2015	855474.41	956656.96	49.90	58.50	61.40	21.80	11.80	Upgradient Monitoring Well
GWC-15(*GWB-15)	10/27/2015	855322.23	956314.50	40.30	53.42	56.72	26.72	16.72	Upgradient Monitoring Well
GWA-16(*GWB-16)	10/27/2015	855640.15	956094.66	40.27	51.33	54.60	24.63	14.63	Upgradient Monitoring Well
GWC-17**	10/28/2015	856011.50	956102.41	40.05	51.14	54.19	24.44	14.44	Upgradient Monitoring Well
GWC-18**	10/29/2015	856205.99	956438.21	42.20	56.48	59.68	27.78	17.78	Upgradient Monitoring Well
GWC-19	10/29/2015	856400.89	956801.55	36.95	50.67	53.62	26.97	16.97	Downgradient Monitoring Well
GWC-20	10/30/2015	856562.11	957093.85	30.13	44.10	47.23	27.40	17.40	Downgradient Monitoring Well
GWC-21	11/4/2015	856734.08	957390.27	27.16	42.00	45.16	28.30	18.30	Downgradient Monitoring Well
GWC-22(*PZ-22)	11/4/2015	856950.77	957722.65	31.65	47.42	51.07	29.72	19.72	Downgradient Piezometer
GWC-23	05/26/2016	856905.66	957714.42	33.70	NA	52.16	28.76	18.76	Downgradient Monitoring Well

Notes:

bTOC - below top of casing

ft - feet

NA - not applicable or not available

All monitoring wells and piezometers are 2 inches in diameter and casing material is polyvinyl chloride (PVC).

Elevations are in feet relative to North American Vertical Datum (NAVD)88

Northing and easting are in feet North American Datum (NAD)83, State Plane Georgia East Zone

During each groundwater monitoring event, monitoring wells are gauged for water levels and sampled for laboratory analysis and piezometers are gauged for water level only.

Monitoring wells GWC-6, 7, and 8 were abandoned in June 29, 2015 in preparation for Cell 2A construction.

Monitoring well GWC-22 was replaced with GWC-23 in May 2016; GWC-22(*PZ-22) is now used for water level measurement only.

*Change requested in the November 2018 minor modification request (Well IDs in parentheses are the proposed Well IDs).

**Monitoring wells GWC-17 and GWC-18 are included in the background monitoring statistical pool as described in the April 2018 Alternative Source Demonstration.

Table 2. Groundwater Sampling Event Summary for 2018

2018 Annual Groundwater Monitoring and Corrective Action Report
Georgia Power Company
Plant McIntosh Landfill No. 4
Effingham County, Georgia

Well ID	Hydraulic Location and Purpose	Summary of Sampling Events		
		Detection		Verification
	Sampling Dates	January 10-12, 2018	July 11-12, 2018	September 13, 2018
GWC-1	Downgradient Monitoring Well	✓	✓	
GWA-2	Upgradient Monitoring Well	✓	✓	
GWA-3	Upgradient Monitoring Well	✓	✓	
GWC-4A(*GWB-4A)	Upgradient Monitoring Well	✓	✓	
GWC-5(*GWB-5)	Upgradient Monitoring Well	✓	✓	
GWC-9	Downgradient Monitoring Well	✓	✓	✓
GWC-10	Downgradient Monitoring Well	✓	✓	
GWC-11	Downgradient Monitoring Well	✓	✓	
GWC-12	Downgradient Monitoring Well	✓	✓	
GWA-13	Upgradient Monitoring Well	✓	✓	
GWA-14	Upgradient Monitoring Well	✓	✓	
GWC-15(*GWB-15)	Upgradient Monitoring Well	✓	✓	
GWA-16(*GWB-16)	Upgradient Monitoring Well	✓	✓	
GWC-17**	Upgradient Monitoring Well	✓	✓	
GWC-18**	Upgradient Monitoring Well	✓	✓	
GWC-19	Downgradient Monitoring Well	✓	✓	
GWC-20	Downgradient Monitoring Well	✓	✓	✓
GWC-21	Downgradient Monitoring Well	✓	✓	
GWC-23	Downgradient Monitoring Well	✓	✓	

Notes:

*Change requested in the November 2018 major modification request (Well IDs in parentheses are the proposed Well IDs).

**Monitoring wells GWC-17 and GWC-18 are included in the background monitoring statistical pool as described in the April 2018 Alternative Source Demonstration.

Table 3. Summary of Groundwater Elevations
2018 Annual Groundwater Monitoring and Corrective Action Report
Georgia Power Company
Plant McIntosh Landfill No. 4
Effingham County, Georgia

Well ID	Top of Casing Elevation (ft NAVD)	Groundwater Elevations (ft NAVD)	
		January 8, 2018	July 9, 2018
GWC-1	47.06	31.85	31.68
GWA-2	53.64	36.75	36.47
GWA-3	57.93	37.38	36.49
GWC-4A (*GWB-4A)	64.98	39.56	39.27
GWC-5 (*GWB-5)	62.29	38.12	37.78
GWC-9	53.56	24.90	24.44
GWC-10	49.55	25.19	24.68
GWC-11	57.97	25.08	24.53
GWC-12	57.26	30.54	30.11
GWA-13	60.85	36.63	35.74
GWA-14	61.40	36.90	35.61
GWC-15 (*GWB-15)	56.72	36.21	34.81
GWA-16 (*GWB-16)	54.60	31.36	30.45
GWC-17	54.19	27.68	26.99
GWC-18	59.68	24.30	24.03
GWC-19	53.62	24.13	23.96
GWC-20	47.23	24.37	24.17
GWC-21	45.16	24.37	24.13
GWC-22[(1)] (*PZ-22)	51.07	23.71	23.22
GWC-23	52.16	23.73	23.27

Notes:
ft - feet
Elevations are in feet relative to North American Vertical Datum (NAVD)88
[(1)] Monitoring well GWC-22 was replaced with GWC-23 for monitoring in May 2016.
*Change requested in the November 2018 major modification request (Well IDs in parentheses are the proposed Well IDs).

Table 4. Groundwater Flow Velocity Calculations - 2018
2018 Annual Groundwater Monitoring and Corrective Action Report
Georgia Power Company
Plant McIntosh Landfill No. 4
Effingham County, Georgia

Monitoring Wells	h_1	h_2	K (ft/day)	n_e	dh (ft)	dl (ft)	i (ft/ft)	Velocity (ft/day)	Velocity (ft/year)
GWA-3 and GWC-11	36.49	24.53	0.859	0.20	11.96	1,057	0.011	0.047	17.16
GWC-5(*GWB-5) and GWC-23	37.78	23.27			14.51	1,296	0.011	0.047	17.16
GWA-14 and GWC-18	35.61	24.03			11.58	764	0.015	0.064	23.36
								Avg. (ft/day)	Avg. (ft/year)
								0.053	19.23

Notes:
ft - feet
h_1 and h_2 - groundwater elevation at location 1 and 2
K - hydraulic conductivity
n_e - effective porosity
dh - difference between h_1 and h_2
dl - distance between locations 1 and 2
i - hydraulic gradient (dh/dl)
Velocity = linear velocity = Ki/n_e
*Change requested in the November 2018 major modification request (Well IDs in parentheses are the proposed Well IDs).
Groundwater elevations collected on July 9, 2018.

Table 5. Summary of Groundwater Analytical Data
2018 Annual Groundwater Monitoring and Corrective Action Report
Georgia Power Company
Plant McIntosh Landfill No. 4
Effingham County, Georgia

		Location Name	GWC-1			GWA-2		GWA-3		GWC-4A (*GWB-4A)		GWC-5 (*GWB-5)		GWC-9				GWC-10		GWC-11		GWC-12		
		Sample Name	GWC-1			GWA-2		GWA-3		GWA-4R		GWA-5		GWC-9				GWC-10		GWC-11		GWC-12		
		Sample Date	1/11/2018	Jan-DUP	7/12/2018	1/10/2018	7/11/2018	1/10/2018	7/11/2018	1/10/2018	7/11/2018	1/10/2018	7/11/2018	1/12/2018	7/12/2018	Jul-DUP	9/13/2018	1/11/2018	7/12/2018	1/11/2018	7/12/2018	1/11/2018	Jan-DUP	7/12/2018
Analyte	**Units**	**CAS No.**																						
Field Parameters																								
pH	SU	pH	5.02		5.04	4.78	4.75	4.93	4.87	5.05	4.53	5.59	5.49	4.83	4.80		4.84	6.32	6.70	6.15	6.63	5.13		5.09
ORP	µS/cm	ORP	122.90		136.4	115.20	70.6	120.20	233.6	97.20	142.3	104.90	152.1	42.80	256.3		102.0	101.50	59.7	97.70	52.3	85.50		141.1
Specific Conductivity	mV	COND	57.10		58.5	40.60	39.0	31.66	31.4	48.40	67.4	41.20	38.2	46.80	46.2		47.0	162.40	276.8	92.30	142.7	27.30		25.2
DO	mg/L	DO	2.39		2.23	4.28	4.05	5.08	5.73	0.34	1.43	6.14	6.21	6.48	6.54		6.82	4.94	2.20	3.24	1.89	5.28		6.28
Temperature	°Celsius	TEMP	21.12		23.41	18.88	22.62	19.28	25.19	19.72	25.53	18.74	26.13	21.05	23.65		22.90	21.06	23.05	19.84	21.51	21.45		22.52
Turbidity	NTU	TURB	3.76		0.87	0.34	1.68	1.53	0.98	0.51	0.96	0.41	0.57	0.62	0.54		0.77	0.48	0.83	0.24	1.66	0.52		0.38
Appendix III Parameters																								
Boron	mg/L	7440-42-8	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	--	**0.060**	**0.054**	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021
Calcium	mg/L	7440-70-2	**2.4**	**2.4**	**1.8**	**0.52**	**0.50**	**0.88**	**0.81**	**0.82**	**1.0**	**3.3**	**3.0**	**0.40**	**0.49**	**0.45**	--	**15**	**27**	**9.3**	**13**	**0.78**	**0.74**	**0.67**
Chloride	mg/L	16887-00-6	**7.5**	**7.5**	**7.0**	**4.6**	**5.0**	**4.2**	**4.3**	**3.3**	**3.2**	**3.2**	**3.5**	**9.0**	**9.4**	**9.5**	**9.1**	**5.9**	**5.1**	**4.3**	**4.3**	**3.4**	**3.4**	**3.7**
Fluoride	mg/L	16984-48-8	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	--	**0.15 J**	**0.13 J**	**0.31**	**0.25**	< 0.082	< 0.082	< 0.082
pH	SU	pH	5.02		5.04	4.78	4.75	4.93	4.87	5.05	4.53	5.59	5.49	4.83	4.80		4.84	6.32	6.70	6.15	6.63	5.13		5.09
Sulfate	mg/L	14808-79-8	**1.6**	**1.5**	**1.1**	< 0.70	< 0.70	**1.1**	< 0.70	**7.6**	**14**	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	--	**2.6**	**5.0**	**3.5**	**5.9**	< 0.70	< 0.70	< 0.70
Total Dissolved Solids	mg/L	TDS	**100 J**	< 3.40 J	**24 J**	**6 J**	**16 J**	**28 J**	**12 J**	**42 J**	< 3.4 J	**48 J**	**22 J**	**48 J**	**42 J**	**48 J**	--	**150 J**	**140 J**	**10 J**	**94 J**	**34 J**	**80 J**	**26 J**

		Location Name	GWA-13		GWA-14		GWC-15 (*GWB-15)		GWA-16 (*GWB-16)		GWC-17		GWC-18			GWC-19		GWC-20			GWC-21		GWC-23	
		Sample Name	GWA-13		GWA-14		GWA-15		GWA-16		GWC-17		GWC-18			GWC-19		GWC-20			GWC-21		GWC-23	
		Sample Date	1/10/2018	7/11/2018	1/11/2018	7/11/2018	1/11/2018	7/11/2018	1/11/2018	7/11/2018	1/11/2018	7/11/2018	1/12/2018	7/11/2018	Jul-DUP	1/12/2018	7/11/2018	1/12/2018	7/11/2018	9/13/2018	1/11/2018	7/11/2018	1/12/2018	7/12/2018
Analyte	**Units**	**CAS No.**																						
Field Parameters																								
pH	SU	pH	**4.90**	**4.99**	**5.19**	**5.25**	**5.01**	**5.01**	**4.97**	**5.07**	**5.28**	**5.23**	**6.47**	**6.18**		**5.59**	**5.60**	**4.97**	**4.89**	**4.91**	**4.98**	**4.96**	**5.35**	**5.21**
ORP	µS/cm	ORP	**90.10**	**73.0**	**84.60**	**305.6**	**64.40**	**93.6**	**104.50**	**171.3**	**78.80**	**425.6**	**97.90**	**113.5**		**77.00**	**153.0**	**92.2**	**445.5**	**100.7**	**108.1**	**165.6**	**103.9**	**294.9**
Specific Conductivity	mV	COND	**25.10**	**22.0**	**25.40**	**26.8**	**26.70**	**25.7**	**21.80**	**23.1**	**34.90**	**33.7**	**130.40**	**101.4**		**93.00**	**95.1**	**52.20**	**51.2**	**48.9**	**40.10**	**40.3**	**41.8**	**40.5**
DO	mg/L	DO	**5.91**	**6.79**	**6.75**	**6.40**	**6.47**	**7.12**	**7.37**	**7.07**	**5.17**	**5.41**	**3.21**	**3.49**		**3.37**	**3.35**	**4.68**	**4.62**	**5.71**	**5.39**	**5.58**	**3.8**	**4.14**
Temperature	°Celsius	TEMP	**20.57**	**25.02**	**19.32**	**24.97**	**20.83**	**25.25**	**20.93**	**26.59**	**20.68**	**24.59**	**19.55**	**24.42**		**19.23**	**25.44**	**20.39**	**25.09**	**23.38**	**20.75**	**25.44**	**20.03**	**23.76**
Turbidity	NTU	TURB	**0.73**	**2.77**	**2.89**	**1.59**	**1.15**	**3.01**	**2.53**	**3.15**	**0.52**	**0.36**	**3.35**	**4.37**		**4.21**	**4.72**	**0.30**	**0.45**	**0.74**	**2.15**	**0.36**	**1.44**	**0.72**
Appendix III Parameters																								
Boron	mg/L	7440-42-8	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	--	< 0.021	< 0.021	< 0.021	< 0.021
Calcium	mg/L	7440-70-2	**0.27**	**0.32**	**0.51**	**0.47**	**0.41**	**0.53**	**0.43**	**0.45**	**2.1**	**2.1**	**15**	**12**	**12**	**9.5**	**10**	**1.7**	**1.7**	--	**1.0**	**1.1**	**1.4**	**1.2**
Chloride	mg/L	16887-00-6	**3.4**	**3.4**	**3.9**	**4.2**	**3.4**	**3.8**	**3.4**	**3.7**	**4.1**	**4.4**	**4.5**	**4.9**	**4.9**	**9.0**	**9.1**	**9.0**	**9.9**	**8.9**	**5.8**	**6.4**	**4.3**	**4.9**
Fluoride	mg/L	16984-48-8	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	**0.12 J**	**0.13 J**	**0.55**	**0.59**	**0.57**	**0.083 J**	**0.091 J**	< 0.082	< 0.082	--	< 0.082	< 0.082	< 0.082	< 0.082
pH	SU	pH	**4.90**	**4.99**	5.19	**5.25**	**5.01**	**5.01**	**4.97**	**5.07**	**5.28**	**5.23**	**6.47**	**6.18**		**5.59**	**5.60**	**4.97**	**4.89**	**4.91**	**4.98**	**4.96**	**5.35**	**5.21**
Sulfate	mg/L	14808-79-8	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70	**4.5**	**5.0**	**5.4**	**1.5**	**1.4**	**0.86 J**	**0.90 J**	--	< 0.70	< 0.70	**1.9**	**2.0**
Total Dissolved Solids	mg/L	TDS	**10 J**	**28 J**	**36 J**	**20 J**	**56 J**	< 3.4 J	**6 J**	**24 J**	**18 J**	**22 J**	**110 J**	**16 J**	**100 J**	**81 J**	**38 J**	**56 J**	**32 J**	--	**20 J**	**52 J**	**43 J**	**40**

General Notes:
CAS No. - Chemical Abstracts Service Registry Number
Bolded - detected value
µS/cm - microsiemens per centimeter
mg/L - milligrams per liter
mV - millivolts
NTU - nephelometric turbidity units
SU - Standard Units
*Change requested in the November 2018 major modification request.
Temperature, specific conductance, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity were measured and recorded in the field.

Validator Qualifiers:
< - The analyte was not detected at a concentration above the specified laboratory reporting limit.
J - The result is an estimated value.

Table 6. Calculated Upper Prediction Limits
Annual Groundwater Monitoring and Corrective Action Report - January 2019
Georgia Power Company
Plant McIntosh Landfill No. 4
Effingham County, Georgia

Constituent	Well	Upper Limit (mg/L)	Background Number of Samples	Number of Detected Values	% Non-Detect Values	Transform	Alpha	Method
Boron	Pooled Upgradient	0.05	210	28	87	n/a	0.000163	NP Interwell (NDs) 1 of 2
Calcium	Pooled Upgradient	33.2	210	210	0	n/a	0.000163	NP Interwell (normality) 1 of 2
Chloride	Pooled Upgradient	9.4	211	211	0	n/a	0.000163	NP Interwell (normality) 1 of 2
Fluoride	Pooled Upgradient	0.74	209	69	67	n/a	0.000163	NP Interwell (NDs) 1 of 2
pH	Pooled Upgradient	7.1	266	226	15	n/a	0.0002695	NP Interwell (normality) 1 of 2
Sulfate	*	*	209	141	33	n/a	0.0001634	NP Intrawell (normality) 1 of 3
Total Dissolved Solids	Pooled Upgradient	150	208	186	11	n/a	0.0001636	NP Interwell (normality) 1 of 2

Notes:

*Sulfate is evaluated on an intrawell basis. Comparison criteria are well-specific and no single value applies to the entire downgradient well network.

mg/L - milligrams per liter

n/a - not applicable

NDs - non-detects

NP - non-parametric

Figures

LEGEND

Plant McIntosh Approximate Property Boundary

0 3,000 6,000 9,000 12,000

SCALE: 1 inch = 3000 feet

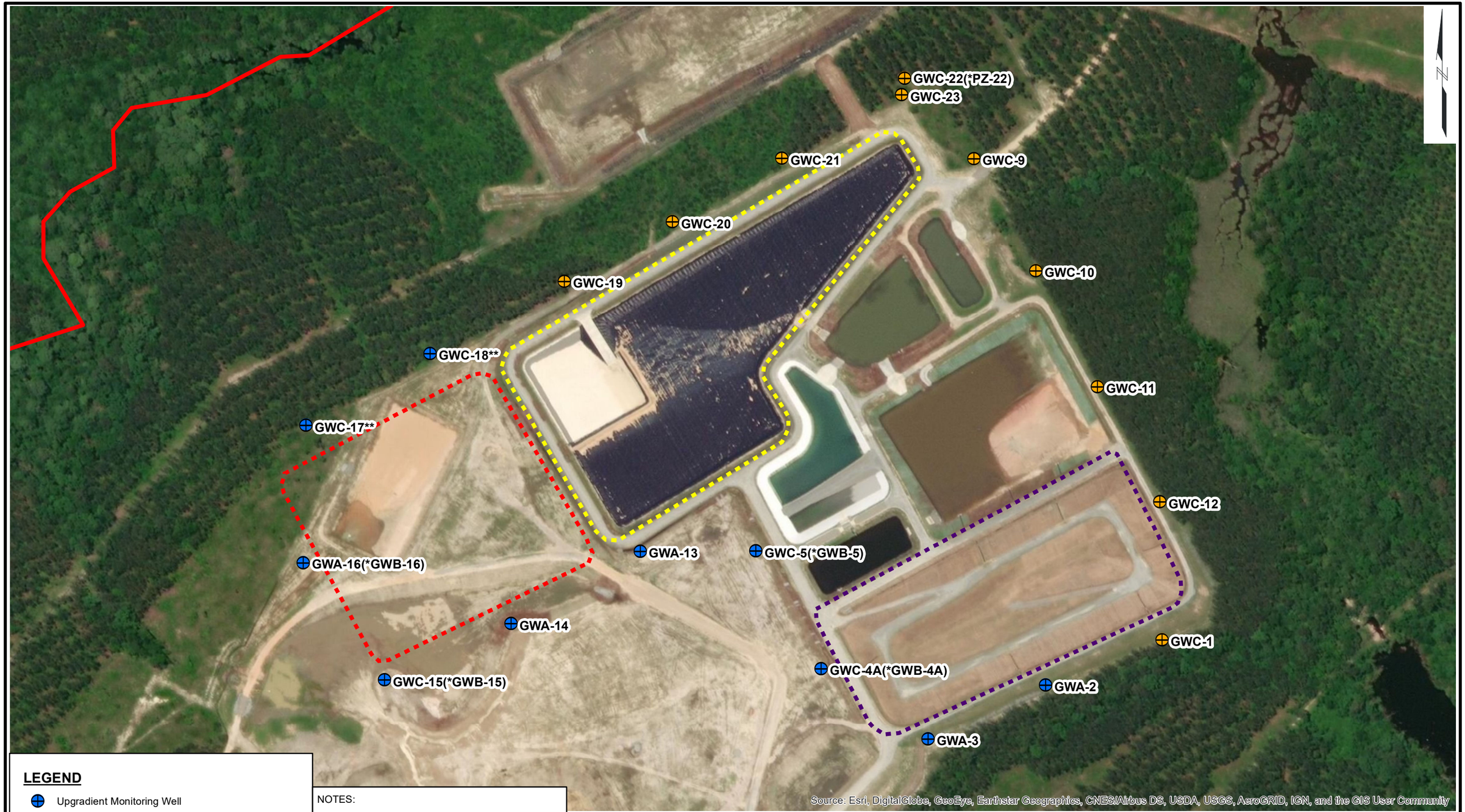
2018 Annual Groundwater Monitoring and Corrective Action Report - Plant McIntosh Landfill No. 4
Effingham County, Georgia

Georgia Power Company
Atlanta, Georgia

GEI Consultants

PLANT MCINTOSH
SITE LOCATION MAP

Project No. 1800205 | Prepared February 2019 | Fig. 1



LEGEND

- Upgradient Monitoring Well
- Downgradient Monitoring Well
- Approximate Property Boundary
- Cell 1 Approximate Boundary
- Cell 2A Approximate Boundary
- Cell 2B Approximate Boundary (Not yet constructed)

NOTES:

* Change requested as a part of the November 2018 D&O Modification. Well designations will be updated once modification is approved.

** Monitoring Wells GWC-17 and GWC-18 are included in the background monitoring statistical pool as described in the April 2018 Alternative Source Demonstration.

0 250 500

SCALE: 1 inch = 250 feet

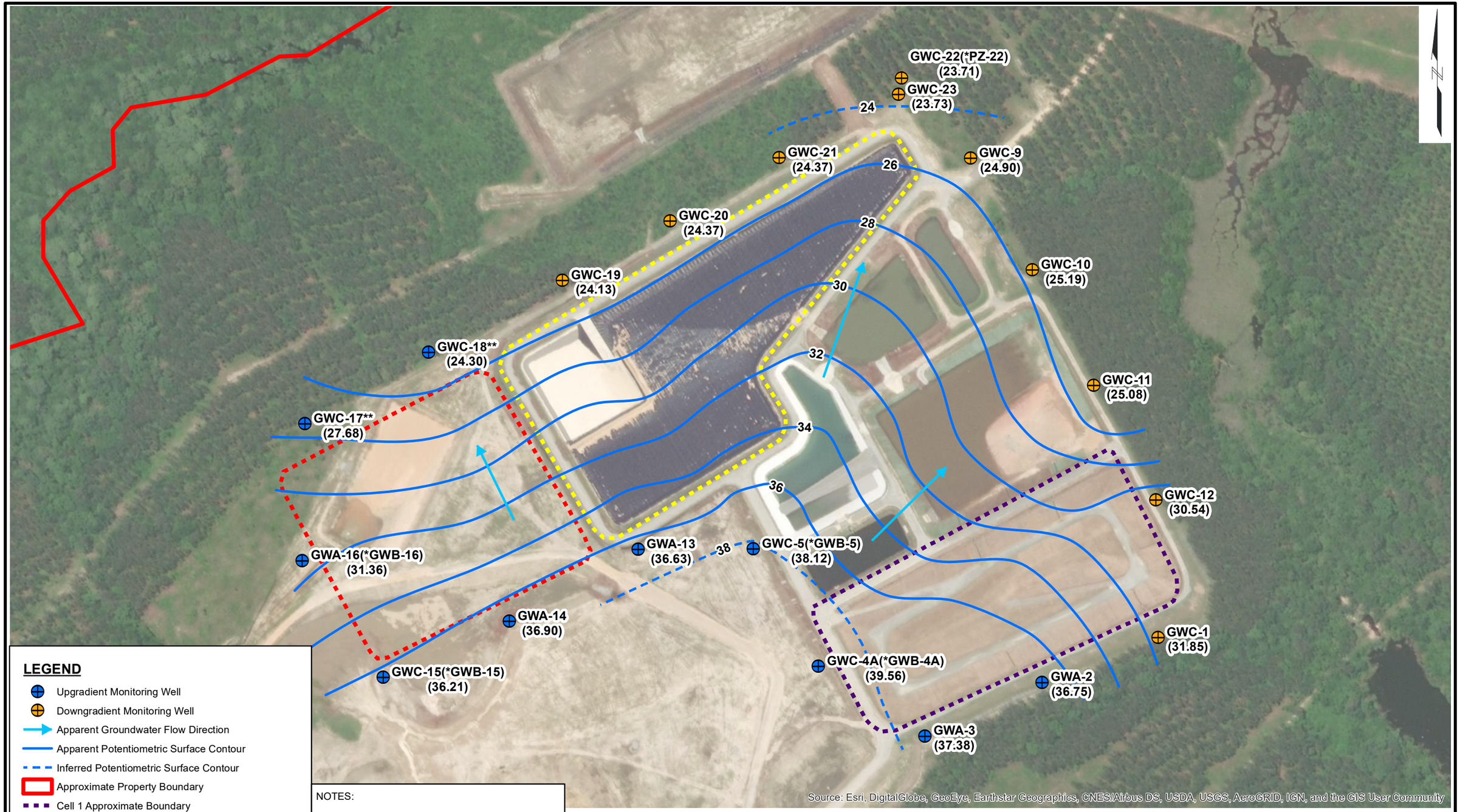
2018 Annual Groundwater Monitoring and Corrective Action Report - Plant McIntosh Landfill No. 4
Effingham County, Georgia

Georgia Power Company
Atlanta, Georgia

GEI Consultants

LANDFILL NO. 4
WELL LOCATION MAP

Project No. 1800205 | Prepared February 2019 | Fig. 2



LEGEND

- Upgradient Monitoring Well
- Downgradient Monitoring Well
- Apparent Groundwater Flow Direction
- Apparent Potentiometric Surface Contour
- Inferred Potentiometric Surface Contour
- Approximate Property Boundary
- Cell 1 Approximate Boundary
- Cell 2A Approximate Boundary
- Cell 2B Approximate Boundary (Not yet constructed)

(31.85) = Groundwater elevation measured 01/08/18

Elevations are in feet relative to North American Vertical Datum (NAVD)88

NOTES:

* Change requested as a part of the November 2018 D&O Modification. Well designations will be updated once modification is approved.

** Monitoring Wells GWC-17 and GWC-18 are included in the background monitoring statistical pool as described in the April 2018 Alternative Source Demonstration.

0 250 500

SCALE: 1 inch = 250 feet

2018 Annual Groundwater Monitoring and Corrective Action Report - Plant McIntosh Landfill No. 4
Effingham County, Georgia

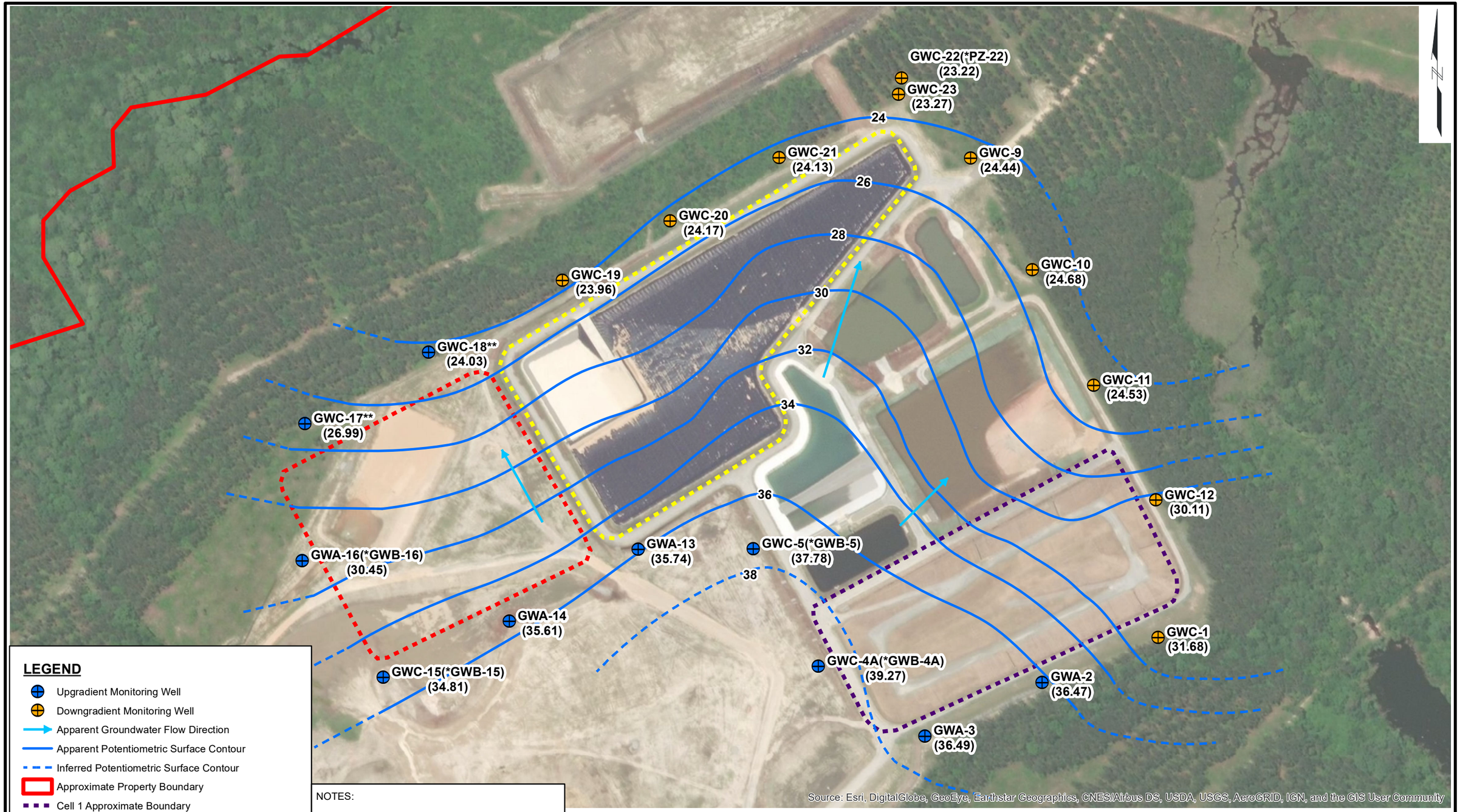
Georgia Power Company
Atlanta, Georgia

GEI Consultants

Project No. 1800205

LANDFILL NO. 4
POTENTIOMETRIC SURFACE CONTOUR MAP - January 2018

Prepared February 2019 Fig. 3



LEGEND

- Upgradient Monitoring Well
- Downgradient Monitoring Well
- Apparent Groundwater Flow Direction
- Apparent Potentiometric Surface Contour
- Inferred Potentiometric Surface Contour
- Approximate Property Boundary
- Cell 1 Approximate Boundary
- Cell 2A Approximate Boundary
- Cell 2B Approximate Boundary (Not yet constructed)

(31.68) = Groundwater elevation measured 07/09/18

Elevations are in feet relative to North American Vertical Datum (NAVD)88

NOTES:

* Change requested as a part of the November 2018 D&O Modification. Well designations will be updated once modification is approved.

** Monitoring Wells GWC-17 and GWC-18 are included in the background monitoring statistical pool as described in the April 2018 Alternative Source Demonstration.

0 250 500

SCALE: 1 inch = 250 feet

2018 Annual Groundwater Monitoring and Corrective Action Report - Plant McIntosh Landfill No. 4
Effingham County, Georgia

Georgia Power Company
Atlanta, Georgia

GEI Consultants

Project No. 1800205

LANDFILL NO. 4
POTENTIOMETRIC SURFACE CONTOUR MAP - July 2018

Prepared February 2019 Fig. 4

Appendix A

ASD

GEI Consultants

Consulting
Engineers and
Scientists

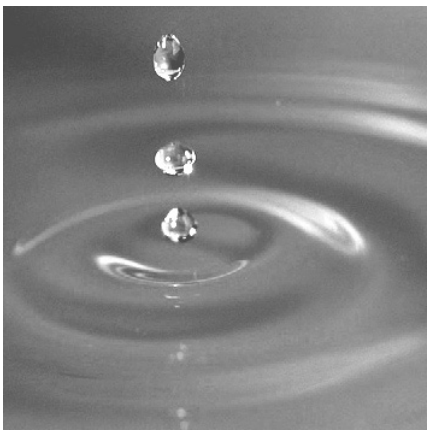
Georgia Power Company

Alternative Source Demonstration

Plant McIntosh Coal Combustion By-Product
Landfill No. 4
Permit No. 051-010D (L) (I)

Prepared by:
GEI Consultants, Inc.
1375 Peachtree Street, Suite A15
Atlanta, GA 30309

April 16, 2018
Project 1800205



Prepared by: Richard Frappa, P.G.
Senior Consultant

Reviewed By: Michael Cummings, P.G.
Hydrogeologist

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Appendix

PROFESSIONAL ENGINEER CERTIFICATION

"I hereby certify that this Alternative Source Demonstration prepared for Georgia Power's Plant McIntosh Coal Combustion By-Product Landfill No. 4 meets requirements in United States Environmental Protection Agency, Coal Combustion Residual (CCR) Rule, 40 Code of Federal Regulations (CFR) Part 257 Subpart D; published in 80 FR 21302-21501, April 17, 2015 and that the information used in this report is accurate pursuant to the requirements of 40 CFR §257.94(e)(2). I am a duly licensed Professional Engineer under the laws of the State of Georgia."

04/16/2018

John M. Trast, P.E.
License No. PE41928

1. Introduction

This document presents an alternative source demonstration (ASD) for the statistically significant increases (SSIs) of Appendix III groundwater monitoring parameters published in Title 40 Code of Federal Regulations 257 Subpart D (40 CFR Part 257) [the Federal Coal Combustion Residuals (CCR) Rule or CCR Rule] detected in samples collected from monitoring wells at Georgia Power Company's (GPC's) Plant McIntosh Coal Combustion By-Product Landfill No. 4 (Landfill No. 4). This ASD has been prepared pursuant to CCR Rule regulation 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*."

Plant McIntosh is located in southeast Effingham County, Georgia, approximately 4 miles northeast of the city of Rincon, and 20 miles north-northwest of the city of Savannah. Landfill No. 4 is permitted for the disposal of CCR. In accordance with the CCR Rule, Landfill No. 4 is classified as a CCR Landfill. Plant McIntosh and Landfill No. 4 are shown on Figure 1.

A 2017 Annual Groundwater Monitoring and Corrective Action Report (2017 Annual Report) was prepared in January 2018 to document 2017 groundwater monitoring activities at Landfill No. 4 to satisfy the requirements of 40 CFR 257.90(e). Landfill No. 4 is in detection monitoring and is sampled in accordance with the monitoring requirements specified in 40 CFR 257.90 through 257.94. Conclusions presented in the 2017 Annual Report identified SSIs for Appendix III parameters in downgradient monitoring wells. Verification samples were collected and analyzed that confirmed the following SSIs:

- Boron: GWC-10
- Calcium: GWC-10, GWC-11, GWC-18, and GWC-19
- Chloride: GWC-9
- Fluoride: GWC-11 and GWC-18
- pH: GWC-10, GWC-11, and GWC-18
- Total dissolved solids (TDS): GWC-10 and GWC-11

This ASD provides sufficient evidence that the SSIs identified in the 2017 Annual Report for calcium, chloride, fluoride, pH, and TDS were caused by an error in statistics that excluded data from two valid background wells (GWC-17 and GWC-18) while determining prediction limits. Further, this ASD demonstrates that the statistical assessment did not account for the natural variability of groundwater using a weight-of-evidence based approach that identified an SSI for boron at GWC-10 in the 2017 Annual Report.

1.1 Background

Landfill No. 4 is partially constructed with CCR placed in Cells 1 and 2A (shown on Figure 2). Closure construction for Cell 1 began in June 2015 and final cover construction was completed in August 2016. GPC began construction of Cell 2A in June 2015, and received approval to begin receiving solid waste for disposal on July 20, 2017. Cell 2A began receiving CCR in September 2017. Cells 2B, 3, and 4 are reserved for future development. CCR placement in Cell 2A has occurred in the far western portion of the constructed cell (shown on Figure 2).

1.2 Geology, Hydrogeology and Geochemistry

Landfill No. 4 is situated on sediments that were deposited from the Cretaceous to Pleistocene period and consist of stratified marine deposits and materials eroded from crystalline rock of the Piedmont Region. Boring logs describe soils at Landfill No. 4 as interbedded clays, silts, and sands typical of Coastal Plain sediments. Approximately 10 feet of laterally extensive clayey sand and sandy clay lies above saturated soils comprised of fine to medium silty sand and clayey sand. The uppermost aquifer at Landfill No. 4 is characterized by saturated silty to sandy clays, clayey silts, silty sands, and fine to medium grained sands below the sandy clay. Monitoring wells and piezometers were screened in the uppermost aquifer between 36 and 11 feet (ft.) above mean sea level (MSL), or from approximate 40 to 14 feet North American Vertical Datum (NAVD) 88. Aquifer materials are heterogeneous as isolated areas of silty clay occur within more permeable silty sand and clayey sand deposits of the uppermost aquifer.

Based on groundwater flow at the site documented in the 2017 Annual Report, the general direction of groundwater flow across the site is toward the northwest, north-northeast, and northeast as shown on Figure 2. The groundwater flow pattern observed during the October 2017 detection monitoring event is historically consistent. The calculated groundwater flow velocity at the Landfill No. 4 is approximately 15 feet/year.

2. Alternative Source Demonstration

A review of sampling methods and laboratory analytical protocols confirmed the causes of the SSIs were not related to sampling or laboratory error. Based on review of site information, the SSIs are the result of an error in statistics that excluded data from two valid background wells (GWC-17 and GWC-18) and did not account for the natural variability of groundwater using a weight-of-evidence based approach. The following lines of evidence discussed below support this conclusion:

1. Incorporating valid background data in the statistics eliminated all but one SSI.

2. The remaining SSI (boron at well GWC-10) is a single-parameter exceedance and other CCR indicator parameters do not exhibit SSIs at that location.

3. Boron at well GWC-10 is variable and does not exhibit a statically significant increasing trend.

4. Soils below Landfill No. 4 are heterogeneous containing variable percentages of sand and silt with interbedded clay which influence the chemical composition of local groundwater chemistry.

2.1 Methods

The evaluation of statistical error in determining false SSIs for Landfill No. 4 data was assessed through review of pooled data from upgradient and downgradient detection monitoring wells and revising the statistical application appropriate for the population. During the analysis, GEI observed that data from wells downgradient of unconstructed landfill Cell 2B were treated as downgradient compliance data, and not background. Since the wells are not downgradient of a constructed landfill cell, it is appropriate to include the results in the background data set.

After updating the background data set, the only remaining SSI was boron at well GWC-10. The evaluation of natural variability for boron was completed through review of concentrations and distribution of constituents in groundwater, evaluation of data compared to other CCR indicators and water quality characteristics, and soil composition at Landfill No. 4.

2.2 Statistical Analysis

Statistical data evaluation presented in the 2017 Annual Report used interwell prediction limits determined from pooled background data from eight (8) select upgradient wells at Landfill No. 4: GWA-2, GWA-3, GWC-4A(*GWB-4A), GWC-5(*GWB-5), GWA-13, GWA-14, GWA-15(*GWB-15), and GWA-16(*GWB-16). Monitoring wells GWC-17 and GWC-18, which are downgradient of undeveloped Cell 2B, were included in the downgradient statistical pool. Monitoring well locations relative to the apparent groundwater flow direction and Cells 1, 2A, and 2B are shown on Figure 2.

Based on the location and sequence of CCR disposal at Landfill No. 4, groundwater flow paths below Cell 1 or the western portion of Cell 2A could not have transported CCR constituents from a theoretical release to wells GWC-17 and GWC-18. Since GWC-17 and GWC-18 are not downgradient of an active or closed waste disposal unit, data from these wells are representative of background groundwater quality. Therefore, the inclusion of these two wells in the upgradient statistical pool of background is justified.

To generate prediction limits indicative of true background conditions, data from GWC-17 and GWC-18 were incorporated into the pooled background data set, statistical limits were re-calculated using the comprehensive background pool, and statistical analyses were performed according to the statistical analysis methods certified for the site. Groundwater quality data from the October 2017 detection groundwater monitoring event was compared to the updated prediction limits. Statistical analysis is presented in Appendix A. As shown in Appendix A, using the updated prediction limits eliminates all but one previously reported SSI (boron at GWC-10). This demonstrates that the previously reported SSIs for calcium, chloride, fluoride, pH, and TDS were the result of an error in statistical analysis.

A Mann-Kendall/Sen's Estimate of Slope analysis was performed to evaluate the concentration trend of boron in GWC-10 on Figure 3. The data indicate that the short-term trend evaluated is not statistically significant and likely the result of natural variability.

2.3 Natural Variability of Groundwater

The single SSI of boron in well GWC-10 is not the result of a release from the CCR unit, but is likely the result of natural variability not accommodated by the limited background data set. Information supporting this conclusion includes:

1. The presence of heterogeneous soils at Landfill No. 4.

2. The absence of elevated CCR indicator parameters and any other Appendix III parameter SSIs at this well.

Geochemically, Appendix III parameters (excluding pH) are known as major and secondary cations and anions and occur naturally in groundwater. The concentration of naturally occurring Appendix III parameters is locally influenced by the initial concentration in groundwater (background groundwater quality) and chemical composition of soil surrounding the well screen. As described in Section 1.2, soils at Landfill No. 4 consist of non-uniform interbedded clay, silt, and sand deposits. Groundwater flowing through heterogeneous soil types, especially those containing higher percentages of clay such as that locally present at well GWC-10, would be expected to have somewhat higher and more variable concentrations of major and secondary cations and anions. Other potential differences in groundwater chemistry can occur with changes in oxidation-reduction potential and dissolved oxygen levels caused by ground surface modifications (i.e., general landfill construction activity) (Freeze and Cherry, 1979; USGS, 1998; Leap, D. I., 2017).

Figure 4 illustrates detected concentration ranges using box and whisker plots for each of the Appendix III parameters for each well included in the monitoring well network. Overall, Appendix III parameter concentrations in upgradient and downgradient wells are generally low. As shown in the box and whiskers plots, the upper and lower range of constituent concentrations of each of the Appendix III parameter is bracketed by background chemistry detected in upgradient wells except for boron and chloride (at well GWC-10 - determined not to be an SSI). While boron in well GWC-10 is slightly higher than the range of background values, the concentrations of all other Appendix III parameters in well GWC-10 are within the range of background.

Typically, releases from CCR units increase the concentration of more than one CCR indicator constituent and also cause statistically significant increasing trends in parameters – neither of which occur here. If the SSI at GWC-10 were the result of a CCR release, concentration increases in other indicator parameters would be expected. Based on the presence of a single elevated constituent, insufficient evidence exists to conclude that slightly elevated boron in well GWC-10 is related to a release from the CCR unit. Therefore, data evaluation has demonstrated that the SSI of boron in GWC-10 is the result of variability of naturally occurring constituents in groundwater and not a release from Landfill No. 4.

3. Conclusion

Based on review of the information presented in this ASD, Plant McIntosh Landfill No. 4 is not the source of SSIs identified in the 2017 Annual Report. As presented here, the SSIs were primarily caused by an error in statistics that omitted valid background data. A single SSI of boron at well GWC-10 is attributed to natural groundwater variability. In accordance with 40 CFR 257.94(e)(2), this serves as Georgia Power's demonstration that the CCR Unit is not the source of the SSIs. Pursuant to 40 CFR 257.94(e)(2), Plant McIntosh Landfill No. 4 may continue detection monitoring.

4. References

ERM, 2018. 2017 Annual Groundwater Monitoring and Corrective Action Report for Plant McIntosh Coal Combustion By-product Landfill No. 4.

Freeze, R.A., and Cherry, J.A., 1979. Groundwater: Englewood Cliffs, NJ, Prentice-Hall, 604 p.

Leap, D. I., 2017. Geological Occurrence of Groundwater; in The Handbook of Groundwater Engineering, Third Edition; J.H Cushman and D. M. Tartakovsky, editors; CRC Press Boca Raton, FL, 1074 p.

US Geological Survey, 1998. Ground Water and Surface Water: A Single Resource, USGS Circular 1139.

Figures

LEGEND

Approximate Property Boundary

0 4,000 8,000 12,000 16,000

SCALE: 1 inch = 4000 feet

Alternative Source Demonstration

Georgia Power Company
Atlanta, Georgia

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SITE LOCATION MAP
PLANT MCINTOSH

Project No. 1800205 | April 2018 | Fig. 1

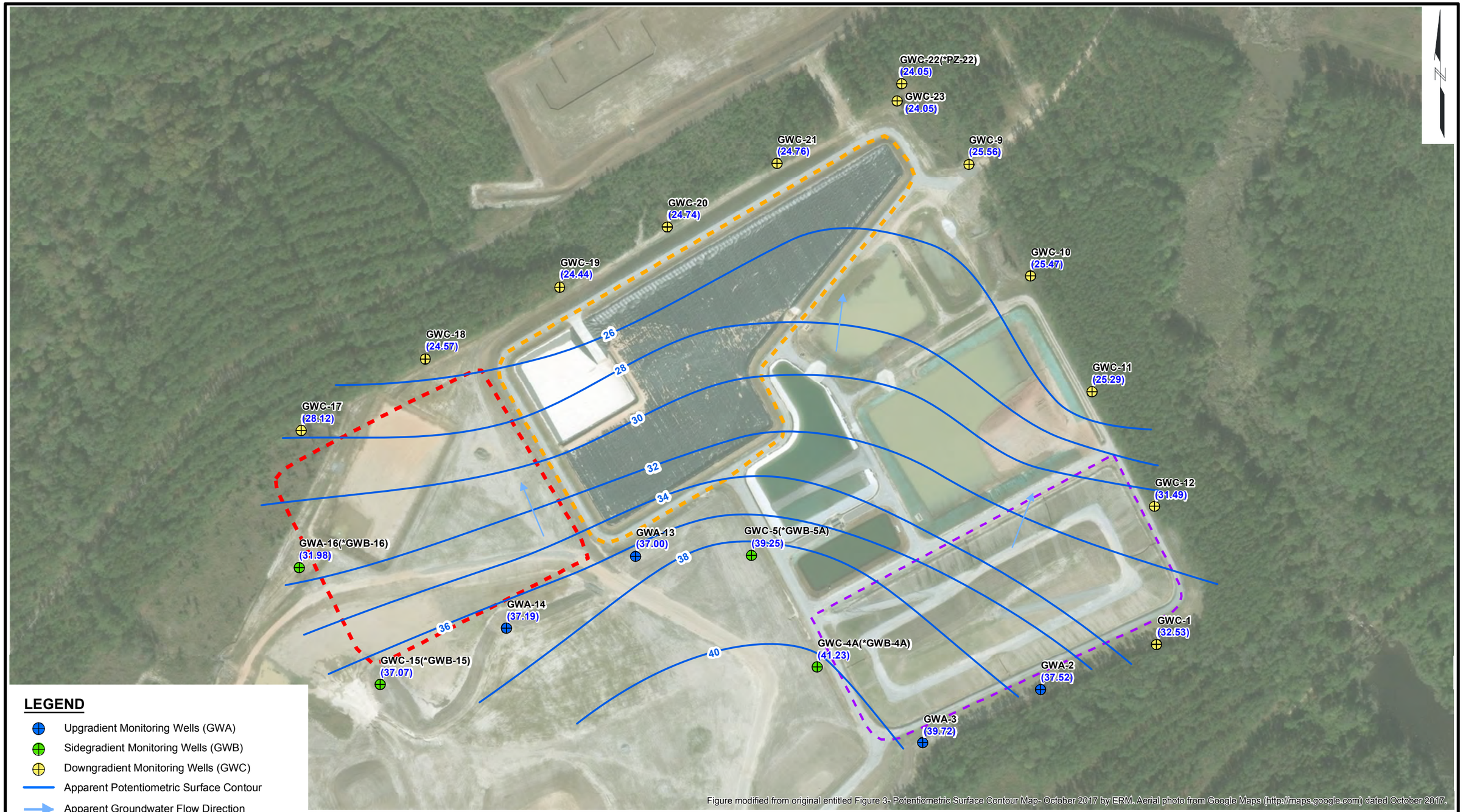

Figure modified from original entitled Figure 3- Potentiometric Surface Contour Map- October 2017 by ERM. Aerial photo from Google Maps (http://maps.google.com) dated October 2017.

LEGEND

- Upgradient Monitoring Wells (GWA)
- Sidegradient Monitoring Wells (GWB)
- Downgradient Monitoring Wells (GWC)
- Apparent Potentiometric Surface Contour
- Apparent Groundwater Flow Direction
- Approximate Boundary of Cell 1
- Approximate Boundary of Cell 2A
- Approximate Boundary of Cell 2B -Not Yet Constructed

(37.19) = Groundwater Elevation Measured in feet by ERM October 9, 2017

0 250 500

SCALE: 1 inch = 250 feet

* Change requested in the March 2017 minor modification request. Well designations will be updated once modification is approved.

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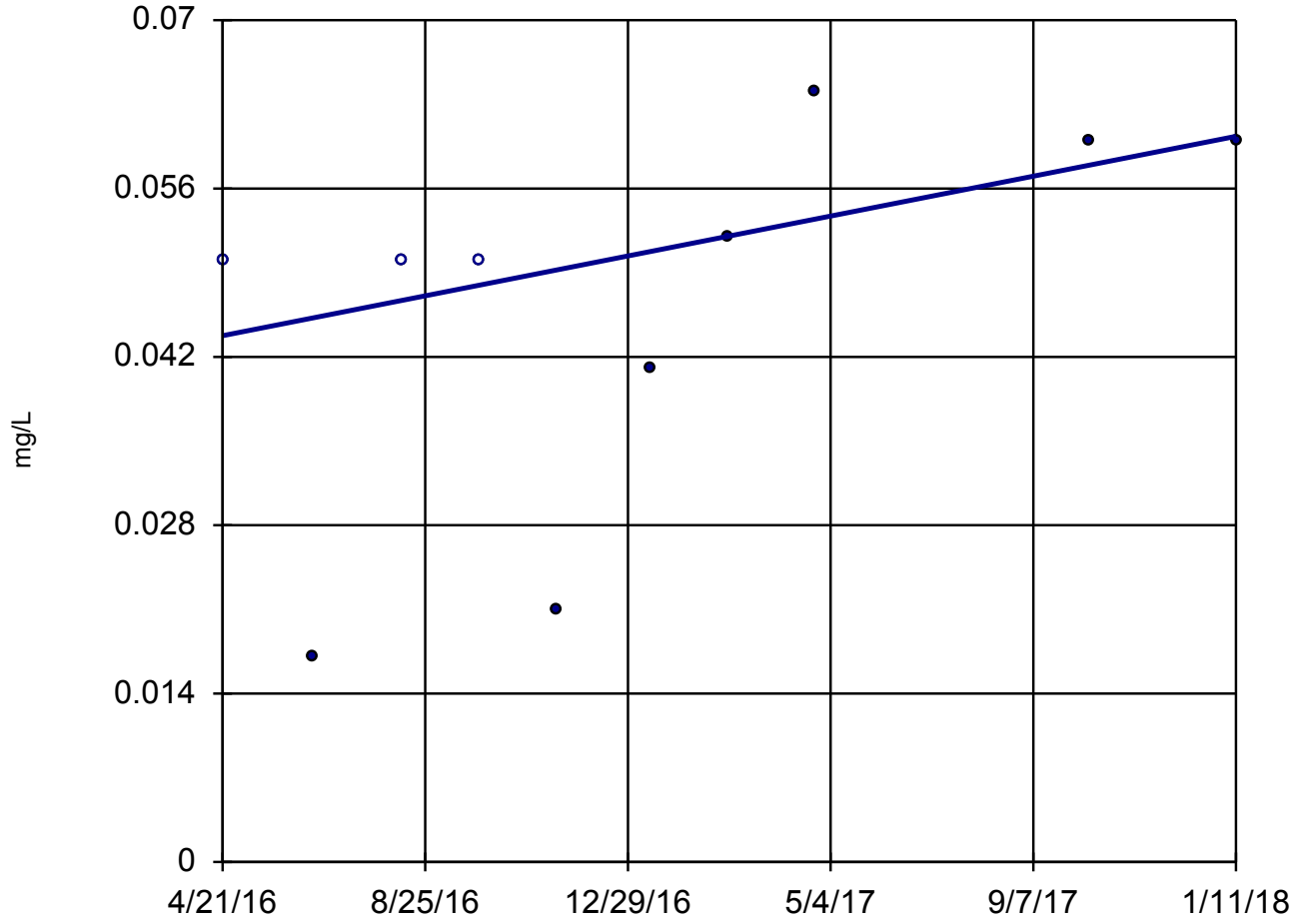
Atlanta, Georgia

GEI Consultants

POTENTIOMETRIC SURFACE CONTOUR MAP- OCTOBER 2017

Project No. 1800205 | April 2018 | Fig. 2

Sen's Slope Estimator
GWC-10 Boron



n = 10

Slope = 0.009605 units per year.

Mann-Kendall statistic = 23
critical = 23

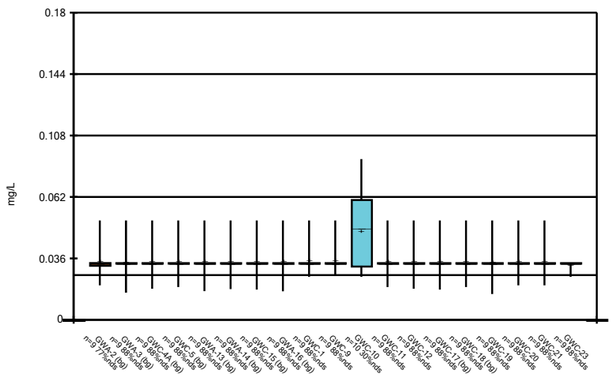
Trend not significant at 95% confidence level (α = 0.025 per tail).

LEGEND

- ● Detected Boron Concentration
- ○ Non-detected Boron Concentration (data point represents laboratory method detection limit)

Alternative Source Demonstration	GEI Consultants	MANN-KENDALL CONCENTRATION TREND ANALYSIS
Georgia Power Company Atlanta, Georgia	Project 1800205	April 2018 Fig. 3

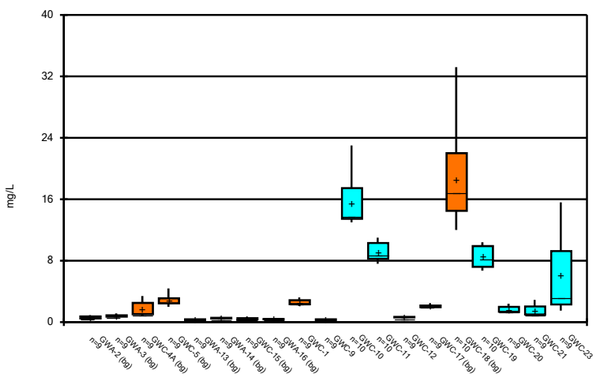
BOREM



Constituent: Boron Analysis Run 2/28/2018 9:37 AM
Facility: Plant McIntosh Data File: CCR McIntosh Landfill4 20180125

Upgradient Well Downgradient Well

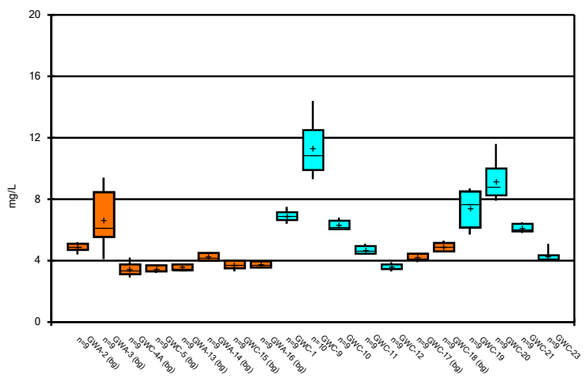
CALCIUM



Constituent: Calcium Analysis Run 2/28/2018 9:39 AM
Facility: Plant McIntosh Data File: CCR McIntosh Landfill4 20180125

Upgradient Well Downgradient Well

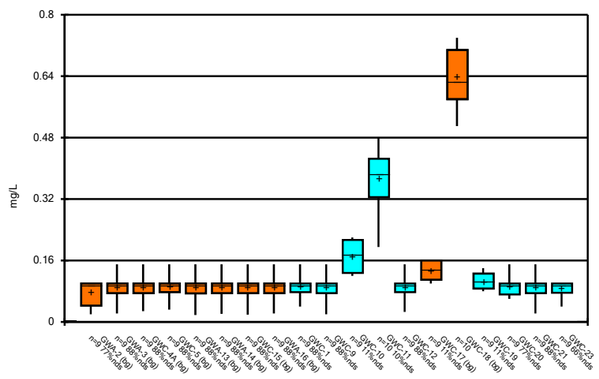
CHLORIDE



Constituent: Chloride Analysis Run 2/28/2018 9:31 AM
Facility: Plant McIntosh Data File: CCR McIntosh Landfill4 20180125

Upgradient Well Downgradient Well

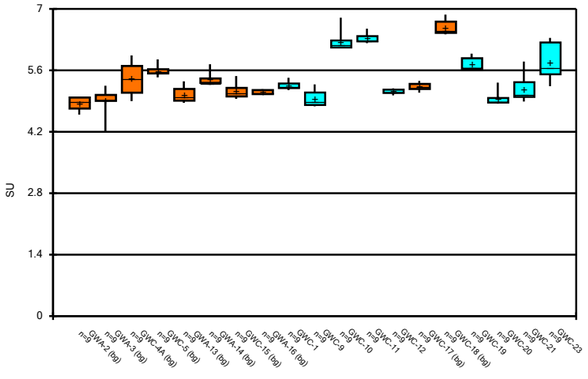
FLUORIDE



Constituent: Fluoride Analysis Run 2/28/2018 9:32 AM
Facility: Plant McIntosh Data File: CCR McIntosh Landfill4 20180125

Upgradient Well Downgradient Well

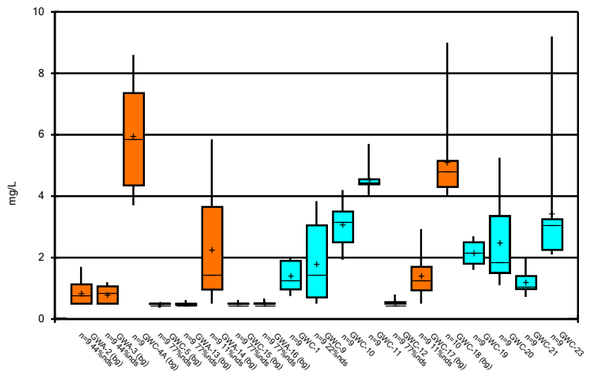
pH



Constituent: pH Analysis Run 2/28/2018 9:33 AM
Facility: Plant McIntosh Data File: CCR McIntosh Landfill4 20180125

Upgradient Well Downgradient Well

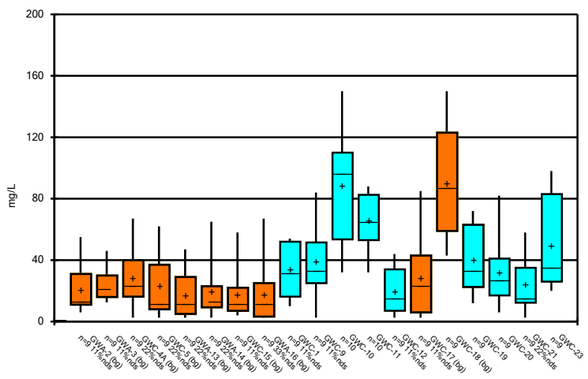
SULFATE



Constituent: Sulfate Analysis Run 2/28/2018 9:34 AM
Facility: Plant McIntosh Data File: CCR McIntosh Landfill4 20180125

Upgradient Well Downgradient Well

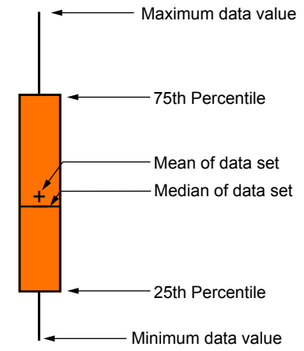
TOTAL DISSOLVED SOLIDS



Constituent: Total Dissolved Solids Analysis Run 2/28/2018 10:23 AM
Facility: Plant McIntosh Data File: CCR McIntosh Landfill4 20180125

Upgradient Well Downgradient Well

LEGEND



Alternative Source Demonstration

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Atlanta, Georgia

GEI Consultants

BOX AND WHISKER PLOTS-
APPENDIX III PARAMETERS

Project 1800205 | April 2018 | Fig. 4

Appendix A

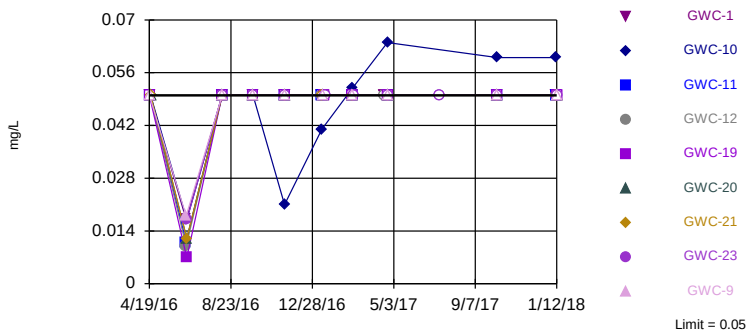
Landfill No. 4 Revised Prediction Limits

Sanitas™ v.9.6.12 Software licensed to GEI Consultants, Inc. P.C. UG
Hollow symbols indicate censored values.

Exceeds Limit: GWC-10

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 100 background values. 89% NDs. Annual per-constituent alpha = 0.003461. Individual comparison alpha = 0.0001926 (1 of 2). Comparing 9 points to limit.

Constituent: Boron Analysis Run 3/29/18 11:42 AM Plant

McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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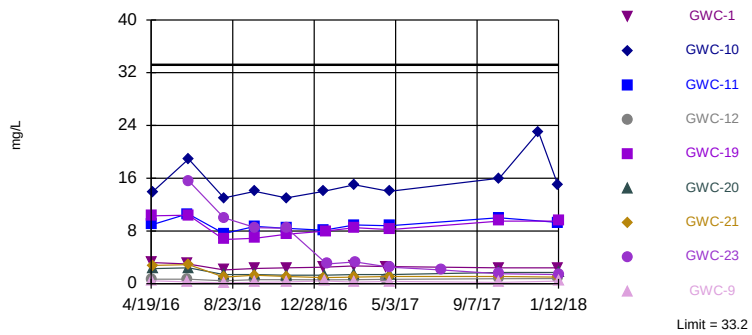
Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 100 background values. Annual per-constituent alpha = 0.003461. Individual comparison alpha = 0.0001926 (1 of 2). Comparing 9 points to limit.

Constituent: Calcium Analysis Run 3/29/18 11:42 AM Plant

McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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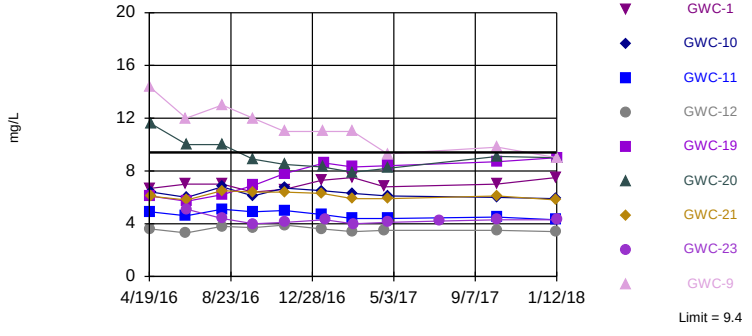
Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 100 background values. Annual per-constituent alpha = 0.003461. Individual comparison alpha = 0.0001926 (1 of 2). Comparing 9 points to limit.

Constituent: Chloride Analysis Run 3/29/18 11:42 AM Plant

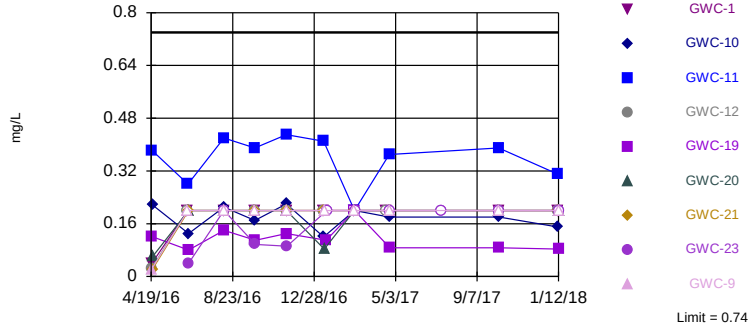
McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Sanitas™ v.9.6.12 Software licensed to GEI Consultants, Inc. P.C. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 100 background values. 72% NDs. Annual per-constituent alpha = 0.003461. Individual comparison alpha = 0.0001926 (1 of 2). Comparing 9 points to limit.

Constituent: Fluoride Analysis Run 3/29/18 11:42 AM Plant

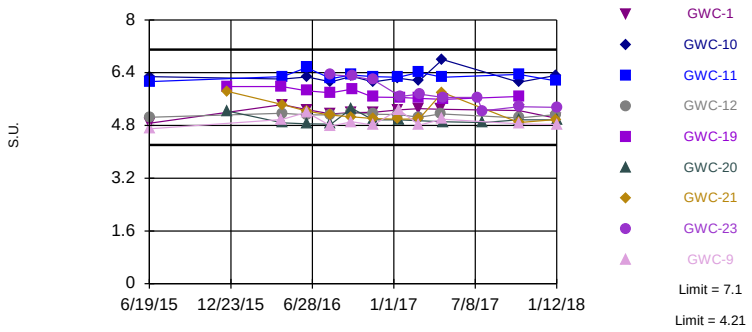
McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Sanitas™ v.9.6.12 Software licensed to GEI Consultants, Inc. P.C. UG

Within Limits

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limits are highest and lowest of 110 background values. Annual per-constituent alpha = 0.005883. Individual comparison alpha = 0.0003273 (1 of 2). Comparing 9 points to limit.

Constituent: pH Analysis Run 3/29/18 11:42 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

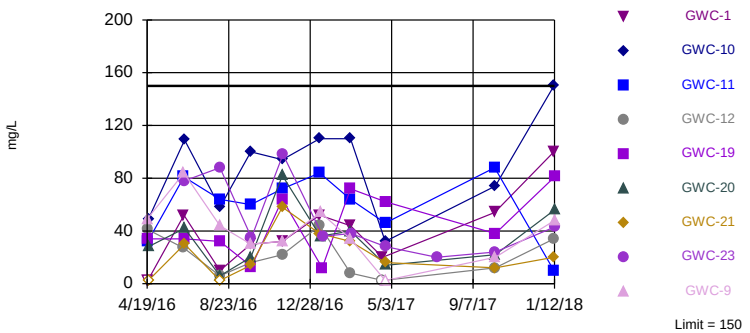
Sanitas™ v.9.6.12 Software licensed to GEI Consultants, Inc. P.C. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 100 background values. 15% NDs. Annual per-constituent alpha = 0.003461. Individual comparison alpha = 0.0001926 (1 of 2). Comparing 9 points to limit.

Constituent: Total Dissolved Solids Analysis Run 3//29/18 11:42 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Appendix B

Laboratory Analytical and Field Sampling Data Reports

ERM

WATER LEVEL MEASUREMENT DATA SHEET

Client: GPC

Site/Location: McIntosh LF4

Date: ~~01/23~~ 01/08/2018

Gauged By: H. Beaugh

Well I.D.	Latitude	Longitude	Time	Depth to Water (Feet BTOC)	Total Depth (Feet BTOC)	Notes (Odor, dedicated pump present, note if lock/cap need replacment,etc.)
GWA-2	--	--	1321	16.89	27.95	
GWA-3	--	--	1314	20.55	37.45	
GWA-4	--	--	1443	25.42	38.99	
GWA-5	--	--	1447	24.17	41.50	
GWA-13	--	--	1439	24.22	40.09	
GWA-14	--	--	1435	24.50	49.90	
GWA-15	--	--	1430	20.51	40.03	
GWA-16	--	--	1422	23.24	40.25	
GWC-1	--	--	1325	15.21	27.59	
GWC-9	--	--	1345	28.66	38.50	
GWC-10	--	--	1340	24.36	32.32	
GWC-11	--	--	1336	32.89	43.50	
GWC-12	--	--	1330	26.72	41.30	
GWC-17	--	--	1417	26.51	40.06	
GWC-18	--	--	1407	35.38	42.46	
GWC-19	--	--	1412	29.49	37.75	
GWC-20	--	--	1402	22.86	30.07	
GWC-21	--	--	1358	20.79	27.47	
GWC-22	--	--	1351	27.36	31.58	
GWC-23	--	--	1349	28.43	--	

Product Name: Low-Flow System

Date: 2018-01-11 12:28:41

Project Information:		Pump Information:	
Operator Name	A. Ellis	Pump Model/Type	Alexis Peristaltic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC - Plant McIntosh	Tubing Diameter	0.17 in
Site Name	LF4	Tubing Length	35 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	463072		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	25 ft

Well Information:		Pumping Information:	
Well ID	GWC-1	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.2462198 L
Well Total Depth	28.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1.2 in
Depth to Water	15.25 ft	Total Volume Pumped	3.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	12:06:19	300.03	20.55	5.02	57.07	6.58	15.35	2.27	126.08
Last 5	12:11:19	600.03	20.53	5.02	57.05	5.53	15.35	2.28	124.97
Last 5	12:16:19	900.03	20.70	5.02	57.19	4.56	15.35	2.32	124.13
Last 5	12:21:19	1200.03	20.94	5.01	57.15	4.62	15.35	2.36	123.84
Last 5	12:26:19	1500.03	21.12	5.02	57.06	3.76	15.35	2.39	122.90
Variance 0			0.17	-0.00	0.14			0.05	-0.84
Variance 1			0.24	-0.00	-0.04			0.04	-0.29
Variance 2			0.18	0.00	-0.09			0.03	-0.93

Notes

Purge time 1201/1226

Grab Samples

GWC-1-20180111-01

1226

DUP-1-20180111-001

--

GROUNDWATER SAMPLING LOG SHEET

Client: GPC | Project No.: 0372382 | Sampling Date: 1/10/2018

Site: Plant McIntosh | Location: (circle one) LF3 (LF4) AP | Sampler's Name: H. Beaugh

Well ID: GWA-2 | Pump Type/Model: Peristaltic | Sample Collection Time: 1227

Total Depth (ft)[1]: 28.5 | Tubing Material: LDPE | Sample Purge Rate (L/min)[3]: 150

Depth to Water (ft): 17.05 | Pump Intake Depth (ft): 23 | Sample ID: GWA-2-20180110-01

Well Diameter (in): 2 | Start/Stop Purge Time: 1141 / 1216 | Laboratory Analyses: See COC

Well Volume (gal) = 0.041d²h: 1.88 | Purge Rate (L/min)[2]: 100 / 150

Well Volume (L) = gal * 3.785: 7.1 / 21.3 (3X) | Total Purge Volume (L): 28.8

d = well diameter (inches) h = length of water column (feet) | Purge Method: (Low-Flow) Well Volume Other: | QA/QC Collected? no

Well Type: Flush (Stick Up) | Sampling Method: (Pump Discharge) Other: | QA/QC I.D.:

Well Lock: (Yes) No

Well Bolted: Yes (No) Bolts Needed: none

Well Cap Condition: (Good) Replace Other

Well Tag Present: (Yes) No Water in Vault: 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_2O Depth (ft btoc)	Notes (Purge method, water clarity, odor, purge rate, issues with pump/well/weather/etc.)
1146	17.60	60.90	4.71	5.61	235.10	0.44	100	0.5	17.08	
1151						0.41	100	1.0	17.09	
1156	18.36	41.50	4.54	4.82	165.30	0.49	150	1.75	17.12	Purge rate increased
1201	18.23	40.70	4.44	4.80	141.60	0.55	150	2.5	17.12	
1206	18.82	40.60	4.43	4.79	129.70	0.69	150	3.25	17.12	
1211	~~18.82~~ 203					0.42	150	4.0	17.12	
1216	18.88	40.60	4.28	4.78	115.20	0.34	150	4.75	17.12	
							Sampled	at	1227	
							Total Depth: 27.95			
Stabilizing Criteria[4, 5]		+/- 5%	0.2 mg/L or 10% whichever is greater [9]	+/- 0.1 unit		<5 NTUs	>100 mL < 500 mL	>3L	<0.33 ft	

(1) - Maximum purge rate of 250 mL/min

(2) - Sample rate to be between 100 mL/min and 250 mL/min

(3) - Collect sample from pump discharge without tubing contacting sample container

(4) - Field parameter measurements to be recorded every 3 to 5 minutes.

(5) - Stabilization criteria based on three most recent consecutive measurements.

(6) - Monitor depth to water every 3 to 5 minutes. Well drawdown to be 0.33 ft or less. Purge/sampling rate to be lowered as necessary to keep drawdown below 0.33 ft.

(7) - Contact field team lead if drawdown > 0.33 ft - do not switch to 3 well volume method until instructed

(8) - Preserve all samples as appropriate immediately following collection

(9) - DO 0.2 mg/L or 10% whichever is greater (no criteria apply if DO < 0.5 mg/L)

Purge Log QA/QC'd By:
Date:

Purge Log QA/QC'd By:
Date:

Product Name: Low-Flow System

Date: 2018-01-10 15:11:14

Project Information:		Pump Information:	
Operator Name	Markevious Thomas	Pump Model/Type	Alexis Peristaltic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC - Plant McIntosh	Tubing Diameter	.17 in
Site Name	LF 4	Tubing Length	40 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	440275		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	33.5 ft

Well Information:		Pumping Information:	
Well ID	GWA-3	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	38.52 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	73 in
Depth to Water	20.52 ft	Total Volume Pumped	11.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 100
Last 5	14:00:56	2999.95	19.03	4.94	31.50	1.18	25.63	5.63	122.17
Last 5	14:05:56	3299.95	19.16	4.90	31.40	1.44	25.44	5.46	123.35
Last 5	14:10:56	3599.95	19.34	4.92	31.47	1.56	25.44	5.28	121.88
Last 5	14:15:56	3899.95	19.37	4.92	31.60	1.62	25.44	5.16	121.11
Last 5	14:20:56	4199.95	19.28	4.93	31.66	1.53	25.44	5.08	120.24
Variance 0			0.18	0.01	0.07			-0.18	-1.47
Variance 1			0.03	0.00	0.13			-0.12	-0.77
Variance 2			-0.09	0.01	0.06			-0.08	-0.87

Notes

1310 begin purge at 250mL/min; 1340 reduce purge rate to 100mL/min; 1420 all parameters stable. 1425 sampled at 100mL/min

Grab Samples

GWA-3-20180110-01

Sampled at 1425

Product Name: Low-Flow System

Date: 2018-01-10 14:02:54

Project Information:		Pump Information:	
Operator Name	H. Beaugh	Pump Model/Type	ALEXIS Peristalic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC-McIntosh	Tubing Diameter	0.17 in
Site Name	LF 4	Tubing Length	44 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020 WE	Pump placement from TOC	34 ft

Well Information:		Pumping Information:	
Well ID	GWA-4	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2863906 L
Well Total Depth	39.00 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	4.8 in
Depth to Water	25.59 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	13:33:20	600.04	19.58	5.04	54.63	1.86	26.01	0.26	103.23
Last 5	13:38:20	900.03	19.59	5.04	52.14	1.29	26.00	0.27	100.94
Last 5	13:43:20	1200.04	19.68	5.04	50.79	0.94	26.00	0.28	99.53
Last 5	13:48:20	1500.03	19.68	5.04	49.60	1.26	26.00	0.31	98.39
Last 5	13:53:20	1800.03	19.72	5.05	48.42	0.51	25.99	0.34	97.15
Variance 0			0.09	-0.00	-1.35			0.01	-1.41
Variance 1			0.00	0.00	-1.19			0.02	-1.14
Variance 2			0.04	0.01	-1.19			0.03	-1.24

Notes

GWA-4 sampled at 1358. Purge rate: 200 mL/min. Purge time: 1323 to 1353

Grab Samples

GWA-4-20180110-01

Sample time: 1358

Product Name: Low-Flow System

Date: 2018-01-10 14:59:18

Project Information:		Pump Information:	
Operator Name	A. Ellis	Pump Model/Type	Alexis Peristaltic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC - Plant McIntosh	Tubing Diameter	0.17 in
Site Name	LF4	Tubing Length	40 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	463072		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	36 ft

Well Information:		Pumping Information:	
Well ID	GWA-5	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	41.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1.2 in
Depth to Water	24.30 ft	Total Volume Pumped	3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	14:34:11	600.02	18.56	5.58	41.71	0.81	24.40	6.30	103.50
Last 5	14:39:11	900.02	18.78	5.58	41.05	0.67	24.40	6.36	103.18
Last 5	14:44:11	1200.02	18.79	5.56	40.19	0.56	24.40	6.23	104.22
Last 5	14:49:11	1500.04	18.74	5.59	41.70	0.28	24.40	6.18	104.77
Last 5	14:54:11	1799.98	18.74	5.59	41.16	0.41	24.40	6.14	104.95
Variance 0			0.01	-0.02	-0.87			-0.13	1.04
Variance 1			-0.05	0.02	1.51			-0.05	0.55
Variance 2			0.00	0.00	-0.54			-0.04	0.18

Notes

Purge time 1424/1454; sampled at 1454

Grab Samples

GWA-5-20180110-01

1454

Product Name: Low-Flow System

Date: 2018-01-12 10:49:34

Project Information:		Pump Information:	
Operator Name	A. Ellis	Pump Model/Type	Alexis Peristaltic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC - Plant McIntosh	Tubing Diameter	0.17 in
Site Name	LF4	Tubing Length	40 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	463072		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	35 ft

Well Information:		Pumping Information:	
Well ID	GWC-9	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	38.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.96 in
Depth to Water	28.72 ft	Total Volume Pumped	20 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:23:40	1200.03	20.69	4.82	47.01	--	--	6.50	42.71
Last 5	10:28:40	1500.03	20.75	4.83	46.89	--	--	6.46	42.10
Last 5	10:33:40	1800.03	20.92	4.82	46.69	0.57	28.80	6.47	42.71
Last 5	10:38:40	2099.99	20.97	4.83	46.87	--	--	6.52	42.33
Last 5	10:43:40	2399.99	21.05	4.83	46.83	0.62	28.80	6.48	42.76
Variance 0			0.18	-0.00	-0.19			0.01	0.60
Variance 1			0.05	0.00	0.18			0.05	-0.38
Variance 2			0.08	0.01	-0.04			-0.04	0.43

Notes

Purge time 1004/1044 @ 500 mL/m. Sampled @150 mL/m

Grab Samples

GWC-9-20180112-01

1044

Product Name: Low-Flow System

Date: 2018-01-11 13:58:32

Project Information:		Pump Information:	
Operator Name	H. Beaugh	Pump Model/Type	ALEXIS Peristalic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC-McIntosh	Tubing Diameter	0.17 in
Site Name	LF 4	Tubing Length	38 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020 WE	Pump placement from TOC	28 ft

Well Information:		Pumping Information:	
Well ID	GWC-10	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2596101 L
Well Total Depth	33.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.36 in
Depth to Water	24.42 ft	Total Volume Pumped	21 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	13:27:42	2400.03	21.04	6.38	173.08	0.44	24.51	5.16	101.43
Last 5	13:32:43	2701.02	21.38	6.41	181.35	0.69	24.46	4.78	101.37
Last 5	13:37:43	3001.02	21.30	6.38	169.69	0.58	24.46	4.83	101.35
Last 5	13:42:43	3301.02	21.27	6.34	162.44	0.60	24.45	4.96	101.42
Last 5	13:47:43	3601.02	21.06	6.32	162.45	0.48	24.45	4.94	101.52
Variance 0			-0.07	-0.03	-11.66			0.05	-0.02
Variance 1			-0.03	-0.04	-7.25			0.13	0.07
Variance 2			-0.21	-0.02	0.00			-0.02	0.11

Notes

GWC-10 sampled at 1354. Purge rate: 200 mL/min, then increased to 500 mL/min at 1302 for well volume purge method, then decreased to 200 mL/min at 1332. Purge time: 1247 to 1347.

Grab Samples

GWC-10-20180111-01

Sample time: 1354

Product Name: Low-Flow System

Date: 2018-01-11 15:12:37

Project Information:		Pump Information:	
Operator Name	A. Ellis	Pump Model/Type	QED Bladder
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC - Plant McIntosh	Tubing Diameter	0.17 in
Site Name	LF4	Tubing Length	50 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	463072		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	43 ft

Well Information:		Pumping Information:	
Well ID	GWC-11	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3131711 L
Well Total Depth	43.5 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	33.0 ft	Total Volume Pumped	27 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	14:45:30	2099.96	19.97	6.26	96.96	--	--	3.19	96.57
Last 5	14:50:30	2399.95	19.95	6.19	93.06	--	--	3.29	98.88
Last 5	15:00:30	2999.95	19.95	6.13	88.38	0.71	33.10	3.48	98.48
Last 5	15:05:30	3299.95	19.86	6.13	89.25	0.45	33.00	3.47	97.73
Last 5	15:10:30	3599.95	19.84	6.15	92.33	0.24	33.00	3.24	97.66
Variance 0			-0.01	-0.06	-4.68			0.19	-0.40
Variance 1			-0.09	0.01	0.88			-0.01	-0.75
Variance 2			-0.01	0.01	3.07			-0.23	-0.07

Notes

Purge time 1410/1510

Grab Samples

GWC-11-20180111-01

1510

Product Name: Low-Flow System

Date: 2018-01-11 12:10:45

Project Information:		Pump Information:	
Operator Name	H. Beaugh	Pump Model/Type	ALEXIS Peristalic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC-McIntosh	Tubing Diameter	0.17 in
Site Name	LF 4	Tubing Length	46 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020 WE	Pump placement from TOC	36 ft

Well Information:		Pumping Information:	
Well ID	GWC-12	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2953174 L
Well Total Depth	41.30 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2.76 in
Depth to Water	26.82 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	11:37:24	300.04	21.30	5.10	26.13	0.46	27.05	5.51	85.09
Last 5	11:42:24	600.11	21.11	5.12	26.52	0.60	27.05	5.50	84.23
Last 5	11:47:24	900.06	21.20	5.12	26.73	0.57	27.05	5.40	84.29
Last 5	11:52:24	1200.04	21.33	5.12	27.25	0.57	27.05	5.32	85.16
Last 5	11:57:24	1500.03	21.45	5.13	27.29	0.52	27.05	5.28	85.47
Variance 0			0.08	-0.00	0.20			-0.10	0.05
Variance 1			0.13	-0.00	0.52			-0.08	0.87
Variance 2			0.12	0.01	0.05			-0.05	0.32

Notes

GWC-12 sampled at 1204. Purge rate: 200 mL/min. Purge time: 1132 to 1157

Grab Samples

GWC-12-20180111-01

Sample time: 1204

DUP-2-20180111-01

Duplicate

Product Name: Low-Flow System

Date: 2018-01-10 15:08:10

Project Information:		Pump Information:	
Operator Name	H. Beaugh	Pump Model/Type	ALEXIS Peristalic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC-McIntosh	Tubing Diameter	0.17 in
Site Name	LF 4	Tubing Length	45 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020 WE	Pump placement from TOC	35 ft

Well Information:		Pumping Information:	
Well ID	GWA-13	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.290854 L
Well Total Depth	40.11 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.36 in
Depth to Water	24.34 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	14:37:47	300.05	20.22	5.00	22.68	3.43	24.38	6.52	86.51
Last 5	14:42:47	600.04	20.43	4.97	23.37	2.94	24.37	6.29	87.64
Last 5	14:47:47	900.04	20.57	4.93	24.31	1.01	24.37	6.10	88.79
Last 5	14:52:47	1200.04	20.52	4.91	24.85	0.96	24.37	6.01	88.81
Last 5	14:57:47	1500.03	20.57	4.90	25.14	0.73	24.37	5.91	90.13
Variance 0			0.14	-0.04	0.93			-0.19	1.15
Variance 1			-0.05	-0.01	0.54			-0.09	0.03
Variance 2			0.05	-0.01	0.29			-0.10	1.31

Notes

GWA-13 sampled at 1504. Purge rate: 200 mL/min. Purge time: 1432 to 1457.

Grab Samples

GWA-13-20180110-01

Sample time: 1504

Product Name: Low-Flow System

Date: 2018-01-11 09:11:55

Project Information:		Pump Information:	
Operator Name	A. Ellis	Pump Model/Type	Alexis Peristaltic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC - Plant McIntosh	Tubing Diameter	0.17 in
Site Name	LF4	Tubing Length	50 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	463072		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	45 ft

Well Information:		Pumping Information:	
Well ID	GWA-14	Final Pumping Rate	0 mL/min
Well diameter	2 in	Total System Volume	0.3131711 L
Well Total Depth	49.90 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	24.65 ft	Total Volume Pumped	0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10
Last 5	08:43:39	599.71	18.75	6.28	26.79	8.20	25.10	6.96	81.78
Last 5	08:53:39	1199.71	19.01	5.20	25.39	9.51	25.15	6.71	82.65
Last 5	08:58:39	1499.71	18.88	5.21	25.24	7.86	25.15	6.64	77.88
Last 5	09:03:39	1799.71	18.82	5.21	24.94	4.88	25.15	6.90	76.94
Last 5	09:08:39	2099.71	18.83	5.15	25.17	--	--	6.85	81.44
Variance 0			-0.14	0.01	-0.15			-0.07	-4.77
Variance 1			-0.06	-0.01	-0.30			0.26	-0.94
Variance 2			0.02	-0.06	0.23			-0.05	4.50

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2018-01-11 09:30:35

Project Information:		Pump Information:	
Operator Name	A. Ellis	Pump Model/Type	Alexis Peristaltic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC - Plant McIntosh	Tubing Diameter	0.17 in
Site Name	LF4	Tubing Length	50 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	463072		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	45 ft

Well Information:		Pumping Information:	
Well ID	GWA-14	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.3131711 L
Well Total Depth	49.90 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	6 in
Depth to Water	24.65 ft	Total Volume Pumped	5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:18:36	300.02	19.08	5.14	25.34	2.68	25.15	6.57	84.42
Last 5	09:23:36	600.02	19.25	5.22	25.28	3.12	25.15	6.88	81.46
Last 5	09:28:36	900.03	19.32	5.19	25.36	2.89	25.15	6.75	84.57
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.17	0.09	-0.07			0.31	-2.95
Variance 2			0.07	-0.03	0.08			-0.12	3.11

Notes

Purge time 0832/0928

Grab Samples

GWA-14-20180111-01

0928

Product Name: Low-Flow System

Date: 2018-01-11 09:30:48

Project Information:		Pump Information:	
Operator Name	H. Beaugh	Pump Model/Type	ALEXIS Peristalic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC-McIntosh	Tubing Diameter	0.17 in
Site Name	LF 4	Tubing Length	45 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020 WE	Pump placement from TOC	35 ft

Well Information:		Pumping Information:	
Well ID	GWA-15	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.290854 L
Well Total Depth	40.30 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.6 in
Depth to Water	20.67 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	09:01:15	300.12	20.39	5.06	28.02	12.60	20.97	6.74	60.51
Last 5	09:06:14	600.03	20.56	4.98	27.30	7.16	20.98	6.63	61.07
Last 5	09:11:14	900.03	20.66	4.99	26.86	2.74	20.97	6.58	61.48
Last 5	09:16:14	1200.03	20.62	5.01	26.78	1.74	20.97	6.51	62.66
Last 5	09:21:14	1500.03	20.83	5.01	26.68	1.15	20.97	6.47	64.43
Variance 0			0.10	0.02	-0.44			-0.05	0.40
Variance 1			-0.05	0.01	-0.08			-0.07	1.18
Variance 2			0.21	0.01	-0.10			-0.04	1.77

Notes

GWA-15 sampled at 0926. Purge rate: 200 mL/min. Purge time: 0856 to 0921

Grab Samples

GWA-15-20180111-01

Sample time: 0926

Product Name: Low-Flow System

Date: 2018-01-11 11:22:56

Project Information:		Pump Information:	
Operator Name	A. Ellis	Pump Model/Type	Alexis Peristaltic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC - Plant McIntosh	Tubing Diameter	0.17 in
Site Name	LF4	Tubing Length	40 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	463072		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	35 ft

Well Information:		Pumping Information:	
Well ID	GWA-16	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	40.27 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	14.64 in
Depth to Water	23.36 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:57:35	1500.03	20.42	4.97	21.87	9.31	24.58	7.48	99.84
Last 5	11:02:35	1800.03	20.57	4.97	21.80	6.20	24.58	7.46	100.92
Last 5	11:07:35	2099.99	20.59	4.97	21.72	3.72	24.58	7.45	102.34
Last 5	11:12:35	2399.99	20.61	4.98	21.75	2.26	24.58	7.42	103.21
Last 5	11:17:35	2699.99	20.93	4.97	21.76	2.53	24.58	7.37	104.53
Variance 0			0.02	-0.00	-0.07			-0.02	1.42
Variance 1			0.02	0.01	0.03			-0.02	0.86
Variance 2			0.31	-0.00	0.01			-0.05	1.32

Notes

Purge time1032/1112

Grab Samples

GWA-16-20180111-01

1112

Product Name: Low-Flow System

Date: 2018-01-11 10:45:34

Project Information:		Pump Information:	
Operator Name	H. Beaugh	Pump Model/Type	ALEXIS Peristalic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC-McIntosh	Tubing Diameter	0.17 in
Site Name	LF 4	Tubing Length	45 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020 WE	Pump placement from TOC	35 ft

Well Information:		Pumping Information:	
Well ID	GWC-17	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.290854 L
Well Total Depth	40.05 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	4.08 in
Depth to Water	26.65 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	10:15:05	300.04	20.66	5.30	35.37	1.02	26.99	5.19	75.73
Last 5	10:20:05	600.04	20.52	5.29	34.66	1.03	26.99	5.27	75.90
Last 5	10:25:05	900.03	20.56	5.30	34.55	0.56	27.00	5.27	76.07
Last 5	10:30:05	1200.03	20.58	5.27	34.70	0.44	27.00	5.22	78.80
Last 5	10:35:05	1500.03	20.68	5.28	34.89	0.52	26.99	5.17	78.79
Variance 0			0.04	0.01	-0.11			0.00	0.18
Variance 1			0.01	-0.03	0.15			-0.06	2.73
Variance 2			0.10	0.01	0.19			-0.05	-0.01

Notes

GWC-17 sampled at 1041. Purge rate: 200 mL/min. Purge time: 1010 to 1035

Grab Samples

GWC-17-20180111-01

Sample time: 1041

Product Name: Low-Flow System

Date: 2018-01-12 12:12:55

Project Information:		Pump Information:	
Operator Name	H. Beaugh	Pump Model/Type	ALEXIS Peristalic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC-McIntosh	Tubing Diameter	0.17 in
Site Name	LF 4	Tubing Length	48 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020 WE	Pump placement from TOC	38 ft

Well Information:		Pumping Information:	
Well ID	GWC-18	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3042443 L
Well Total Depth	42.2 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	12.96 in
Depth to Water	35.43 ft	Total Volume Pumped	13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	11:36:25	1200.05	19.64	6.37	121.11	--	--	3.01	97.38
Last 5	11:41:25	1500.05	19.59	6.40	124.15	4.55	36.50	3.31	98.47
Last 5	11:46:25	1800.04	19.59	6.44	126.76	4.41	36.51	3.13	97.57
Last 5	11:51:25	2100.04	19.58	6.45	129.25	3.86	36.51	3.10	98.17
Last 5	11:56:25	2400.04	19.55	6.47	130.40	3.35	36.51	3.21	97.89
Variance 0			0.00	0.04	2.61			-0.18	-0.90
Variance 1			-0.01	0.01	2.49			-0.02	0.60
Variance 2			-0.03	0.01	1.15			0.11	-0.28

Notes

GWC-18 sampled at 1202. Purge rate: 500 mL/min, then 200 mL/min at 1146. Purge time: 1116 to 1156.

Grab Samples

GWC-18-20180112-01

Sample time: 1202

Product Name: Low-Flow System

Date: 2018-01-12 10:40:24

Project Information:		Pump Information:	
Operator Name	H. Beaugh	Pump Model/Type	ALEXIS Peristalic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC-McIntosh	Tubing Diameter	0.17 in
Site Name	LF 4	Tubing Length	35 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020 WE	Pump placement from TOC	25 ft

Well Information:		Pumping Information:	
Well ID	GWC-20	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2462198 L
Well Total Depth	30.13 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.48 in
Depth to Water	22.92 ft	Total Volume Pumped	14 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	10:10:02	1200.04	20.53	4.94	52.50	1.12	23.06	4.86	87.44
Last 5	10:15:02	1500.04	20.38	4.97	52.32	0.65	22.97	4.73	88.08
Last 5	10:20:02	1800.04	20.30	4.98	52.46	0.56	22.97	4.70	89.22
Last 5	10:25:02	2100.03	20.32	4.98	52.26	0.43	22.97	4.69	90.70
Last 5	10:30:02	2400.03	20.39	4.97	52.20	0.30	22.96	4.68	92.16
Variance 0			-0.07	0.01	0.15			-0.03	1.15
Variance 1			0.01	-0.00	-0.20			-0.02	1.47
Variance 2			0.08	-0.00	-0.06			-0.01	1.47

Notes

GWC-20 sampled at 1036. Purge rate: 500 mL/min, then 200 mL/min at 1015. Purge time: 0955 to 1030.

Grab Samples

GWC-20-20180121-01

Sample time: 1036

Product Name: Low-Flow System

Date: 2018-01-11 15:16:56

Project Information:		Pump Information:	
Operator Name	H. Beaugh	Pump Model/Type	ALEXIS Peristalic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC-McIntosh	Tubing Diameter	0.17 in
Site Name	LF 4	Tubing Length	32 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020 WE	Pump placement from TOC	22 ft

Well Information:		Pumping Information:	
Well ID	GWC-21	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2328295 L
Well Total Depth	27.16 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2.4 in
Depth to Water	20.82 ft	Total Volume Pumped	13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	14:47:18	900.05	21.11	4.98	40.55	6.68	22.39	5.70	105.72
Last 5	14:52:18	1200.05	21.04	4.98	40.27	7.31	22.46	5.67	106.24
Last 5	14:57:18	1500.04	20.90	4.98	40.73	3.99	21.81	5.45	107.42
Last 5	15:02:18	1800.04	20.81	4.98	40.38	3.62	21.67	5.43	107.80
Last 5	15:07:18	2100.04	20.75	4.98	40.07	2.15	21.62	5.39	108.08
Variance 0			-0.14	-0.00	0.47			-0.22	1.19
Variance 1			-0.10	-0.00	-0.35			-0.03	0.38
Variance 2			-0.06	0.00	-0.31			-0.03	0.27

Notes

GWC-21 sampled at 1514. Purge rate: 500 mL/min, then 200 mL/min at 1457. Purge time: 1432 to 1507

Grab Samples

GWC-21-20180111-01

Sample time: 1514

Product Name: Low-Flow System

Date: 2018-01-12 13:48:21

Project Information:		Pump Information:	
Operator Name	H. Beaugh	Pump Model/Type	ALEXIS Peristalic
Company Name	ERM	Tubing Type	LDPE
Project Name	GPC-McIntosh	Tubing Diameter	0.17 in
Site Name	LF 4	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte 2020 WE	Pump placement from TOC	30 ft

Well Information:		Pumping Information:	
Well ID	GWC-23	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	33.7 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	22.68 in
Depth to Water	28.46 ft	Total Volume Pumped	10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10
Last 5	13:22:37	1800.08	20.31	5.40	43.78	--	--	3.55	105.52
Last 5	13:27:37	2100.08	20.26	5.34	42.77	2.54	30.21	3.64	105.31
Last 5	13:32:37	2400.07	20.21	5.35	42.28	1.57	30.21	3.70	103.81
Last 5	13:37:37	2700.07	20.08	5.36	42.05	1.75	30.31	3.75	103.44
Last 5	13:42:37	3000.07	20.03	5.35	41.79	1.44	30.35	3.80	103.86
Variance 0			-0.05	0.01	-0.49			0.07	-1.51
Variance 1			-0.13	0.01	-0.23			0.05	-0.37
Variance 2			-0.05	-0.01	-0.26			0.05	0.42

Notes

GWC-23 sampled at 1350. Purge rate: 200 mL/min. Purge time: 1252 to 1342

Grab Samples

GWC-23-20180112-01

Sample time: 1350

Water Level Measurement Data Sheet
Plant McIntosh
Georgia Power Company
Landfill No. 4
Date measured: 7/9/2018
Measured by: P. Adams, L. Coker, J. Noles

					Provided for reference	
Area	**Well ID**	**Total Installed Depth (ft btoc)**	**Measured Depth to Water (ft btoc)**	**Measured Depth to Bottom (ft btoc)**	**January 2018 Depth to Water (ft btoc)**	**January 2018 Depth to Bottom (ft btoc)**
Landfill No. 4	GWC-1	28.50	15.38	27.69	15.21	27.59
	GWA-2	28.50	17.17	27.99	16.89	27.95
	GWA-3	38.50	21.44	37.51	20.55	37.95
	GWC-4A (GWB-4A)	39.00	25.71	39.00	25.42	38.99
	GWC-5 (GWB-5)	41.50	24.51	40.89	24.17	41.50
	GWC-9	38.50	29.12	37.61	28.66	38.50
	GWC-10	33.50	24.87	32.39	24.36	32.32
	GWC-11	43.50	33.44	42.30	32.89	43.50
	GWC-12	18.76	27.15	41.35	26.72	41.30
	GWA-13	40.11	25.11	40.11	24.22	40.09
	GWA-14	49.90	25.79	50.15	24.50	49.90
	GWC-15 (GWB-15)	40.30	21.91	40.06	20.51	40.03
	GWA-16 (GWB-16)	40.27	24.15	40.02	23.24	40.25
	GWC-17	40.05	27.20	40.10	26.51	40.06
	GWC-18	42.20	35.65	42.51	35.38	42.46
	GWC-19	36.95	29.66	37.50	29.49	32.75
	GWC-20	30.13	23.06	30.09	22.86	30.07
	GWC-21	27.16	21.03	27.50	20.79	22.47
	GWC-22 (PZ-22)	31.65	27.85	31.60	27.36	31.58
	GWC-23	33.70	28.89	33.76	28.43	NM

Notes:
ft = feet
NM = Not Measured
btoc = below top of casing
January 2018 depths measured by ERM

Product Name: Low-Flow System

Date: 2018-07-12 10:35:17

Project Information:		Pump Information:	
Operator Name	J. Adcock	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	LF4	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	30 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	589976		
Turbidity Make/Model	LaMotte 2020 we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-1	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2239027 L
Well Total Depth	28.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1.56 in
Depth to Water	15.46 ft	Total Volume Pumped	3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	10:13:10	600.03	23.37	5.13	62.23	2.51	15.59	2.35	150.39
Last 5	10:18:10	900.02	23.18	5.07	60.36	2.07	15.59	2.25	144.00
Last 5	10:23:10	1200.01	23.18	5.05	59.59	1.29	15.60	2.19	140.23
Last 5	10:28:10	1500.01	23.21	5.04	58.91	0.96	15.59	2.19	137.66
Last 5	10:33:10	1799.99	23.41	5.04	58.47	0.87	15.59	2.23	136.40
Variance 0			0.00	-0.02	-0.78			-0.05	-3.77
Variance 1			0.02	-0.01	-0.67			0.00	-2.57
Variance 2			0.20	-0.00	-0.44			0.03	-1.27

Notes

Sample at 7/12/2018 1035

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 11:04:05

Project Information:		Pump Information:	
Operator Name	P. Adams	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	0.17 in
Site Name	McIntosh	Tubing Length	30 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWA-2	Final Pumping Rate	130 mL/min
Well diameter	2 in	Total System Volume	0.2239027 L
Well Total Depth	27.99 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	4.2 in
Depth to Water	17.7 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	10:42:09	600.03	23.38	4.78	39.18	1.67	17.25	3.91	67.86
Last 5	10:47:09	900.01	22.68	4.78	39.13	2.17	17.28	3.94	68.17
Last 5	10:52:09	1200.01	22.61	4.76	39.33	2.34	17.30	3.99	68.93
Last 5	10:57:09	1500.00	22.76	4.76	38.95	2.07	17.32	4.03	69.30
Last 5	11:02:09	1799.99	22.62	4.75	38.95	1.68	17.35	4.05	70.56
Variance 0			-0.07	-0.02	0.20			0.05	0.76
Variance 1			0.14	0.00	-0.38			0.04	0.37
Variance 2			-0.13	-0.01	0.00			0.02	1.26

Notes

Sampled at 11:20

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 11:23:28

Project Information:		Pump Information:	
Operator Name	L. Coker	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	33 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWA-3	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.237293 L
Well Total Depth	37.51 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	33.12 in
Depth to Water	21.44 ft	Total Volume Pumped	4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	11:01:15	1799.99	24.86	4.88	31.72	0.75	23.70	5.77	228.26
Last 5	11:06:15	2099.99	24.60	4.88	31.92	0.66	23.85	5.73	228.40
Last 5	11:11:15	2399.98	25.05	4.88	31.80	2.56	24.10	5.69	230.17
Last 5	11:16:15	2700.00	25.23	4.87	31.66	1.32	24.20	5.63	231.59
Last 5	11:21:15	2999.99	25.19	4.87	31.44	0.98	24.33	5.73	233.65
Variance 0			0.45	-0.01	-0.12			-0.03	1.77
Variance 1			0.18	-0.00	-0.14			-0.06	1.42
Variance 2			-0.05	0.00	-0.23			0.09	2.06

Notes

Sampled at 11:27

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 11:01:14

Project Information:		Pump Information:	
Operator Name	J. Adcock	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	LF4	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	33 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	589976		
Turbidity Make/Model	LaMotte 2020 we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-4A	Final Pumping Rate	102.5 mL/min
Well diameter	2 in	Total System Volume	0.237293 L
Well Total Depth	35.00 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1.08 in
Depth to Water	25.65 ft	Total Volume Pumped	4.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	10:39:17	1200.01	26.22	4.55	69.11	1.91	25.85	1.94	137.71
Last 5	10:44:17	1500.01	26.00	4.54	69.40	1.22	25.86	1.67	139.12
Last 5	10:49:17	1799.99	26.11	4.55	69.07	0.99	25.86	1.55	140.10
Last 5	10:54:17	2099.99	25.78	4.54	67.73	1.12	25.89	1.48	141.56
Last 5	10:59:19	2401.98	25.53	4.53	67.37	0.96	25.91	1.43	142.33
Variance 0			0.11	0.01	-0.33			-0.11	0.98
Variance 1			-0.33	-0.01	-1.34			-0.07	1.46
Variance 2			-0.25	-0.01	-0.36			-0.05	0.78

Notes

Sample 7/11/2018 1100

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 12:27:58

Project Information:		Pump Information:	
Operator Name	J. Adcock	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	LF4	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	589976		
Turbidity Make/Model	LaMotte 2020 we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-5	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	41.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1.68 in
Depth to Water	24.45 ft	Total Volume Pumped	3.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	12:03:52	1200.01	25.74	5.53	40.48	0.30	24.56	6.27	152.53
Last 5	12:08:52	1499.99	25.90	5.51	40.05	0.37	24.58	5.95	152.57
Last 5	12:13:52	1800.00	25.99	5.51	39.73	0.51	24.59	6.10	152.17
Last 5	12:18:52	2100.00	25.88	5.47	37.88	0.51	24.59	6.35	152.34
Last 5	12:23:52	2399.98	26.13	5.49	38.24	0.57	24.59	6.21	152.12
Variance 0			0.09	-0.01	-0.32			0.15	-0.41
Variance 1			-0.11	-0.04	-1.85			0.24	0.17
Variance 2			0.25	0.02	0.37			-0.14	-0.21

Notes

Sample at 7/11/2018 1229

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-12 09:19:06

Project Information:		Pump Information:	
Operator Name	L. Coker	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	33 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2.5 ft

Well Information:		Pumping Information:	
Well ID	GWC-9	Final Pumping Rate	110 mL/min
Well diameter	2 in	Total System Volume	0.237293 L
Well Total Depth	37.61 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.84 in
Depth to Water	29.15 ft	Total Volume Pumped	3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	08:56:57	600.03	24.12	4.78	47.53	2.07	29.20	6.16	227.21
Last 5	09:01:57	900.02	24.10	4.78	46.91	0.88	29.20	6.25	245.16
Last 5	09:06:57	1200.01	24.06	4.80	46.44	0.39	29.21	6.41	238.42
Last 5	09:11:57	1500.00	24.17	4.79	46.34	0.55	29.21	6.48	247.99
Last 5	09:16:57	1799.99	23.65	4.80	46.20	0.54	29.22	6.54	256.35
Variance 0			-0.04	0.02	-0.48			0.17	-6.73
Variance 1			0.11	-0.01	-0.10			0.07	9.57
Variance 2			-0.52	0.01	-0.14			0.06	8.35

Notes

Sampled at 09:25, DUP-04 taken here at 09:40

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-12 10:37:35

Project Information:		Pump Information:	
Operator Name	P. Adams	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	0.17 in
Site Name	McIntosh	Tubing Length	32 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-10	Final Pumping Rate	130 mL/min
Well diameter	2 in	Total System Volume	0.2328295 L
Well Total Depth	33 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1 in
Depth to Water	24.9 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	10:15:06	600.02	22.94	6.79	298.11	1.17	24.96	1.73	59.71
Last 5	10:20:06	900.01	22.89	6.75	288.13	1.32	24.96	1.89	59.42
Last 5	10:25:06	1200.00	22.80	6.71	282.48	1.68	24.96	1.88	59.45
Last 5	10:30:06	1499.99	22.85	6.71	282.12	0.61	24.96	1.98	59.62
Last 5	10:35:06	1799.99	23.05	6.70	276.77	0.83	24.96	2.20	59.68
Variance 0			-0.09	-0.04	-5.65			-0.01	0.04
Variance 1			0.05	-0.00	-0.35			0.10	0.17
Variance 2			0.20	-0.01	-5.36			0.23	0.06

Notes

Sampled at 10:45

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-12 09:29:26

Project Information:		Pump Information:	
Operator Name	P. Adams	Pump Model/Type	QED Bladder
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	0.17 in
Site Name	McIntosh	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-11	Final Pumping Rate	170 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	43 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	33.45 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	09:07:38	600.02	21.67	6.91	167.47	5.54	33.45	1.63	49.92
Last 5	09:12:38	900.01	21.59	6.66	143.21	2.56	33.45	2.06	50.77
Last 5	09:17:38	1200.00	21.59	6.64	143.56	2.06	33.45	2.01	51.59
Last 5	09:22:38	1500.00	21.56	6.63	142.82	1.38	33.45	1.97	52.02
Last 5	09:27:38	1799.99	21.51	6.63	142.67	1.66	33.45	1.89	52.35
Variance 0			0.00	-0.02	0.36			-0.05	0.82
Variance 1			-0.03	-0.01	-0.74			-0.04	0.43
Variance 2			-0.05	-0.00	-0.15			-0.08	0.33

Notes

Sampled at 9:40

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-12 09:24:06

Project Information:		Pump Information:	
Operator Name	J. Adcock	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	LF4	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	589976		
Turbidity Make/Model	LaMotte 2020 we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-12	Final Pumping Rate	106.7 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	41.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1.8 in
Depth to Water	27.17 ft	Total Volume Pumped	3.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	09:00:58	600.02	22.98	5.09	24.99	0.53	27.30	5.98	148.18
Last 5	09:05:58	900.02	22.65	5.10	24.59	0.29	27.32	6.19	145.04
Last 5	09:10:58	1200.01	22.47	5.10	24.51	0.58	27.32	6.21	143.15
Last 5	09:15:58	1500.00	22.51	5.10	24.82	0.42	27.32	6.32	142.99
Last 5	09:20:58	1800.00	22.52	5.09	25.23	0.38	27.32	6.28	141.12
Variance 0			-0.18	0.00	-0.08			0.02	-1.88
Variance 1			0.04	0.00	0.30			0.11	-0.17
Variance 2			0.00	-0.01	0.41			-0.04	-1.86

Notes

Sample at 7/12/2018 0922

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 12:26:49

Project Information:		Pump Information:	
Operator Name	P. Adams	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	0.17 in
Site Name	McIntosh	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWA-13	Final Pumping Rate	120 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	40.11 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.24 in
Depth to Water	25.11 ft	Total Volume Pumped	3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	11:59:07	300.09	24.96	5.09	20.08	1.48	25.11	7.06	67.69
Last 5	12:04:07	600.02	24.05	5.10	20.20	2.23	25.12	7.10	68.75
Last 5	12:09:06	900.01	24.62	5.05	20.93	2.47	25.13	6.93	69.36
Last 5	12:14:06	1200.00	24.68	5.06	20.71	2.68	25.13	6.97	70.39
Last 5	12:19:06	1499.99	24.99	5.02	21.35	2.33	25.13	6.82	71.51
Variance 0			0.57	-0.05	0.73			-0.17	0.61
Variance 1			0.07	0.01	-0.22			0.04	1.04
Variance 2			0.30	-0.04	0.64			-0.15	1.12

Notes

Sampled at 12:35

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 12:50:27

Project Information:		Pump Information:	
Operator Name	L. Coker	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	45 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWA-14	Final Pumping Rate	140 mL/min
Well diameter	2 in	Total System Volume	0.290854 L
Well Total Depth	50.15 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	5.04 in
Depth to Water	25.79 ft	Total Volume Pumped	3.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	12:28:32	600.02	26.75	5.22	26.35	3.18	26.10	6.42	307.76
Last 5	12:33:32	900.01	26.05	5.22	26.75	1.77	26.15	6.30	303.02
Last 5	12:38:32	1200.01	25.16	5.24	26.57	1.35	26.16	6.35	301.07
Last 5	12:43:32	1500.01	25.23	5.25	26.68	1.43	26.20	6.25	299.50
Last 5	12:48:32	1799.99	24.97	5.25	26.78	1.59	26.21	6.40	305.64
Variance 0			-0.89	0.02	-0.17			0.05	-1.94
Variance 1			0.07	0.02	0.10			-0.11	-1.57
Variance 2			-0.26	-0.01	0.11			0.15	6.14

Notes

Sampled at 12:58

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 13:40:33

Project Information:		Pump Information:	
Operator Name	P. Adams	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	0.17 in
Site Name	McIntosh	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-15	Final Pumping Rate	170 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	40.06 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2 in
Depth to Water	21.91 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	13:18:28	600.02	25.92	5.01	25.62	4.24	22.05	6.95	88.39
Last 5	13:23:28	900.01	25.45	5.01	25.87	3.98	22.05	7.31	90.19
Last 5	13:28:28	1200.01	25.60	5.01	25.80	2.79	22.05	6.98	90.92
Last 5	13:33:28	1500.00	25.40	5.01	25.85	3.57	22.05	7.25	92.41
Last 5	13:38:28	1799.99	25.25	5.01	25.70	3.01	22.05	7.12	93.65
Variance 0			0.15	0.00	-0.07			-0.33	0.73
Variance 1			-0.20	-0.00	0.05			0.27	1.48
Variance 2			-0.14	-0.00	-0.15			-0.13	1.24

Notes

Sampled at 13:55

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 13:47:44

Project Information:		Pump Information:	
Operator Name	J. Adcock	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	LF4	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	589976		
Turbidity Make/Model	LaMotte 2020 we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWA-16	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	40.27 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2.04 in
Depth to Water	24.15 ft	Total Volume Pumped	3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	13:24:28	600.03	27.33	5.09	23.47	2.31	24.34	6.75	191.16
Last 5	13:29:28	900.02	26.85	5.08	23.36	2.38	24.32	6.96	185.12
Last 5	13:34:28	1200.01	26.58	5.08	23.34	1.74	24.32	6.85	179.29
Last 5	13:39:28	1500.00	26.49	5.07	23.11	3.40	24.32	7.02	174.52
Last 5	13:44:28	1800.03	26.59	5.07	23.12	3.15	24.32	7.07	171.32
Variance 0			-0.27	-0.00	-0.02			-0.11	-5.83
Variance 1			-0.09	-0.00	-0.23			0.17	-4.77
Variance 2			0.10	-0.00	0.01			0.06	-3.20

Notes

Sample at 7/11/2018 1346

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 14:25:43

Project Information:		Pump Information:	
Operator Name	L. Coker	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	35 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-17	Final Pumping Rate	110 mL/min
Well diameter	2 in	Total System Volume	0.2462198 L
Well Total Depth	40.10 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3 in
Depth to Water	27.20 ft	Total Volume Pumped	3.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	14:02:11	600.03	27.61	5.29	36.25	0.94	27.35	5.19	510.52
Last 5	14:07:11	900.02	25.73	5.27	35.09	1.19	27.35	5.26	491.94
Last 5	14:12:11	1200.01	24.82	5.26	34.45	1.37	27.40	5.35	468.20
Last 5	14:17:11	1500.01	24.60	5.25	34.06	1.32	27.45	5.45	443.78
Last 5	14:22:11	1800.00	24.59	5.23	33.67	0.36	27.45	5.41	425.64
Variance 0			-0.91	-0.01	-0.64			0.08	-23.74
Variance 1			-0.23	-0.01	-0.40			0.10	-24.42
Variance 2			-0.01	-0.02	-0.38			-0.04	-18.14

Notes

Sampled at 14:35

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 15:10:14

Project Information:		Pump Information:	
Operator Name	P. Adams	Pump Model/Type	QED Bladder
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	0.17 in
Site Name	McIntosh	Tubing Length	40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-18	Final Pumping Rate	170 mL/min
Well diameter	2 in	Total System Volume	0.2685369 L
Well Total Depth	42 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	4 in
Depth to Water	35 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10%
Last 5	14:43:44	600.02	26.04	6.16	94.87	5.55	35.93	3.82	117.12
Last 5	14:53:44	1200.00	24.42	6.17	99.14	4.90	35.95	3.72	116.59
Last 5	14:58:45	1501.00	24.14	6.17	99.56	4.77	35.97	3.61	115.50
Last 5	15:03:45	1800.99	24.08	6.18	100.80	4.55	35.98	3.53	114.72
Last 5	15:08:45	2100.98	24.42	6.18	101.42	4.37	35.99	3.49	113.47
Variance 0			-0.28	0.00	0.43			-0.11	-1.09
Variance 1			-0.05	0.01	1.24			-0.08	-0.79
Variance 2			0.34	0.00	0.61			-0.04	-1.25

Notes

Sampled at 15:20

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 15:11:46

Project Information:		Pump Information:	
Operator Name	J. Adcock	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	LF4	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	38 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	589976		
Turbidity Make/Model	LaMotte 2020 we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-19	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2596101 L
Well Total Depth	36.95 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.96 in
Depth to Water	29.69 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	14:48:24	1200.02	25.86	5.76	108.60	22.90	28.76	2.53	128.55
Last 5	14:53:24	1500.01	26.03	5.64	97.73	12.90	29.76	2.87	141.95
Last 5	14:58:24	1800.00	25.78	5.61	95.28	7.03	29.76	3.24	148.75
Last 5	15:03:24	2100.00	25.12	5.63	96.15	4.74	29.76	3.44	151.32
Last 5	15:08:24	2399.99	25.44	5.60	95.07	4.72	29.77	3.35	153.04
Variance 0			-0.25	-0.04	-2.45			0.37	6.80
Variance 1			-0.66	0.02	0.87			0.20	2.57
Variance 2			0.32	-0.03	-1.08			-0.09	1.72

Notes

Sample at 7/11/2018 1510

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 15:50:26

Project Information:		Pump Information:	
Operator Name	L. Coker	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	27 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2.5 ft

Well Information:		Pumping Information:	
Well ID	GWC-20	Final Pumping Rate	140 mL/min
Well diameter	2 in	Total System Volume	0.2105124 L
Well Total Depth	30.09 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1.68 in
Depth to Water	23.10 ft	Total Volume Pumped	4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	15:23:17	300.03	28.77	4.85	50.95	0.42	23.10	4.60	378.04
Last 5	15:28:17	600.02	26.55	4.86	52.25	0.75	23.10	4.61	403.35
Last 5	15:33:17	900.02	25.69	4.85	52.04	0.49	23.11	4.59	429.98
Last 5	15:43:17	1500.00	24.96	4.88	50.89	0.50	23.12	4.65	464.55
Last 5	15:48:17	1800.00	25.09	4.89	51.22	0.45	23.20	4.62	445.55
Variance 0			-0.86	-0.01	-0.21			-0.02	26.63
Variance 1			-0.73	0.03	-1.15			0.06	34.57
Variance 2			0.13	0.01	0.33			-0.02	-19.00

Notes

Sampled at 16:00

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-11 16:36:17

Project Information:		Pump Information:	
Operator Name	J. Adcock	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	LF4	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	30 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	589976		
Turbidity Make/Model	LaMotte 2020 we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-21	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2239027 L
Well Total Depth	27.16 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	3.12 in
Depth to Water	21.04 ft	Total Volume Pumped	3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	16:14:02	600.03	26.03	4.98	40.71	0.30	21.25	4.83	177.83
Last 5	16:19:02	900.01	25.60	4.97	40.81	0.15	21.29	5.28	176.01
Last 5	16:24:03	1201.02	25.49	4.96	40.75	0.42	21.29	5.25	172.84
Last 5	16:29:03	1501.01	25.54	4.96	40.63	0.29	21.30	5.40	169.15
Last 5	16:34:03	1800.99	25.44	4.96	40.34	0.36	21.30	5.58	165.57
Variance 0			-0.11	-0.01	-0.06			-0.03	-3.17
Variance 1			0.05	-0.01	-0.12			0.14	-3.69
Variance 2			-0.09	-0.00	-0.29			0.19	-3.57

Notes

Sample 7/11/2018 1635

Grab Samples

Product Name: Low-Flow System

Date: 2018-07-12 11:17:55

Project Information:		Pump Information:	
Operator Name	L. Coker	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	.17 in
Site Name	McIntosh	Tubing Length	31 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	588863		
Turbidity Make/Model	LaMotte2020we	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-23	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.2283661 L
Well Total Depth	33.76 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	9.48 in
Depth to Water	28.89 ft	Total Volume Pumped	4.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 0.2	+/- 10%
Last 5	10:56:04	300.09	23.47	5.22	40.94	0.49	29.61	3.80	320.03
Last 5	11:01:04	600.02	24.05	5.21	40.85	0.75	29.63	3.97	313.13
Last 5	11:06:04	900.02	23.74	5.20	40.80	0.41	29.65	3.96	306.42
Last 5	11:11:04	1200.01	23.89	5.20	40.81	0.38	29.66	4.06	300.86
Last 5	11:16:04	1500.00	23.76	5.21	40.48	0.72	29.68	4.14	294.93
Variance 0			-0.31	-0.01	-0.05			-0.01	-6.71
Variance 1			0.15	0.00	0.01			0.09	-5.56
Variance 2			-0.13	0.01	-0.33			0.08	-5.93

Notes

Sampled at 11:20

Grab Samples

Product Name: Low-Flow System

Date: 2018-09-13 09:01:59

Project Information:		Pump Information:	
Operator Name	P Adams	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	.17 in
Site Name	GPC McIntosh	Tubing Length	35 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-9	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2462198 L
Well Total Depth	38 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	29 ft	Total Volume Pumped	0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10%
Last 5	08:39:49	600.04	22.98	4.87	48.23	1.08	29.28	6.81	100.62
Last 5	08:44:49	900.03	22.85	4.86	48.07	0.90	29.29	6.80	105.34
Last 5	08:49:49	1200.03	22.85	4.86	47.61	0.77	29.29	6.85	101.46
Last 5	08:54:49	1500.04	22.89	4.85	47.33	--	--	6.81	101.77
Last 5	08:59:49	1800.03	22.90	4.84	46.97	--	--	6.82	101.97
Variance 0			-0.00	-0.00	-0.46			0.05	-3.88
Variance 1			0.04	-0.01	-0.28			-0.04	0.31
Variance 2			0.01	-0.01	-0.36			0.01	0.20

Notes

Resampling for Chloride because of July exceedance
Sampled at 9:05

Grab Samples

Product Name: Low-Flow System

Date: 2018-09-13 09:59:46

Project Information:		Pump Information:	
Operator Name	P Adams	Pump Model/Type	Alexis Peristaltic
Company Name	GEI	Tubing Type	LDPE
Project Name	McIntosh	Tubing Diameter	.17 in
Site Name	GPC McIntosh	Tubing Length	30 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	597519		
Turbidity Make/Model	LaMotte 2020	Pump placement from TOC	2 ft

Well Information:		Pumping Information:	
Well ID	GWC-20	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.2239027 L
Well Total Depth	30 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	23 ft	Total Volume Pumped	0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10%
Last 5	09:38:30	600.04	23.40	4.95	50.09	1.79	23.30	5.05	96.30
Last 5	09:43:30	900.04	23.34	4.94	49.75	1.23	23.31	5.48	98.01
Last 5	09:48:30	1200.03	23.39	4.93	49.20	1.03	23.31	5.64	99.34
Last 5	09:53:30	1500.04	23.16	4.92	48.98	0.88	23.32	5.70	99.95
Last 5	09:58:30	1800.03	23.38	4.91	48.86	0.74	23.32	5.71	100.67
Variance 0			0.05	-0.01	-0.55			0.16	1.33
Variance 1			-0.23	-0.00	-0.22			0.06	0.61
Variance 2			0.21	-0.01	-0.11			0.01	0.72

Notes

Resample for Chloride because of July exceedance
Sampled at 10:10

Grab Samples

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-148353-1
TestAmerica SDG: McIntosh Ash Disposal Area 4
Client Project/Site: CCR - Plant McIntosh
Sampling Event: Landfill #4 Bi-Monthly

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Cheyenne Whitmire

Authorized for release by:
1/30/2018 9:25:16 AM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

Job ID: 400-148353-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-148353-1

General Chemistry
Method(s) SM 2540C: The sample duplicate precision for the following sample associated with analytical batch 680-509827 was outside control limits: (680-147777-W-1 DU). The associated Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) precision met acceptance criteria.

Detection Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: GWC-20-20180112-01 — Lab Sample ID: 400-148353-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.0		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	0.86	J	1.0	0.70	mg/L	1		300.0	Total/NA
Barium	0.021		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	1.7		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.0014	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	56		5.0	5.0	mg/L	1		2540C-2011	Total/NA

Client Sample ID: GWC-9-20180112-01 — Lab Sample ID: 400-148353-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.0		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.027		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.40		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.00054	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	48		5.0	5.0	mg/L	1		2540C-2011	Total/NA

Client Sample ID: GWC-18-20180112-01 — Lab Sample ID: 400-148353-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.5		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.55		0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	4.5		1.0	0.70	mg/L	1		300.0	Total/NA
Arsenic	0.00095	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.015		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Vanadium	0.0022	J	0.0025	0.0014	mg/L	5		6020	Total Recoverable
Calcium	15		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0020	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Thallium	0.00011	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	110		5.0	5.0	mg/L	1		2540C-2011	Total/NA

Client Sample ID: GWC-23-20180112-01 — Lab Sample ID: 400-148353-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.3		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	1.9		1.0	0.70	mg/L	1		300.0	Total/NA
Nickel	0.0023	J	0.0025	0.0018	mg/L	5		6020	Total Recoverable
Barium	0.037		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	1.4		0.25	0.13	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: GWC-23-20180112-01 (Continued) — Lab Sample ID: 400-148353-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0072		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Thallium	0.00011	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	43		5.0	5.0	mg/L	1		2540C-2011	Total/NA

Client Sample ID: GWC-19-20180112-01 — Lab Sample ID: 400-148353-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.0		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.083	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	1.5		1.0	0.70	mg/L	1		300.0	Total/NA
Nickel	0.0020	J	0.0025	0.0018	mg/L	5		6020	Total Recoverable
Barium	0.014		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	9.5		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0017	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	81		5.0	5.0	mg/L	1		2540C-2011	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6020	Metals (ICP/MS)	SW846	TAL PEN
2540C-2011	Total Dissolved Solids (Dried at 180 °C)	SM	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-148353-1	GWC-20-20180112-01	Water	01/12/18 10:36	01/12/18 16:56
400-148353-2	GWC-9-20180112-01	Water	01/12/18 10:44	01/12/18 16:56
400-148353-3	GWC-18-20180112-01	Water	01/12/18 12:02	01/12/18 16:56
400-148353-4	GWC-23-20180112-01	Water	01/12/18 13:50	01/12/18 16:56
400-148353-5	GWC-19-20180112-01	Water	01/12/18 14:50	01/12/18 16:56

Client Sample ID: GWC-20-20180112-01

Date Collected: 01/12/18 10:36
Date Received: 01/12/18 16:56

Lab Sample ID: 400-148353-1

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.0**		1.0	0.89	mg/L			01/23/18 20:00	1
Fluoride	<0.082		0.20	0.082	mg/L			01/23/18 20:00	1
Sulfate	**0.86**	**J**	1.0	0.70	mg/L			01/23/18 20:00	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/19/18 10:29	01/19/18 17:57	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/19/18 10:29	01/19/18 17:57	5
Boron	<0.021		0.050	0.021	mg/L		01/19/18 10:29	01/19/18 17:57	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/19/18 10:29	01/19/18 17:57	5
Barium	**0.021**		0.0025	0.00049	mg/L		01/19/18 10:29	01/19/18 17:57	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/19/18 10:29	01/19/18 17:57	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 17:57	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/19/18 10:29	01/19/18 17:57	5
Calcium	**1.7**		0.25	0.13	mg/L		01/19/18 10:29	01/19/18 17:57	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/19/18 10:29	01/19/18 17:57	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 17:57	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/19/18 10:29	01/19/18 17:57	5
Cobalt	**0.0014**	**J**	0.0025	0.00040	mg/L		01/19/18 10:29	01/19/18 17:57	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/19/18 10:29	01/19/18 17:57	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/19/18 10:29	01/19/18 17:57	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/19/18 10:29	01/19/18 17:57	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/19/18 10:29	01/19/18 17:57	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**56**		5.0	5.0	mg/L			01/18/18 14:31	1

Client Sample ID: GWC-9-20180112-01

Date Collected: 01/12/18 10:44
Date Received: 01/12/18 16:56

Lab Sample ID: 400-148353-2

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.0**		1.0	0.89	mg/L			01/23/18 20:22	1
Fluoride	<0.082		0.20	0.082	mg/L			01/23/18 20:22	1
Sulfate	<0.70		1.0	0.70	mg/L			01/23/18 20:22	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/19/18 10:29	01/19/18 18:02	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/19/18 10:29	01/19/18 18:02	5
Boron	<0.021		0.050	0.021	mg/L		01/19/18 10:29	01/19/18 18:02	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/19/18 10:29	01/19/18 18:02	5
Barium	**0.027**		0.0025	0.00049	mg/L		01/19/18 10:29	01/19/18 18:02	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/19/18 10:29	01/19/18 18:02	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 18:02	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/19/18 10:29	01/19/18 18:02	5
Calcium	**0.40**		0.25	0.13	mg/L		01/19/18 10:29	01/19/18 18:02	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/19/18 10:29	01/19/18 18:02	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 18:02	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/19/18 10:29	01/19/18 18:02	5
Cobalt	**0.00054**	**J**	0.0025	0.00040	mg/L		01/19/18 10:29	01/19/18 18:02	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/19/18 10:29	01/19/18 18:02	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/19/18 10:29	01/19/18 18:02	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/19/18 10:29	01/19/18 18:02	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/19/18 10:29	01/19/18 18:02	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**48**		5.0	5.0	mg/L			01/18/18 14:31	1

Client Sample ID: GWC-18-20180112-01

Date Collected: 01/12/18 12:02
Date Received: 01/12/18 16:56

Lab Sample ID: 400-148353-3

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.5**		1.0	0.89	mg/L			01/23/18 20:45	1
Fluoride	**0.55**		0.20	0.082	mg/L			01/23/18 20:45	1
Sulfate	**4.5**		1.0	0.70	mg/L			01/23/18 20:45	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00095**	**J**	0.0013	0.00046	mg/L		01/19/18 10:29	01/19/18 18:06	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/19/18 10:29	01/19/18 18:06	5
Boron	<0.021		0.050	0.021	mg/L		01/19/18 10:29	01/19/18 18:06	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/19/18 10:29	01/19/18 18:06	5
Barium	**0.015**		0.0025	0.00049	mg/L		01/19/18 10:29	01/19/18 18:06	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/19/18 10:29	01/19/18 18:06	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 18:06	5
Vanadium	**0.0022**	**J**	0.0025	0.0014	mg/L		01/19/18 10:29	01/19/18 18:06	5
Calcium	**15**		0.25	0.13	mg/L		01/19/18 10:29	01/19/18 18:06	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/19/18 10:29	01/19/18 18:06	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 18:06	5
Chromium	**0.0020**	**J**	0.0025	0.0011	mg/L		01/19/18 10:29	01/19/18 18:06	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/19/18 10:29	01/19/18 18:06	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/19/18 10:29	01/19/18 18:06	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/19/18 10:29	01/19/18 18:06	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/19/18 10:29	01/19/18 18:06	5
Thallium	**0.00011**	**J**	0.00050	0.000085	mg/L		01/19/18 10:29	01/19/18 18:06	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**110**		5.0	5.0	mg/L			01/18/18 14:31	1

Client Sample ID: GWC-23-20180112-01

Lab Sample ID: 400-148353-4

Date Collected: 01/12/18 13:50

Matrix: Water

Date Received: 01/12/18 16:56

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.3**		1.0	0.89	mg/L			01/23/18 21:08	1
Fluoride	<0.082		0.20	0.082	mg/L			01/23/18 21:08	1
Sulfate	**1.9**		1.0	0.70	mg/L			01/23/18 21:08	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/19/18 10:29	01/19/18 18:11	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/19/18 10:29	01/19/18 18:11	5
Boron	<0.021		0.050	0.021	mg/L		01/19/18 10:29	01/19/18 18:11	5
Nickel	**0.0023**	**J**	0.0025	0.0018	mg/L		01/19/18 10:29	01/19/18 18:11	5
Barium	**0.037**		0.0025	0.00049	mg/L		01/19/18 10:29	01/19/18 18:11	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/19/18 10:29	01/19/18 18:11	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 18:11	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/19/18 10:29	01/19/18 18:11	5
Calcium	**1.4**		0.25	0.13	mg/L		01/19/18 10:29	01/19/18 18:11	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/19/18 10:29	01/19/18 18:11	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 18:11	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/19/18 10:29	01/19/18 18:11	5
Cobalt	**0.0072**		0.0025	0.00040	mg/L		01/19/18 10:29	01/19/18 18:11	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/19/18 10:29	01/19/18 18:11	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/19/18 10:29	01/19/18 18:11	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/19/18 10:29	01/19/18 18:11	5
Thallium	**0.00011**	**J**	0.00050	0.000085	mg/L		01/19/18 10:29	01/19/18 18:11	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**43**		5.0	5.0	mg/L			01/18/18 14:31	1

Client Sample ID: GWC-19-20180112-01

Date Collected: 01/12/18 14:50
Date Received: 01/12/18 16:56

Lab Sample ID: 400-148353-5

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.0**		1.0	0.89	mg/L			01/23/18 22:17	1
Fluoride	**0.083**	**J**	0.20	0.082	mg/L			01/23/18 22:17	1
Sulfate	**1.5**		1.0	0.70	mg/L			01/23/18 22:17	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/19/18 10:29	01/19/18 18:15	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/19/18 10:29	01/19/18 18:15	5
Boron	<0.021		0.050	0.021	mg/L		01/19/18 10:29	01/19/18 18:15	5
Nickel	**0.0020**	**J**	0.0025	0.0018	mg/L		01/19/18 10:29	01/19/18 18:15	5
Barium	**0.014**		0.0025	0.00049	mg/L		01/19/18 10:29	01/19/18 18:15	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/19/18 10:29	01/19/18 18:15	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 18:15	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/19/18 10:29	01/19/18 18:15	5
Calcium	**9.5**		0.25	0.13	mg/L		01/19/18 10:29	01/19/18 18:15	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/19/18 10:29	01/19/18 18:15	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 18:15	5
Chromium	**0.0017**	**J**	0.0025	0.0011	mg/L		01/19/18 10:29	01/19/18 18:15	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/19/18 10:29	01/19/18 18:15	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/19/18 10:29	01/19/18 18:15	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/19/18 10:29	01/19/18 18:15	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/19/18 10:29	01/19/18 18:15	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/19/18 10:29	01/19/18 18:15	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**81**		5.0	5.0	mg/L			01/18/18 14:31	1

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: GWC-20-20180112-01
Lab Sample ID: 400-148353-1
Date Collected: 01/12/18 10:36
Matrix: Water
Date Received: 01/12/18 16:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383771	01/23/18 20:00	JAW	TAL PEN
Total Recoverable	Prep	3005A			383305	01/19/18 10:29	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383504	01/19/18 17:57	DRE	TAL PEN
Total/NA	Analysis	2540C-2011		1	509827	01/18/18 14:31	KOM	TAL SAV

Client Sample ID: GWC-9-20180112-01
Lab Sample ID: 400-148353-2
Date Collected: 01/12/18 10:44
Matrix: Water
Date Received: 01/12/18 16:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383771	01/23/18 20:22	JAW	TAL PEN
Total Recoverable	Prep	3005A			383305	01/19/18 10:29	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383504	01/19/18 18:02	DRE	TAL PEN
Total/NA	Analysis	2540C-2011		1	509827	01/18/18 14:31	KOM	TAL SAV

Client Sample ID: GWC-18-20180112-01
Lab Sample ID: 400-148353-3
Date Collected: 01/12/18 12:02
Matrix: Water
Date Received: 01/12/18 16:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383771	01/23/18 20:45	JAW	TAL PEN
Total Recoverable	Prep	3005A			383305	01/19/18 10:29	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383504	01/19/18 18:06	DRE	TAL PEN
Total/NA	Analysis	2540C-2011		1	509827	01/18/18 14:31	KOM	TAL SAV

Client Sample ID: GWC-23-20180112-01
Lab Sample ID: 400-148353-4
Date Collected: 01/12/18 13:50
Matrix: Water
Date Received: 01/12/18 16:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383771	01/23/18 21:08	JAW	TAL PEN
Total Recoverable	Prep	3005A			383305	01/19/18 10:29	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383504	01/19/18 18:11	DRE	TAL PEN
Total/NA	Analysis	2540C-2011		1	509827	01/18/18 14:31	KOM	TAL SAV

Client Sample ID: GWC-19-20180112-01
Lab Sample ID: 400-148353-5
Date Collected: 01/12/18 14:50
Matrix: Water
Date Received: 01/12/18 16:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383771	01/23/18 22:17	JAW	TAL PEN
Total Recoverable	Prep	3005A			383305	01/19/18 10:29	DRE	TAL PEN

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: GWC-19-20180112-01

Date Collected: 01/12/18 14:50
Date Received: 01/12/18 16:56

Lab Sample ID: 400-148353-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6020		5	383504	01/19/18 18:15	DRE	TAL PEN
Total/NA	Analysis	2540C-2011		1	509827	01/18/18 14:31	KOM	TAL SAV

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

HPLC/IC

Analysis Batch: 383771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148353-1	GWC-20-20180112-01	Total/NA	Water	300.0	
400-148353-2	GWC-9-20180112-01	Total/NA	Water	300.0	
400-148353-3	GWC-18-20180112-01	Total/NA	Water	300.0	
400-148353-4	GWC-23-20180112-01	Total/NA	Water	300.0	
400-148353-5	GWC-19-20180112-01	Total/NA	Water	300.0	
MB 400-383771/4	Method Blank	Total/NA	Water	300.0	
LCS 400-383771/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-383771/6	Lab Control Sample Dup	Total/NA	Water	300.0	
400-148546-B-5 MS	Matrix Spike	Total/NA	Water	300.0	
400-148546-B-5 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 383305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148353-1	GWC-20-20180112-01	Total Recoverable	Water	3005A	
400-148353-2	GWC-9-20180112-01	Total Recoverable	Water	3005A	
400-148353-3	GWC-18-20180112-01	Total Recoverable	Water	3005A	
400-148353-4	GWC-23-20180112-01	Total Recoverable	Water	3005A	
400-148353-5	GWC-19-20180112-01	Total Recoverable	Water	3005A	
MB 400-383305/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-383305/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-148420-D-3-B MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
400-148420-D-3-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 383504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148353-1	GWC-20-20180112-01	Total Recoverable	Water	6020	383305
400-148353-2	GWC-9-20180112-01	Total Recoverable	Water	6020	383305
400-148353-3	GWC-18-20180112-01	Total Recoverable	Water	6020	383305
400-148353-4	GWC-23-20180112-01	Total Recoverable	Water	6020	383305
400-148353-5	GWC-19-20180112-01	Total Recoverable	Water	6020	383305
MB 400-383305/1-A ^5	Method Blank	Total Recoverable	Water	6020	383305
LCS 400-383305/2-A	Lab Control Sample	Total Recoverable	Water	6020	383305
400-148420-D-3-B MS ^5	Matrix Spike	Total Recoverable	Water	6020	383305
400-148420-D-3-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	6020	383305

General Chemistry

Analysis Batch: 509827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148353-1	GWC-20-20180112-01	Total/NA	Water	2540C-2011	
400-148353-2	GWC-9-20180112-01	Total/NA	Water	2540C-2011	
400-148353-3	GWC-18-20180112-01	Total/NA	Water	2540C-2011	
400-148353-4	GWC-23-20180112-01	Total/NA	Water	2540C-2011	
400-148353-5	GWC-19-20180112-01	Total/NA	Water	2540C-2011	
MB 680-509827/1	Method Blank	Total/NA	Water	2540C-2011	
LCS 680-509827/2	Lab Control Sample	Total/NA	Water	2540C-2011	
LCSD 680-509827/3	Lab Control Sample Dup	Total/NA	Water	2540C-2011	
680-147777-W-1 DU	Duplicate	Total/NA	Water	2540C-2011	

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-383771/4
Matrix: Water
Analysis Batch: 383771

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			01/23/18 17:43	1
Fluoride	<0.082		0.20	0.082	mg/L			01/23/18 17:43	1
Sulfate	<0.70		1.0	0.70	mg/L			01/23/18 17:43	1

Lab Sample ID: LCS 400-383771/5
Matrix: Water
Analysis Batch: 383771

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.63		mg/L		96	90 - 110
Fluoride	10.0	9.80		mg/L		98	90 - 110
Sulfate	10.0	10.2		mg/L		102	90 - 110

Lab Sample ID: LCSD 400-383771/6
Matrix: Water
Analysis Batch: 383771

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.60		mg/L		96	90 - 110	0	15
Fluoride	10.0	10.0		mg/L		100	90 - 110	2	15
Sulfate	10.0	10.1		mg/L		101	90 - 110	1	15

Lab Sample ID: 400-148546-B-5 MS
Matrix: Water
Analysis Batch: 383771

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3700		1000	4690		mg/L		94	80 - 120
Fluoride	<8.2		1000	969		mg/L		97	80 - 120
Sulfate	540		1000	1580		mg/L		104	80 - 120

Lab Sample ID: 400-148546-B-5 MSD
Matrix: Water
Analysis Batch: 383771

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3700		1000	4690		mg/L		94	80 - 120	0	20
Fluoride	<8.2		1000	986		mg/L		99	80 - 120	2	20
Sulfate	540		1000	1570		mg/L		103	80 - 120	1	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-383305/1-A ^5
Matrix: Water
Analysis Batch: 383504

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 383305

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/19/18 10:29	01/19/18 16:45	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/19/18 10:29	01/19/18 16:45	5

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 400-383305/1-A ^5
Matrix: Water
Analysis Batch: 383504

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 383305

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.021		0.050	0.021	mg/L		01/19/18 10:29	01/19/18 16:45	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/19/18 10:29	01/19/18 16:45	5
Barium	<0.00049		0.0025	0.00049	mg/L		01/19/18 10:29	01/19/18 16:45	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/19/18 10:29	01/19/18 16:45	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 16:45	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/19/18 10:29	01/19/18 16:45	5
Calcium	<0.13		0.25	0.13	mg/L		01/19/18 10:29	01/19/18 16:45	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/19/18 10:29	01/19/18 16:45	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/19/18 10:29	01/19/18 16:45	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/19/18 10:29	01/19/18 16:45	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/19/18 10:29	01/19/18 16:45	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/19/18 10:29	01/19/18 16:45	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/19/18 10:29	01/19/18 16:45	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/19/18 10:29	01/19/18 16:45	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/19/18 10:29	01/19/18 16:45	5

Lab Sample ID: LCS 400-383305/2-A
Matrix: Water
Analysis Batch: 383504

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 383305

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0500	0.0556		mg/L		111	80 - 120
Copper	0.0500	0.0529		mg/L		106	80 - 120
Boron	0.100	0.111		mg/L		111	80 - 120
Nickel	0.0500	0.0569		mg/L		114	80 - 120
Barium	0.0500	0.0522		mg/L		104	80 - 120
Silver	0.0500	0.0531		mg/L		106	80 - 120
Beryllium	0.0500	0.0578		mg/L		116	80 - 120
Vanadium	0.0500	0.0529		mg/L		106	80 - 120
Calcium	5.00	5.63		mg/L		113	80 - 120
Zinc	0.0500	0.0556		mg/L		111	80 - 120
Cadmium	0.0500	0.0547		mg/L		109	80 - 120
Chromium	0.0500	0.0530		mg/L		106	80 - 120
Cobalt	0.0500	0.0535		mg/L		107	80 - 120
Lead	0.0500	0.0532		mg/L		106	80 - 120
Antimony	0.0500	0.0566		mg/L		113	80 - 120
Selenium	0.0500	0.0537		mg/L		107	80 - 120
Thallium	0.0100	0.0111		mg/L		111	80 - 120
Lithium	0.0500	0.0592		mg/L		118	80 - 120
Molybdenum	0.0500	0.0548		mg/L		110	80 - 120

Lab Sample ID: 400-148420-D-3-B MS ^5
Matrix: Water
Analysis Batch: 383504

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 383305

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.011		0.0500	0.0628		mg/L		103	75 - 125
Copper	0.012		0.0500	0.0607		mg/L		97	75 - 125
Boron	<0.021		0.100	0.113		mg/L		113	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-148420-D-3-B MS ^5
Matrix: Water
Analysis Batch: 383504

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 383305

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nickel	0.22		0.0500	0.271	4	mg/L		94	75 - 125
Barium	0.043		0.0500	0.0918		mg/L		97	75 - 125
Silver	<0.00011		0.0500	0.0494		mg/L		99	75 - 125
Beryllium	0.018		0.0500	0.0702		mg/L		104	75 - 125
Vanadium	0.040		0.0500	0.0881		mg/L		96	75 - 125
Calcium	9.5		5.00	14.7		mg/L		105	75 - 125
Zinc	0.40		0.0500	0.455	4	mg/L		116	75 - 125
Cadmium	0.00037	J	0.0500	0.0514		mg/L		102	75 - 125
Chromium	0.0058		0.0500	0.0534		mg/L		95	75 - 125
Cobalt	0.18		0.0500	0.225		mg/L		91	75 - 125
Lead	0.00085	J	0.0500	0.0489		mg/L		96	75 - 125
Antimony	<0.0010		0.0500	0.0551		mg/L		110	75 - 125
Selenium	0.0038		0.0500	0.0545		mg/L		101	75 - 125
Thallium	0.00043	J	0.0100	0.0104		mg/L		100	75 - 125
Lithium	0.028		0.0500	0.0816		mg/L		107	75 - 125
Molybdenum	<0.00085		0.0500	0.0530		mg/L		106	75 - 125

Lab Sample ID: 400-148420-D-3-C MSD ^5
Matrix: Water
Analysis Batch: 383504

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 383305

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.011		0.0500	0.0626		mg/L		103	75 - 125	0	20
Copper	0.012		0.0500	0.0601		mg/L		96	75 - 125	1	20
Boron	<0.021		0.100	0.118		mg/L		118	75 - 125	4	20
Nickel	0.22		0.0500	0.270	4	mg/L		92	75 - 125	0	20
Barium	0.043		0.0500	0.0920		mg/L		98	75 - 125	0	20
Silver	<0.00011		0.0500	0.0490		mg/L		98	75 - 125	1	20
Beryllium	0.018		0.0500	0.0701		mg/L		103	75 - 125	0	20
Vanadium	0.040		0.0500	0.0873		mg/L		95	75 - 125	1	20
Calcium	9.5		5.00	14.5		mg/L		101	75 - 125	1	20
Zinc	0.40		0.0500	0.446	4	mg/L		99	75 - 125	2	20
Cadmium	0.00037	J	0.0500	0.0516		mg/L		102	75 - 125	0	20
Chromium	0.0058		0.0500	0.0533		mg/L		95	75 - 125	0	20
Cobalt	0.18		0.0500	0.224		mg/L		89	75 - 125	0	20
Lead	0.00085	J	0.0500	0.0492		mg/L		97	75 - 125	1	20
Antimony	<0.0010		0.0500	0.0534		mg/L		107	75 - 125	3	20
Selenium	0.0038		0.0500	0.0534		mg/L		99	75 - 125	2	20
Thallium	0.00043	J	0.0100	0.0103		mg/L		99	75 - 125	1	20
Lithium	0.028		0.0500	0.0811		mg/L		106	75 - 125	1	20
Molybdenum	<0.00085		0.0500	0.0513		mg/L		103	75 - 125	3	20

Method: 2540C-2011 - Total Dissolved Solids (Dried at 180 °C)

Lab Sample ID: MB 680-509827/1
Matrix: Water
Analysis Batch: 509827

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<5.0		5.0	5.0	mg/L			01/18/18 14:31	1

Lab Sample ID: LCS 680-509827/2
Matrix: Water
Analysis Batch: 509827

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			344	328		mg/L		95	80 - 120		

Lab Sample ID: LCSD 680-509827/3
Matrix: Water
Analysis Batch: 509827

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			344	346		mg/L		101	80 - 120	5	25

Lab Sample ID: 680-147777-W-1 DU
Matrix: Water
Analysis Batch: 509827

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	170			186	F3	mg/L				9	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica

Client Information	Sampler: Aubrey Ellis, Hannah Beaugh	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No:
Client Contact: Lauren Petty	Phone:	E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 1
Company: Southern Company				Job #:
Address: 42 Inverness Center Parkway	Due Date Requested:			
City: Birmingham	TAT Requested (days):			
State, Zip: AL, 35242				
Phone: 205-992-5417	PO #:			
Email: LMPETTY@southernco.com	WO #:			
Project Name: Plant McIntosh - LF4	Project #:			
Site: State Permit	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	TDS - SM 2540C ; Cl,F,SO4 - EPA 300	State Permit Metals and Part 257 Appendix III - EPA (6020) As, B, Ba, Be, Ca, Cd, Cr, Co, Cu, Pb, Ni, Sb, Se, Ag, Tl, V, Zn	Total Number of containers	Special Instructions/Note:
			Preservation Code:				I	D		
GWC-20-20180112-01	1/12/18	1036	G	W	N	N	X	X	2	
GWC-9-20180112-01	1/12/18	1044	G	W	N	N	X	X	2	
GWC-18-20180112-01	1/12/18	1202	G	W	N	N	X	X	2	
GWC-23-20180112-01	1/12/18	1350	G	W	N	N	X	X	2	
GWC-19-20180112-01	1/12/18	1450	G	W	N	N	X	X	2	

400-148353 Chain of Custody

[X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological

[ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	1-12-18 1656	FEDM	[signature]	1-12-18 1656	TA PEN
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
			[signature]	1/20/2018 0822	TA PEN
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.8°C (IR) 5.2°C
0.0°C IR-7

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-148353-1
SDG Number: McIntosh Ash Disposal Area 4

Login Number: 148353
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.2°C, CUIR18
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-18
Alaska	State Program	10		06-30-18
Alaska (UST)	State Program	10	UST-104	09-22-19
Arizona	State Program	9	AZ0808	12-14-18
Arkansas DEQ	State Program	6	88-0692	02-01-19
California	State Program	9	2939	06-30-18
Colorado	State Program	8	N/A	12-31-18
Connecticut	State Program	1	PH-0161	03-31-19
Florida	NELAP	4	E87052	06-30-18
GA Dept. of Agriculture	State Program	4	N/A	06-12-18
Georgia	State Program	4	803	06-30-18
Guam	State Program	9	15-005r	04-16-18
Hawaii	State Program	9	N/A	06-30-18
Illinois	NELAP	5	200022	11-30-18
Indiana	State Program	5	N/A	06-30-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148353-1
SDG: McIntosh Ash Disposal Area 4

Laboratory: TestAmerica Savannah (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-18
Kentucky (UST)	State Program	4	18	06-30-18
Kentucky (WW)	State Program	4	90084	12-31-18 *
L-A-B	DoD ELAP		L2463	09-22-19
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-18
Louisiana (DW)	NELAP	6	LA160019	12-31-18
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-18
Massachusetts	State Program	1	M-GA006	06-30-18
Michigan	State Program	5	9925	06-30-18
Mississippi	State Program	4	N/A	06-30-18
Nebraska	State Program	7	TestAmerica-Savannah	06-30-18
New Jersey	NELAP	2	GA769	06-30-18
New Mexico	State Program	6	N/A	06-30-18
New York	NELAP	2	10842	03-31-18
North Carolina (DW)	State Program	4	13701	07-31-18
North Carolina (WW/SW)	State Program	4	269	12-31-18
Oklahoma	State Program	6	9984	08-31-18
Pennsylvania	NELAP	3	68-00474	06-30-18
Puerto Rico	State Program	2	GA00006	12-31-18
South Carolina	State Program	4	98001	06-30-18
Tennessee	State Program	4	TN02961	06-30-18
Texas	NELAP	6	T104704185-16-9	11-30-18
Texas	State Program	6	T104704185	06-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
USDA	Federal		SAV 3-04	06-14-20 *
Virginia	NELAP	3	460161	06-14-18
Washington	State Program	10	C805	06-10-18
West Virginia DEP	State Program	3	094	06-30-18
Wisconsin	State Program	5	999819810	08-31-18
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-148362-1
TestAmerica SDG: McIntosh Ash Disposal Area 4
Client Project/Site: CCR - Plant McIntosh

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Cheyenne R Whitmire

Authorized for release by:
1/30/2018 9:27:07 AM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

Table of Contents

Job ID: 400-148362-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-148362-1

Metals
Method(s) 6020: The matrix spike duplicate (MSD) recoveries for preparation batch 382903 and analytical batch 383077 were outside control limits for Selenium. The % RSD is high for selenium in the MSD but the RPD criteria was met. The data have been reported.

Detection Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148362-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: GWA-2-20180110-01 — Lab Sample ID: 400-148362-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.6		1.0	0.89	mg/L	1		300.0	Total/NA
Nickel	0.0026		0.0025	0.0018	mg/L	5		6020	Total Recoverable
Barium	0.034		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.52		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0014	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.0013	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Selenium	0.00052	J F1	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	6.0		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-4R-20180110-01 — Lab Sample ID: 400-148362-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.3		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	7.6		1.0	0.70	mg/L	1		300.0	Total/NA
Arsenic	0.00068	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.021		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.82		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.0018	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Selenium	0.00069	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	42		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-3-20180110-01 — Lab Sample ID: 400-148362-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.2		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	1.1		1.0	0.70	mg/L	1		300.0	Total/NA
Barium	0.016		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.88		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0012	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Selenium	0.00079	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	28		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-5-20180110-01 — Lab Sample ID: 400-148362-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.2		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.048		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	3.3		0.25	0.13	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GWA-5-20180110-01 (Continued) — Lab Sample ID: 400-148362-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.00068	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	48		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-13-20180110-01 — Lab Sample ID: 400-148362-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.015		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.27		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.00049	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Selenium	0.00025	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	10		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-15-20180111-01 — Lab Sample ID: 400-148362-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.023		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.41		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0011	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.00044	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	56		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-14-20180111-01 — Lab Sample ID: 400-148362-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.9		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.012		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.51		0.25	0.13	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	36		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-17-20180111-01 — Lab Sample ID: 400-148362-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.1		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.12	J	0.20	0.082	mg/L	1		300.0	Total/NA
Nickel	0.0019	J	0.0025	0.0018	mg/L	5		6020	Total Recoverable
Barium	0.017		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Beryllium	0.00064	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148362-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: GWC-17-20180111-01 (Continued) — Lab Sample ID: 400-148362-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	2.1		0.25	0.13	mg/L	5		6020	Total Recoverable
Cadmium	0.00062	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Chromium	0.0026		0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.00046	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	18		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-16-20180111-01 — Lab Sample ID: 400-148362-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.022		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.43		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0013	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.00043	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	6.0		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-12-20180111-01 — Lab Sample ID: 400-148362-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.010		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.78		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0016	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.00060	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	34		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-1-20180111-01 — Lab Sample ID: 400-148362-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.5		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	1.6		1.0	0.70	mg/L	1		300.0	Total/NA
Barium	0.046		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	2.4		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.0019	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	100		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-10-20180111-01 — Lab Sample ID: 400-148362-12

This Detection Summary does not include radiochemical test results.

Client Sample ID: GWC-10-20180111-01 (Continued) — Lab Sample ID: 400-148362-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.9		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.15	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	2.6		1.0	0.70	mg/L	1		300.0	Total/NA
Arsenic	0.00046	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Boron	0.060		0.050	0.021	mg/L	5		6020	Total Recoverable
Barium	0.013		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	15		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0055		0.0025	0.0011	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	150		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-21-20180111-01 — Lab Sample ID: 400-148362-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.8		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.016		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	1.0		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.0013	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	20		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-11-20180111-01 — Lab Sample ID: 400-148362-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.3		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.31		0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	3.5		1.0	0.70	mg/L	1		300.0	Total/NA
Arsenic	0.0012	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.010		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	9.3		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0044		0.0025	0.0011	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	10		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: FB-1-20180111-01 — Lab Sample ID: 400-148362-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.00024	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable

Client Sample ID: FERB-1-20180111-01 — Lab Sample ID: 400-148362-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.00066	J	0.0025	0.00049	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148362-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: FERB-2-20180111-01 — Lab Sample ID: 400-148362-17

No Detections.

Client Sample ID: FB-2-20180111-01 — Lab Sample ID: 400-148362-18

No Detections.

Client Sample ID: DUP-1-20180111-01 — Lab Sample ID: 400-148362-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.5		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	1.5		1.0	0.70	mg/L	1		300.0	Total/NA
Barium	0.046		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	2.4		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.0019	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable

Client Sample ID: DUP-2-20180111-01 — Lab Sample ID: 400-148362-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.011		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.74		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0017	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.00056	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	80		5.0	3.4	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148362-1
SDG: McIntosh Ash Disposal Area 4

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6020	Metals (ICP/MS)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148362-1
SDG: McIntosh Ash Disposal Area 4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-148362-1	GWA-2-20180110-01	Water	01/10/18 12:27	01/15/18 09:28
400-148362-2	GWA-4R-20180110-01	Water	01/10/18 13:58	01/15/18 09:28
400-148362-3	GWA-3-20180110-01	Water	01/10/18 14:25	01/15/18 09:28
400-148362-4	GWA-5-20180110-01	Water	01/10/18 14:54	01/15/18 09:28
400-148362-5	GWA-13-20180110-01	Water	01/10/18 15:04	01/15/18 09:28
400-148362-6	GWA-15-20180111-01	Water	01/11/18 09:26	01/15/18 09:28
400-148362-7	GWA-14-20180111-01	Water	01/11/18 09:28	01/15/18 09:28
400-148362-8	GWC-17-20180111-01	Water	01/11/18 10:41	01/15/18 09:28
400-148362-9	GWA-16-20180111-01	Water	01/11/18 11:12	01/15/18 09:28
400-148362-10	GWC-12-20180111-01	Water	01/11/18 12:04	01/15/18 09:28
400-148362-11	GWC-1-20180111-01	Water	01/11/18 12:26	01/15/18 09:28
400-148362-12	GWC-10-20180111-01	Water	01/11/18 13:54	01/15/18 09:28
400-148362-13	GWC-21-20180111-01	Water	01/11/18 15:14	01/15/18 09:28
400-148362-14	GWC-11-20180111-01	Water	01/11/18 15:10	01/15/18 09:28
400-148362-15	FB-1-20180111-01	Water	01/11/18 13:25	01/15/18 09:28
400-148362-16	FERB-1-20180111-01	Water	01/11/18 13:40	01/15/18 09:28
400-148362-17	FERB-2-20180111-01	Water	01/11/18 15:30	01/15/18 09:28
400-148362-18	FB-2-20180111-01	Water	01/11/18 15:05	01/15/18 09:28
400-148362-19	DUP-1-20180111-01	Water	01/11/18 00:00	01/15/18 09:28
400-148362-20	DUP-2-20180111-01	Water	01/11/18 00:00	01/15/18 09:28

Client Sample ID: GWA-2-20180110-01

Date Collected: 01/10/18 12:27
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-1

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.6**		1.0	0.89	mg/L			01/18/18 18:51	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 18:51	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 18:51	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 14:45	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 14:45	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 14:45	5
Nickel	**0.0026**		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 14:45	5
Barium	**0.034**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 14:45	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 14:45	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 14:45	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 14:45	5
Calcium	**0.52**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 14:45	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 14:45	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 14:45	5
Chromium	**0.0014**	**J**	0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 14:45	5
Cobalt	**0.0013**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 14:45	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 14:45	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 14:45	5
Selenium	**0.00052**	**J F1**	0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 14:45	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 14:45	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**6.0**		5.0	3.4	mg/L			01/17/18 19:26	1

Client Sample ID: GWA-4R-20180110-01

Date Collected: 01/10/18 13:58
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-2

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.3**		1.0	0.89	mg/L			01/18/18 19:14	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 19:14	1
Sulfate	**7.6**		1.0	0.70	mg/L			01/18/18 19:14	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00068**	**J**	0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 15:07	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 15:07	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 15:07	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 15:07	5
Barium	**0.021**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 15:07	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 15:07	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:07	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 15:07	5
Calcium	**0.82**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 15:07	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 15:07	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:07	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 15:07	5
Cobalt	**0.0018**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 15:07	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 15:07	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 15:07	5
Selenium	**0.00069**	**J**	0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 15:07	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 15:07	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**42**		5.0	3.4	mg/L			01/17/18 19:26	1

Client Sample ID: GWA-3-20180110-01

Date Collected: 01/10/18 14:25
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-3

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.2**		1.0	0.89	mg/L			01/18/18 20:23	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 20:23	1
Sulfate	**1.1**		1.0	0.70	mg/L			01/18/18 20:23	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 15:12	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 15:12	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 15:12	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 15:12	5
Barium	**0.016**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 15:12	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 15:12	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:12	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 15:12	5
Calcium	**0.88**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 15:12	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 15:12	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:12	5
Chromium	**0.0012**	**J**	0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 15:12	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 15:12	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 15:12	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 15:12	5
Selenium	**0.00079**	**J**	0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 15:12	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 15:12	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**28**		5.0	3.4	mg/L			01/17/18 19:52	1

Client Sample ID: GWA-5-20180110-01

Date Collected: 01/10/18 14:54
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-4

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.2**		1.0	0.89	mg/L			01/18/18 21:08	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 21:08	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 21:08	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 15:16	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 15:16	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 15:16	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 15:16	5
Barium	**0.048**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 15:16	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 15:16	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:16	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 15:16	5
Calcium	**3.3**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 15:16	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 15:16	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:16	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 15:16	5
Cobalt	**0.00068**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 15:16	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 15:16	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 15:16	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 15:16	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 15:16	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**48**		5.0	3.4	mg/L			01/17/18 19:52	1

Client Sample ID: GWA-13-20180110-01

Date Collected: 01/10/18 15:04
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-5

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.4**		1.0	0.89	mg/L			01/18/18 21:31	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 21:31	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 21:31	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 15:43	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 15:43	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 15:43	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 15:43	5
Barium	**0.015**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 15:43	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 15:43	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:43	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 15:43	5
Calcium	**0.27**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 15:43	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 15:43	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:43	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 15:43	5
Cobalt	**0.00049**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 15:43	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 15:43	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 15:43	5
Selenium	**0.00025**	**J**	0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 15:43	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 15:43	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**10**		5.0	3.4	mg/L			01/17/18 19:52	1

Client Sample ID: GWA-15-20180111-01

Date Collected: 01/11/18 09:26
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-6

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.4**		1.0	0.89	mg/L			01/18/18 15:49	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 15:49	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 15:49	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 15:48	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 15:48	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 15:48	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 15:48	5
Barium	**0.023**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 15:48	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 15:48	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:48	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 15:48	5
Calcium	**0.41**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 15:48	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 15:48	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:48	5
Chromium	**0.0011**	**J**	0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 15:48	5
Cobalt	**0.00044**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 15:48	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 15:48	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 15:48	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 15:48	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 15:48	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**56**		5.0	3.4	mg/L			01/18/18 08:57	1

Client Sample ID: GWA-14-20180111-01

Date Collected: 01/11/18 09:28
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-7

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.9**		1.0	0.89	mg/L			01/18/18 16:57	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 16:57	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 16:57	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 15:52	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 15:52	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 15:52	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 15:52	5
Barium	**0.012**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 15:52	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 15:52	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:52	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 15:52	5
Calcium	**0.51**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 15:52	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 15:52	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:52	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 15:52	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 15:52	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 15:52	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 15:52	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 15:52	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 15:52	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**36**		5.0	3.4	mg/L			01/18/18 08:57	1

Client Sample ID: GWC-17-20180111-01

Date Collected: 01/11/18 10:41
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-8

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.1**		1.0	0.89	mg/L			01/18/18 17:20	1
Fluoride	**0.12**	**J**	0.20	0.082	mg/L			01/18/18 17:20	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 17:20	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 15:59	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 15:59	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 15:59	5
Nickel	**0.0019**	**J**	0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 15:59	5
Barium	**0.017**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 15:59	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 15:59	5
Beryllium	**0.00064**	**J**	0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:59	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 15:59	5
Calcium	**2.1**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 15:59	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 15:59	5
Cadmium	**0.00062**	**J**	0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 15:59	5
Chromium	**0.0026**		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 15:59	5
Cobalt	**0.00046**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 15:59	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 15:59	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 15:59	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 15:59	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 15:59	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**18**		5.0	3.4	mg/L			01/18/18 08:57	1

Client Sample ID: GWA-16-20180111-01

Date Collected: 01/11/18 11:12
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-9

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.4**		1.0	0.89	mg/L			01/18/18 17:43	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 17:43	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 17:43	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 16:03	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 16:03	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 16:03	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 16:03	5
Barium	**0.022**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 16:03	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 16:03	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:03	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 16:03	5
Calcium	**0.43**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 16:03	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 16:03	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:03	5
Chromium	**0.0013**	**J**	0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 16:03	5
Cobalt	**0.00043**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 16:03	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 16:03	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 16:03	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 16:03	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 16:03	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**6.0**		5.0	3.4	mg/L			01/18/18 08:57	1

Client Sample ID: GWC-12-20180111-01

Date Collected: 01/11/18 12:04
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-10

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.4**		1.0	0.89	mg/L			01/18/18 18:06	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 18:06	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 18:06	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 16:08	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 16:08	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 16:08	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 16:08	5
Barium	**0.010**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 16:08	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 16:08	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:08	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 16:08	5
Calcium	**0.78**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 16:08	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 16:08	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:08	5
Chromium	**0.0016**	**J**	0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 16:08	5
Cobalt	**0.00060**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 16:08	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 16:08	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 16:08	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 16:08	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 16:08	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**34**		5.0	3.4	mg/L			01/18/18 08:57	1

Client Sample ID: GWC-1-20180111-01

Lab Sample ID: 400-148362-11

Date Collected: 01/11/18 12:26

Matrix: Water

Date Received: 01/15/18 09:28

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.5**		1.0	0.89	mg/L			01/18/18 18:29	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 18:29	1
Sulfate	**1.6**		1.0	0.70	mg/L			01/18/18 18:29	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 16:12	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 16:12	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 16:12	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 16:12	5
Barium	**0.046**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 16:12	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 16:12	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:12	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 16:12	5
Calcium	**2.4**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 16:12	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 16:12	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:12	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 16:12	5
Cobalt	**0.0019**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 16:12	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 16:12	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 16:12	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 16:12	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 16:12	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**100**		5.0	3.4	mg/L			01/18/18 08:57	1

Client Sample ID: GWC-10-20180111-01

Date Collected: 01/11/18 13:54
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-12

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.9**		1.0	0.89	mg/L			01/19/18 02:05	1
Fluoride	**0.15**	**J**	0.20	0.082	mg/L			01/19/18 02:05	1
Sulfate	**2.6**		1.0	0.70	mg/L			01/19/18 02:05	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00046**	**J**	0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 16:17	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 16:17	5
Boron	**0.060**		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 16:17	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 16:17	5
Barium	**0.013**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 16:17	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 16:17	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:17	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 16:17	5
Calcium	**15**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 16:17	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 16:17	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:17	5
Chromium	**0.0055**		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 16:17	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 16:17	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 16:17	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 16:17	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 16:17	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 16:17	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**150**		5.0	3.4	mg/L			01/18/18 11:23	1

Client Sample ID: GWC-21-20180111-01

Date Collected: 01/11/18 15:14
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-13

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.8**		1.0	0.89	mg/L			01/19/18 03:13	1
Fluoride	<0.082		0.20	0.082	mg/L			01/19/18 03:13	1
Sulfate	<0.70		1.0	0.70	mg/L			01/19/18 03:13	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 16:22	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 16:22	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 16:22	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 16:22	5
Barium	**0.016**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 16:22	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 16:22	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:22	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 16:22	5
Calcium	**1.0**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 16:22	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 16:22	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:22	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 16:22	5
Cobalt	**0.0013**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 16:22	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 16:22	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 16:22	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 16:22	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 16:22	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**20**		5.0	3.4	mg/L			01/18/18 11:23	1

Client Sample ID: GWC-11-20180111-01

Date Collected: 01/11/18 15:10
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-14

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.3**		1.0	0.89	mg/L			01/19/18 03:36	1
Fluoride	**0.31**		0.20	0.082	mg/L			01/19/18 03:36	1
Sulfate	**3.5**		1.0	0.70	mg/L			01/19/18 03:36	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0012**	**J**	0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 16:26	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 16:26	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 16:26	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 16:26	5
Barium	**0.010**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 16:26	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 16:26	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:26	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 16:26	5
Calcium	**9.3**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 16:26	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 16:26	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:26	5
Chromium	**0.0044**		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 16:26	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 16:26	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 16:26	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 16:26	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 16:26	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 16:26	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**10**		5.0	3.4	mg/L			01/18/18 11:23	1

Client Sample ID: FB-1-20180111-01

Date Collected: 01/11/18 13:25
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-15

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			01/18/18 23:48	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 23:48	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 23:48	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 16:53	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 16:53	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 16:53	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 16:53	5
Barium	<0.00049		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 16:53	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 16:53	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:53	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 16:53	5
Calcium	<0.13		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 16:53	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 16:53	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:53	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 16:53	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 16:53	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 16:53	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 16:53	5
Selenium	**0.00024**	**J**	0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 16:53	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 16:53	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			01/18/18 11:23	1

Client Sample ID: FERB-1-20180111-01

Date Collected: 01/11/18 13:40
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-16

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			01/18/18 23:25	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 23:25	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 23:25	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 16:58	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 16:58	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 16:58	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 16:58	5
Barium	**0.00066**	**J**	0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 16:58	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 16:58	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:58	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 16:58	5
Calcium	<0.13		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 16:58	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 16:58	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 16:58	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 16:58	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 16:58	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 16:58	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 16:58	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 16:58	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 16:58	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			01/18/18 11:23	1

Client Sample ID: FERB-2-20180111-01

Date Collected: 01/11/18 15:30
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-17

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			01/18/18 23:02	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 23:02	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 23:02	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 17:02	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 17:02	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 17:02	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 17:02	5
Barium	<0.00049		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 17:02	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 17:02	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 17:02	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 17:02	5
Calcium	<0.13		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 17:02	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 17:02	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 17:02	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 17:02	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 17:02	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 17:02	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 17:02	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 17:02	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 17:02	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			01/18/18 11:23	1

Client Sample ID: FB-2-20180111-01

Date Collected: 01/11/18 15:05
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-18

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			01/18/18 22:40	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 22:40	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 22:40	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 17:07	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 17:07	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 17:07	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 17:07	5
Barium	<0.00049		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 17:07	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 17:07	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 17:07	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 17:07	5
Calcium	<0.13		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 17:07	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 17:07	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 17:07	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 17:07	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 17:07	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 17:07	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 17:07	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 17:07	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 17:07	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			01/18/18 11:23	1

Client Sample ID: DUP-1-20180111-01

Date Collected: 01/11/18 00:00
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-19

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.5**		1.0	0.89	mg/L			01/18/18 22:17	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 22:17	1
Sulfate	**1.5**		1.0	0.70	mg/L			01/18/18 22:17	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 17:11	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 17:11	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 17:11	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 17:11	5
Barium	**0.046**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 17:11	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 17:11	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 17:11	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 17:11	5
Calcium	**2.4**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 17:11	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 17:11	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 17:11	5
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 17:11	5
Cobalt	**0.0019**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 17:11	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 17:11	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 17:11	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 17:11	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 17:11	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			01/17/18 19:52	1

Client Sample ID: DUP-2-20180111-01

Date Collected: 01/11/18 00:00
Date Received: 01/15/18 09:28

Lab Sample ID: 400-148362-20

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.4**		1.0	0.89	mg/L			01/18/18 21:54	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 21:54	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 21:54	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 17:16	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 17:16	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 17:16	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 17:16	5
Barium	**0.011**		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 17:16	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 17:16	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 17:16	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 17:16	5
Calcium	**0.74**		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 17:16	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 17:16	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 17:16	5
Chromium	**0.0017**	**J**	0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 17:16	5
Cobalt	**0.00056**	**J**	0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 17:16	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 17:16	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 17:16	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 17:16	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 17:16	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**80**		5.0	3.4	mg/L			01/17/18 19:52	1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148362-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: GWA-2-20180110-01
Lab Sample ID: 400-148362-1
Date Collected: 01/10/18 12:27
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 18:51	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 14:45	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383145	01/17/18 19:26	TET	TAL PEN

Client Sample ID: GWA-4R-20180110-01
Lab Sample ID: 400-148362-2
Date Collected: 01/10/18 13:58
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 19:14	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 15:07	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383145	01/17/18 19:26	TET	TAL PEN

Client Sample ID: GWA-3-20180110-01
Lab Sample ID: 400-148362-3
Date Collected: 01/10/18 14:25
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 20:23	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 15:12	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383147	01/17/18 19:52	TET	TAL PEN

Client Sample ID: GWA-5-20180110-01
Lab Sample ID: 400-148362-4
Date Collected: 01/10/18 14:54
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 21:08	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 15:16	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383147	01/17/18 19:52	TET	TAL PEN

Client Sample ID: GWA-13-20180110-01
Lab Sample ID: 400-148362-5
Date Collected: 01/10/18 15:04
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 21:31	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148362-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: GWA-13-20180110-01
Lab Sample ID: 400-148362-5
Date Collected: 01/10/18 15:04
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6020		5	383077	01/16/18 15:43	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383147	01/17/18 19:52	TET	TAL PEN

Client Sample ID: GWA-15-20180111-01
Lab Sample ID: 400-148362-6
Date Collected: 01/11/18 09:26
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 15:49	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 15:48	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383160	01/18/18 08:57	TET	TAL PEN

Client Sample ID: GWA-14-20180111-01
Lab Sample ID: 400-148362-7
Date Collected: 01/11/18 09:28
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 16:57	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 15:52	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383160	01/18/18 08:57	TET	TAL PEN

Client Sample ID: GWC-17-20180111-01
Lab Sample ID: 400-148362-8
Date Collected: 01/11/18 10:41
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 17:20	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 15:59	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383160	01/18/18 08:57	TET	TAL PEN

Client Sample ID: GWA-16-20180111-01
Lab Sample ID: 400-148362-9
Date Collected: 01/11/18 11:12
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 17:43	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 16:03	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383160	01/18/18 08:57	TET	TAL PEN

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148362-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: GWC-12-20180111-01
Lab Sample ID: 400-148362-10
Date Collected: 01/11/18 12:04
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 18:06	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 16:08	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383160	01/18/18 08:57	TET	TAL PEN

Client Sample ID: GWC-1-20180111-01
Lab Sample ID: 400-148362-11
Date Collected: 01/11/18 12:26
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 18:29	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 16:12	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383160	01/18/18 08:57	TET	TAL PEN

Client Sample ID: GWC-10-20180111-01
Lab Sample ID: 400-148362-12
Date Collected: 01/11/18 13:54
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383274	01/19/18 02:05	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 16:17	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383190	01/18/18 11:23	TET	TAL PEN

Client Sample ID: GWC-21-20180111-01
Lab Sample ID: 400-148362-13
Date Collected: 01/11/18 15:14
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383274	01/19/18 03:13	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 16:22	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383190	01/18/18 11:23	TET	TAL PEN

Client Sample ID: GWC-11-20180111-01
Lab Sample ID: 400-148362-14
Date Collected: 01/11/18 15:10
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383274	01/19/18 03:36	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN

Client Sample ID: GWC-11-20180111-01
Lab Sample ID: 400-148362-14
Date Collected: 01/11/18 15:10
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6020		5	383077	01/16/18 16:26	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383190	01/18/18 11:23	TET	TAL PEN

Client Sample ID: FB-1-20180111-01
Lab Sample ID: 400-148362-15
Date Collected: 01/11/18 13:25
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 23:48	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 16:53	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383190	01/18/18 11:23	TET	TAL PEN

Client Sample ID: FERB-1-20180111-01
Lab Sample ID: 400-148362-16
Date Collected: 01/11/18 13:40
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 23:25	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 16:58	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383190	01/18/18 11:23	TET	TAL PEN

Client Sample ID: FERB-2-20180111-01
Lab Sample ID: 400-148362-17
Date Collected: 01/11/18 15:30
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 23:02	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 17:02	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383190	01/18/18 11:23	TET	TAL PEN

Client Sample ID: FB-2-20180111-01
Lab Sample ID: 400-148362-18
Date Collected: 01/11/18 15:05
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 22:40	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 17:07	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383190	01/18/18 11:23	TET	TAL PEN

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148362-1
SDG: McIntosh Ash Disposal Area 4

Client Sample ID: DUP-1-20180111-01

Lab Sample ID: 400-148362-19

Date Collected: 01/11/18 00:00
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 22:17	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 17:11	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383147	01/17/18 19:52	TET	TAL PEN

Client Sample ID: DUP-2-20180111-01

Lab Sample ID: 400-148362-20

Date Collected: 01/11/18 00:00
Matrix: Water
Date Received: 01/15/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	383202	01/18/18 21:54	JAW	TAL PEN
Total Recoverable	Prep	3005A			382903	01/16/18 09:27	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	383077	01/16/18 17:16	DRE	TAL PEN
Total/NA	Analysis	SM 2540C		1	383147	01/17/18 19:52	TET	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

HPLC/IC

Analysis Batch: 383202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148362-1	GWA-2-20180110-01	Total/NA	Water	300.0	
400-148362-2	GWA-4R-20180110-01	Total/NA	Water	300.0	
400-148362-3	GWA-3-20180110-01	Total/NA	Water	300.0	
400-148362-4	GWA-5-20180110-01	Total/NA	Water	300.0	
400-148362-5	GWA-13-20180110-01	Total/NA	Water	300.0	
400-148362-6	GWA-15-20180111-01	Total/NA	Water	300.0	
400-148362-7	GWA-14-20180111-01	Total/NA	Water	300.0	
400-148362-8	GWC-17-20180111-01	Total/NA	Water	300.0	
400-148362-9	GWA-16-20180111-01	Total/NA	Water	300.0	
400-148362-10	GWC-12-20180111-01	Total/NA	Water	300.0	
400-148362-11	GWC-1-20180111-01	Total/NA	Water	300.0	
400-148362-15	FB-1-20180111-01	Total/NA	Water	300.0	
400-148362-16	FERB-1-20180111-01	Total/NA	Water	300.0	
400-148362-17	FERB-2-20180111-01	Total/NA	Water	300.0	
400-148362-18	FB-2-20180111-01	Total/NA	Water	300.0	
400-148362-19	DUP-1-20180111-01	Total/NA	Water	300.0	
400-148362-20	DUP-2-20180111-01	Total/NA	Water	300.0	
MB 400-383202/4	Method Blank	Total/NA	Water	300.0	
LCS 400-383202/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-383202/9	Lab Control Sample Dup	Total/NA	Water	300.0	
400-148362-6 MS	GWA-15-20180111-01	Total/NA	Water	300.0	
400-148362-6 MSD	GWA-15-20180111-01	Total/NA	Water	300.0	

Analysis Batch: 383274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148362-12	GWC-10-20180111-01	Total/NA	Water	300.0	
400-148362-13	GWC-21-20180111-01	Total/NA	Water	300.0	
400-148362-14	GWC-11-20180111-01	Total/NA	Water	300.0	
MB 400-383274/36	Method Blank	Total/NA	Water	300.0	
LCS 400-383274/37	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-383274/38	Lab Control Sample Dup	Total/NA	Water	300.0	
400-148362-12 MS	GWC-10-20180111-01	Total/NA	Water	300.0	
400-148362-12 MSD	GWC-10-20180111-01	Total/NA	Water	300.0	

Metals

Prep Batch: 382903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148362-1	GWA-2-20180110-01	Total Recoverable	Water	3005A	
400-148362-2	GWA-4R-20180110-01	Total Recoverable	Water	3005A	
400-148362-3	GWA-3-20180110-01	Total Recoverable	Water	3005A	
400-148362-4	GWA-5-20180110-01	Total Recoverable	Water	3005A	
400-148362-5	GWA-13-20180110-01	Total Recoverable	Water	3005A	
400-148362-6	GWA-15-20180111-01	Total Recoverable	Water	3005A	
400-148362-7	GWA-14-20180111-01	Total Recoverable	Water	3005A	
400-148362-8	GWC-17-20180111-01	Total Recoverable	Water	3005A	
400-148362-9	GWA-16-20180111-01	Total Recoverable	Water	3005A	
400-148362-10	GWC-12-20180111-01	Total Recoverable	Water	3005A	
400-148362-11	GWC-1-20180111-01	Total Recoverable	Water	3005A	
400-148362-12	GWC-10-20180111-01	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 382903 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148362-13	GWC-21-20180111-01	Total Recoverable	Water	3005A	
400-148362-14	GWC-11-20180111-01	Total Recoverable	Water	3005A	
400-148362-15	FB-1-20180111-01	Total Recoverable	Water	3005A	
400-148362-16	FERB-1-20180111-01	Total Recoverable	Water	3005A	
400-148362-17	FERB-2-20180111-01	Total Recoverable	Water	3005A	
400-148362-18	FB-2-20180111-01	Total Recoverable	Water	3005A	
400-148362-19	DUP-1-20180111-01	Total Recoverable	Water	3005A	
400-148362-20	DUP-2-20180111-01	Total Recoverable	Water	3005A	
MB 400-382903/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-382903/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-148362-1 MS	GWA-2-20180110-01	Total Recoverable	Water	3005A	
400-148362-1 MSD	GWA-2-20180110-01	Total Recoverable	Water	3005A	

Analysis Batch: 383077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148362-1	GWA-2-20180110-01	Total Recoverable	Water	6020	382903
400-148362-2	GWA-4R-20180110-01	Total Recoverable	Water	6020	382903
400-148362-3	GWA-3-20180110-01	Total Recoverable	Water	6020	382903
400-148362-4	GWA-5-20180110-01	Total Recoverable	Water	6020	382903
400-148362-5	GWA-13-20180110-01	Total Recoverable	Water	6020	382903
400-148362-6	GWA-15-20180111-01	Total Recoverable	Water	6020	382903
400-148362-7	GWA-14-20180111-01	Total Recoverable	Water	6020	382903
400-148362-8	GWC-17-20180111-01	Total Recoverable	Water	6020	382903
400-148362-9	GWA-16-20180111-01	Total Recoverable	Water	6020	382903
400-148362-10	GWC-12-20180111-01	Total Recoverable	Water	6020	382903
400-148362-11	GWC-1-20180111-01	Total Recoverable	Water	6020	382903
400-148362-12	GWC-10-20180111-01	Total Recoverable	Water	6020	382903
400-148362-13	GWC-21-20180111-01	Total Recoverable	Water	6020	382903
400-148362-14	GWC-11-20180111-01	Total Recoverable	Water	6020	382903
400-148362-15	FB-1-20180111-01	Total Recoverable	Water	6020	382903
400-148362-16	FERB-1-20180111-01	Total Recoverable	Water	6020	382903
400-148362-17	FERB-2-20180111-01	Total Recoverable	Water	6020	382903
400-148362-18	FB-2-20180111-01	Total Recoverable	Water	6020	382903
400-148362-19	DUP-1-20180111-01	Total Recoverable	Water	6020	382903
400-148362-20	DUP-2-20180111-01	Total Recoverable	Water	6020	382903
MB 400-382903/1-A ^5	Method Blank	Total Recoverable	Water	6020	382903
LCS 400-382903/2-A	Lab Control Sample	Total Recoverable	Water	6020	382903
400-148362-1 MS	GWA-2-20180110-01	Total Recoverable	Water	6020	382903
400-148362-1 MSD	GWA-2-20180110-01	Total Recoverable	Water	6020	382903

General Chemistry

Analysis Batch: 383145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148362-1	GWA-2-20180110-01	Total/NA	Water	SM 2540C	
400-148362-2	GWA-4R-20180110-01	Total/NA	Water	SM 2540C	
MB 400-383145/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-383145/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-148231-D-2 DU	Duplicate	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 383147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148362-3	GWA-3-20180110-01	Total/NA	Water	SM 2540C	
400-148362-4	GWA-5-20180110-01	Total/NA	Water	SM 2540C	
400-148362-5	GWA-13-20180110-01	Total/NA	Water	SM 2540C	
400-148362-19	DUP-1-20180111-01	Total/NA	Water	SM 2540C	
400-148362-20	DUP-2-20180111-01	Total/NA	Water	SM 2540C	
MB 400-383147/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-383147/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-148362-3 DU	GWA-3-20180110-01	Total/NA	Water	SM 2540C	

Analysis Batch: 383160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148362-6	GWA-15-20180111-01	Total/NA	Water	SM 2540C	
400-148362-7	GWA-14-20180111-01	Total/NA	Water	SM 2540C	
400-148362-8	GWC-17-20180111-01	Total/NA	Water	SM 2540C	
400-148362-9	GWA-16-20180111-01	Total/NA	Water	SM 2540C	
400-148362-10	GWC-12-20180111-01	Total/NA	Water	SM 2540C	
400-148362-11	GWC-1-20180111-01	Total/NA	Water	SM 2540C	
MB 400-383160/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-383160/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-148292-E-2 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 383190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-148362-12	GWC-10-20180111-01	Total/NA	Water	SM 2540C	
400-148362-13	GWC-21-20180111-01	Total/NA	Water	SM 2540C	
400-148362-14	GWC-11-20180111-01	Total/NA	Water	SM 2540C	
400-148362-15	FB-1-20180111-01	Total/NA	Water	SM 2540C	
400-148362-16	FERB-1-20180111-01	Total/NA	Water	SM 2540C	
400-148362-17	FERB-2-20180111-01	Total/NA	Water	SM 2540C	
400-148362-18	FB-2-20180111-01	Total/NA	Water	SM 2540C	
MB 400-383190/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-383190/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-148362-12 DU	GWC-10-20180111-01	Total/NA	Water	SM 2540C	

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-383202/4
Matrix: Water
Analysis Batch: 383202

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			01/18/18 11:44	1
Fluoride	<0.082		0.20	0.082	mg/L			01/18/18 11:44	1
Sulfate	<0.70		1.0	0.70	mg/L			01/18/18 11:44	1

Lab Sample ID: LCS 400-383202/5
Matrix: Water
Analysis Batch: 383202

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.59		mg/L		96	90 - 110
Fluoride	10.0	10.0		mg/L		100	90 - 110
Sulfate	10.0	10.1		mg/L		101	90 - 110

Lab Sample ID: LCSD 400-383202/9
Matrix: Water
Analysis Batch: 383202

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.56		mg/L		96	90 - 110	0	15
Fluoride	10.0	10.0		mg/L		100	90 - 110	0	15
Sulfate	10.0	10.2		mg/L		102	90 - 110	1	15

Lab Sample ID: 400-148362-6 MS
Matrix: Water
Analysis Batch: 383202

Client Sample ID: GWA-15-20180111-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.4		10.0	12.9		mg/L		95	80 - 120
Fluoride	<0.082		10.0	9.90		mg/L		99	80 - 120
Sulfate	<0.70		10.0	10.3		mg/L		103	80 - 120

Lab Sample ID: 400-148362-6 MSD
Matrix: Water
Analysis Batch: 383202

Client Sample ID: GWA-15-20180111-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.4		10.0	12.9		mg/L		95	80 - 120	0	20
Fluoride	<0.082		10.0	9.87		mg/L		99	80 - 120	0	20
Sulfate	<0.70		10.0	10.5		mg/L		105	80 - 120	1	20

Lab Sample ID: MB 400-383274/36
Matrix: Water
Analysis Batch: 383274

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			01/19/18 00:56	1
Fluoride	<0.082		0.20	0.082	mg/L			01/19/18 00:56	1
Sulfate	<0.70		1.0	0.70	mg/L			01/19/18 00:56	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 400-383274/37
Matrix: Water
Analysis Batch: 383274

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.59		mg/L		96	90 - 110
Fluoride	10.0	10.1		mg/L		101	90 - 110
Sulfate	10.0	10.1		mg/L		101	90 - 110

Lab Sample ID: LCSD 400-383274/38
Matrix: Water
Analysis Batch: 383274

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.60		mg/L		96	90 - 110	0	15
Fluoride	10.0	10.1		mg/L		101	90 - 110	0	15
Sulfate	10.0	10.2		mg/L		102	90 - 110	0	15

Lab Sample ID: 400-148362-12 MS
Matrix: Water
Analysis Batch: 383274

Client Sample ID: GWC-10-20180111-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.9		10.0	15.3		mg/L		95	80 - 120
Fluoride	0.15	J	10.0	10.1		mg/L		100	80 - 120
Sulfate	2.6		10.0	12.9		mg/L		103	80 - 120

Lab Sample ID: 400-148362-12 MSD
Matrix: Water
Analysis Batch: 383274

Client Sample ID: GWC-10-20180111-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5.9		10.0	15.3		mg/L		95	80 - 120	0	20
Fluoride	0.15	J	10.0	10.1		mg/L		99	80 - 120	0	20
Sulfate	2.6		10.0	13.0		mg/L		104	80 - 120	0	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-382903/1-A ^5
Matrix: Water
Analysis Batch: 383077

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 382903

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		01/16/18 09:27	01/16/18 14:31	5
Copper	<0.0021		0.0025	0.0021	mg/L		01/16/18 09:27	01/16/18 14:31	5
Boron	<0.021		0.050	0.021	mg/L		01/16/18 09:27	01/16/18 14:31	5
Nickel	<0.0018		0.0025	0.0018	mg/L		01/16/18 09:27	01/16/18 14:31	5
Barium	<0.00049		0.0025	0.00049	mg/L		01/16/18 09:27	01/16/18 14:31	5
Silver	<0.00011		0.0013	0.00011	mg/L		01/16/18 09:27	01/16/18 14:31	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 14:31	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		01/16/18 09:27	01/16/18 14:31	5
Calcium	<0.13		0.25	0.13	mg/L		01/16/18 09:27	01/16/18 14:31	5
Zinc	<0.0065		0.020	0.0065	mg/L		01/16/18 09:27	01/16/18 14:31	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		01/16/18 09:27	01/16/18 14:31	5

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 400-382903/1-A ^5
Matrix: Water
Analysis Batch: 383077

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 382903

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<0.0011		0.0025	0.0011	mg/L		01/16/18 09:27	01/16/18 14:31	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		01/16/18 09:27	01/16/18 14:31	5
Lead	<0.00035		0.0013	0.00035	mg/L		01/16/18 09:27	01/16/18 14:31	5
Antimony	<0.0010		0.0025	0.0010	mg/L		01/16/18 09:27	01/16/18 14:31	5
Selenium	<0.00024		0.0013	0.00024	mg/L		01/16/18 09:27	01/16/18 14:31	5
Thallium	<0.000085		0.00050	0.000085	mg/L		01/16/18 09:27	01/16/18 14:31	5

Lab Sample ID: LCS 400-382903/2-A
Matrix: Water
Analysis Batch: 383077

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 382903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0500	0.0518		mg/L		104	80 - 120
Copper	0.0500	0.0517		mg/L		103	80 - 120
Boron	0.100	0.101		mg/L		101	80 - 120
Nickel	0.0500	0.0544		mg/L		109	80 - 120
Barium	0.0500	0.0506		mg/L		101	80 - 120
Silver	0.0500	0.0492		mg/L		98	80 - 120
Beryllium	0.0500	0.0523		mg/L		105	80 - 120
Vanadium	0.0500	0.0503		mg/L		101	80 - 120
Calcium	5.00	5.40		mg/L		108	80 - 120
Zinc	0.0500	0.0516		mg/L		103	80 - 120
Cadmium	0.0500	0.0522		mg/L		104	80 - 120
Chromium	0.0500	0.0504		mg/L		101	80 - 120
Cobalt	0.0500	0.0515		mg/L		103	80 - 120
Lead	0.0500	0.0512		mg/L		102	80 - 120
Antimony	0.0500	0.0540		mg/L		108	80 - 120
Selenium	0.0500	0.0510		mg/L		102	80 - 120
Thallium	0.0100	0.0102		mg/L		102	80 - 120

Lab Sample ID: 400-148362-1 MS
Matrix: Water
Analysis Batch: 383077

Client Sample ID: GWA-2-20180110-01
Prep Type: Total Recoverable
Prep Batch: 382903

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	<0.00046		0.0500	0.0519		mg/L		104	75 - 125
Arsenic	<0.00046		0.0500	0.0519		mg/L		104	75 - 125
Copper	<0.0021		0.0500	0.0526		mg/L		105	75 - 125
Copper	<0.0021		0.0500	0.0526		mg/L		105	75 - 125
Boron	<0.021		0.100	0.116		mg/L		116	75 - 125
Boron	<0.021		0.100	0.116		mg/L		116	75 - 125
Nickel	0.0026		0.0500	0.0565		mg/L		108	75 - 125
Nickel	0.0026		0.0500	0.0565		mg/L		108	75 - 125
Barium	0.034		0.0500	0.0845		mg/L		101	75 - 125
Barium	0.034		0.0500	0.0845		mg/L		101	75 - 125
Silver	<0.00011		0.0500	0.0491		mg/L		98	75 - 125
Silver	<0.00011		0.0500	0.0491		mg/L		98	75 - 125
Beryllium	<0.00034		0.0500	0.0516		mg/L		103	75 - 125
Beryllium	<0.00034		0.0500	0.0516		mg/L		103	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-148362-1 MS
Matrix: Water
Analysis Batch: 383077

Client Sample ID: GWA-2-20180110-01
Prep Type: Total Recoverable
Prep Batch: 382903

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	<0.0014		0.0500	0.0498		mg/L		100	75 - 125
Vanadium	<0.0014		0.0500	0.0498		mg/L		100	75 - 125
Calcium	0.52		5.00	5.91		mg/L		108	75 - 125
Calcium	0.52		5.00	5.91		mg/L		108	75 - 125
Zinc	<0.0065		0.0500	0.0549		mg/L		110	75 - 125
Zinc	<0.0065		0.0500	0.0549		mg/L		110	75 - 125
Cadmium	<0.00034		0.0500	0.0521		mg/L		104	75 - 125
Cadmium	<0.00034		0.0500	0.0521		mg/L		104	75 - 125
Chromium	0.0014	J	0.0500	0.0525		mg/L		102	75 - 125
Chromium	0.0014	J	0.0500	0.0525		mg/L		102	75 - 125
Cobalt	0.0013	J	0.0500	0.0530		mg/L		104	75 - 125
Cobalt	0.0013	J	0.0500	0.0530		mg/L		104	75 - 125
Lead	<0.00035		0.0500	0.0525		mg/L		105	75 - 125
Lead	<0.00035		0.0500	0.0525		mg/L		105	75 - 125
Antimony	<0.0010		0.0500	0.0558		mg/L		112	75 - 125
Antimony	<0.0010		0.0500	0.0558		mg/L		112	75 - 125
Selenium	0.00052	J F1	0.0500	0.0541		mg/L		107	75 - 125
Selenium	0.00052	J F1	0.0500	0.0541		mg/L		107	75 - 125
Thallium	<0.000085		0.0100	0.0102		mg/L		102	75 - 125
Thallium	<0.000085		0.0100	0.0102		mg/L		102	75 - 125

Lab Sample ID: 400-148362-1 MSD
Matrix: Water
Analysis Batch: 383077

Client Sample ID: GWA-2-20180110-01
Prep Type: Total Recoverable
Prep Batch: 382903

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	<0.00046		0.0500	0.0524		mg/L		105	75 - 125	1	20
Arsenic	<0.00046		0.0500	0.0524		mg/L		105	75 - 125	1	20
Copper	<0.0021		0.0500	0.0528		mg/L		106	75 - 125	0	20
Copper	<0.0021		0.0500	0.0528		mg/L		106	75 - 125	0	20
Boron	<0.021		0.100	0.117		mg/L		117	75 - 125	1	20
Boron	<0.021		0.100	0.117		mg/L		117	75 - 125	1	20
Nickel	0.0026		0.0500	0.0571		mg/L		109	75 - 125	1	20
Nickel	0.0026		0.0500	0.0571		mg/L		109	75 - 125	1	20
Barium	0.034		0.0500	0.0852		mg/L		102	75 - 125	1	20
Barium	0.034		0.0500	0.0852		mg/L		102	75 - 125	1	20
Silver	<0.00011		0.0500	0.0488		mg/L		98	75 - 125	1	20
Silver	<0.00011		0.0500	0.0488		mg/L		98	75 - 125	1	20
Beryllium	<0.00034		0.0500	0.0524		mg/L		105	75 - 125	1	20
Beryllium	<0.00034		0.0500	0.0524		mg/L		105	75 - 125	1	20
Vanadium	<0.0014		0.0500	0.0505		mg/L		101	75 - 125	1	20
Vanadium	<0.0014		0.0500	0.0505		mg/L		101	75 - 125	1	20
Calcium	0.52		5.00	5.94		mg/L		108	75 - 125	0	20
Calcium	0.52		5.00	5.94		mg/L		108	75 - 125	0	20
Zinc	<0.0065		0.0500	0.0551		mg/L		110	75 - 125	0	20
Zinc	<0.0065		0.0500	0.0551		mg/L		110	75 - 125	0	20
Cadmium	<0.00034		0.0500	0.0510		mg/L		102	75 - 125	2	20
Cadmium	<0.00034		0.0500	0.0510		mg/L		102	75 - 125	2	20

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-148362-1 MSD
Matrix: Water
Analysis Batch: 383077

Client Sample ID: GWA-2-20180110-01
Prep Type: Total Recoverable
Prep Batch: 382903

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.0014	J	0.0500	0.0525		mg/L		102	75 - 125	0	20
Chromium	0.0014	J	0.0500	0.0525		mg/L		102	75 - 125	0	20
Cobalt	0.0013	J	0.0500	0.0536		mg/L		105	75 - 125	1	20
Cobalt	0.0013	J	0.0500	0.0536		mg/L		105	75 - 125	1	20
Lead	<0.00035		0.0500	0.0508		mg/L		102	75 - 125	3	20
Lead	<0.00035		0.0500	0.0508		mg/L		102	75 - 125	3	20
Antimony	<0.0010		0.0500	0.0537		mg/L		107	75 - 125	4	20
Antimony	<0.0010		0.0500	0.0537		mg/L		107	75 - 125	4	20
Selenium	0.00052	J F1	0.0500	0.0659	F1	mg/L		131	75 - 125	20	20
Selenium	0.00052	J F1	0.0500	0.0659	F1	mg/L		131	75 - 125	20	20
Thallium	<0.000085		0.0100	0.0100		mg/L		100	75 - 125	2	20
Thallium	<0.000085		0.0100	0.0100		mg/L		100	75 - 125	2	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-383145/1
Matrix: Water
Analysis Batch: 383145

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			01/17/18 19:26	1

Lab Sample ID: LCS 400-383145/2
Matrix: Water
Analysis Batch: 383145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	244		mg/L		83	78 - 122

Lab Sample ID: 400-148231-D-2 DU
Matrix: Water
Analysis Batch: 383145

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	92		90.0		mg/L		2	5

Lab Sample ID: MB 400-383147/1
Matrix: Water
Analysis Batch: 383147

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			01/17/18 19:52	1

Lab Sample ID: LCS 400-383147/2
Matrix: Water
Analysis Batch: 383147

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	282		mg/L		96	78 - 122

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 400-148362-3 DU
Matrix: Water
Analysis Batch: 383147

Client Sample ID: GWA-3-20180110-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	28			28.0		mg/L				0	5

Lab Sample ID: MB 400-383160/1
Matrix: Water
Analysis Batch: 383160

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			01/18/18 08:57	1

Lab Sample ID: LCS 400-383160/2
Matrix: Water
Analysis Batch: 383160

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			293	266		mg/L		91	78 - 122		

Lab Sample ID: 400-148292-E-2 DU
Matrix: Water
Analysis Batch: 383160

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	170			168		mg/L				1	5

Lab Sample ID: MB 400-383190/1
Matrix: Water
Analysis Batch: 383190

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			01/18/18 11:23	1

Lab Sample ID: LCS 400-383190/2
Matrix: Water
Analysis Batch: 383190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			293	312		mg/L		106	78 - 122		

Lab Sample ID: 400-148362-12 DU
Matrix: Water
Analysis Batch: 383190

Client Sample ID: GWC-10-20180111-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	150			150		mg/L				0	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Markevious Thomas, Aubrey Ellis, Hannah Beaugh	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No:
Client Contact: Lauren Petty	Phone:	E-Mail: cheyenne.whitmire@testamericainc.com		Page: 3 of 4
Company: Southern Company				Job #:
Address: 42 Inverness Center Parkway	Due Date Requested:			
City: Birmingham	TAT Requested (days):			
State, Zip: AL, 35242				
Phone: 205-992-5417	PO #:			
Email: LMPETTY@southernco.com	WO #:			
Project Name: Plant McIntosh - LF4	Project #:			
Site: State Permit	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

400-148362 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	TDS - SM 2540C ; Cl,F,SO4 - EPA 300	State Permit Metals and Part 257 Appendix III - EPA (6020) As, B, Ba, Be, Ca, Cd, Cr, Co, Cu, Pb, Ni, Sb, Se, Ag, Tl, V, Zn	Total Number of containers	Special Instructions/Note:
			Preservation Code:				I	D		
GWA-2-20180110-01	1/10/18	1227	G	W	N	N	X	X	2	
GWA-4R-20180110-01	1/10/18	1358	G	W	N	N	X	X	2	
GWA-3-20180110-01	1/10/18	1425	G	W	N	N	X	X	2	
GWA-5-20180110-01	1/10/18	1454	G	W	N	N	X	X	2	
GWA-13-20180110-01	1/10/18	1504	G	W	N	N	X	X	2	
GWA-15-20180111-01	1/11/18	0926	G	W	N	N	X	X	2	
GWA-14-20180111-01	1/11/18	0928	G	W	N	N	X	X	2	
GWC-17-20180111-01	1/11/18	1041	G	W	N	N	X	X	2	
GWA-16-20180111-01	1/11/18	1112	G	W	N	N	X	X	2	
GWC-12-20180111-01	1/11/18	1204	G	W	N	N	X	X	2	
GWC-1-20180111-01	1/11/18	1226	G	W	N	N	X	X	2	

Possible Hazard Identification
[X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		1-11-18 1707	ERM		1-11-18 1707	TA
2						
3		1/12/18 1800	ERM		1/15/18 0928	TA-PEN

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
	1.2/0.1/0.1/1.3/0.4/1.0/0.6/1.0/CF+0.4	1.6/0.5/0.5/1.7/0.8/1.4/1.0/1.9

IR-8 2.6/0.0/2.2/0.0/0.0/3.0 (TA-PEN)

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information

Client Contact: Lauren Petty	Sampler: Markevious Thomas, Aubrey Ellis, Hannah Beaugh	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No:
	Phone:	E-Mail: cheyenne.whitmire@testamericainc.com		Page: 4 of 4
Company: Southern Company		Analysis Requested		Job #:
Address: 42 Inverness Center Parkway	Due Date Requested:			
City: Birmingham	TAT Requested (days):			
State, Zip: AL, 35242				
Phone: 205-992-5417	PO #:			
Email: LMPETTY@southernco.com	WO #:			
Project Name: Plant McIntosh - LF4	Project #:			
Site: State Permit	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	TDS - SM 2540C ; Cl,F,SO4 - EPA 300	State Permit Metals and Part 257 Appendix III - EPA (6020) As, B, Ba, Be, Ca, Cd, Cr, Co, Cu, Pb, Ni, Sb, Se, Ag, Tl, V, Zn	Total Number of containers	Special Instructions/Note:
			Preservation Code:				I	D		
GWC-10-20180111-01	1/11/18	1354	G	W	N	N	X	X	2	
GWC-21-20180111-01	1/11/18	1514	G	W	N	N	X	X	2	
GWC-11-20180111-01	1/11/18	1510	G	W	N	N	X	X	2	
FB-1-20180111-01	1/11/18	1325	G	W	N	N	X	X	2	
FERB-1-20180111-01	1/11/18	1340	G	W	N	N	X	X	2	
FERB-2-20180111-01	1/11/18	1530	G	W	N	N	X	X	2	
FB-2-20180111-01	1/11/18	1505	G	W	N	N	X	X	2	
DUP-1-20180111-01	1/11/18	–	G	W	N	N	X	X	2	
DUP-2-20180111-01	1/11/18	–	G	W	N	N	X	X	2	

Possible Hazard Identification
[X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown [ ] Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-11-18 1747	EAU	[signature]	1-11-18 547pm	TA
[signature]	1/12/18 1800	TASAV	[signature]	1/15/18 0928	TA-PEN

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.: 1.2/0.1/0.1/1.3/0.4/~~+0.8~~/1.0 ~~/1.0 CF~~ 0.8/0.6

Cooler Temperature(s) °C and Other Remarks: 1.0 CF=0/1.6/0.5/0.5/1.7/0.8/1.4/1.0/1.9

IR-8 2.6/0.0/2.2/0.0/0.0/3.0(TA-PEN)

QAR 1/12/18

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-148362-1
SDG Number: McIntosh Ash Disposal Area 4

Login Number: 148362
List Number: 1
Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.6°C, 0.0°C, 2.2°C, 0.0°C, 0.0°C, 3.0°C IR-8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-148362-1
SDG: McIntosh Ash Disposal Area 4

Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Site: Georgia Power Plant, McIntosh Landfill #4
Laboratory: Test America, Pensacola, FL
Report Nos.: 400-148353-1 and 400-148362-1
Reviewer: Lorie MacKinnon/GEI Consultants
Date: March 11, 2018

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
GWA-2-20180110-01	400-148362-01	Metals, Anions, TDS
GWA-4R-20180110-01	400-148362-02	Metals, Anions, TDS
GWA-3-20180110-01	400-148362-03	Metals, Anions, TDS
GWA-5-20180110-01	400-148362-04	Metals, Anions, TDS
GWA-13-20180110-01	400-148362-05	Metals, Anions, TDS
GWA-15-20180111-01	400-148362-06	Metals, Anions, TDS
GWA-14-20180111-01	400-148362-07	Metals, Anions, TDS
GWC-17-20180111-01	400-148362-08	Metals, Anions, TDS
GWA-16-20180111-01	400-148362-09	Metals, Anions, TDS
GWC-12-20180111-01	400-148362-10	Metals, Anions, TDS
GWC-1-20180111-01	400-148362-11	Metals, Anions, TDS
GWC-10-20180111-01	400-148362-12	Metals, Anions, TDS
GWC-21-20180111-01	400-148362-13	Metals, Anions, TDS
GWC-11-20180111-01	400-148362-14	Metals, Anions, TDS
FB-1-20180111-01	400-148362-15	Metals, Anions, TDS
FERB-1-20180111-01	400-148362-16	Metals, Anions, TDS
FERB-2-20180111-01	400-148362-17	Metals, Anions, TDS
FB-2-20180111-01	400-148362-18	Metals, Anions, TDS
DUP-1-20180111-01	400-148362-19	Metals, Anions, TDS
DUP-2-20180111-01	400-148362-20	Metals, Anions, TDS
GWC-20-20180112-01	400-148353-01	Metals, Anions, TDS
GWC-9-20180112-01	400-148353-02	Metals, Anions, TDS
GWC-18-20180112-01	400-148353-03	Metals, Anions, TDS
GWC-23-20180112-01	400-148353-04	Metals, Anions, TDS
GWC-19-20180112-01	400-148353-05	Metals, Anions, TDS

QC Samples(s): Field/Equipment blanks: FB-1-201801111-01, FB-2-20180111-01, FERB-1-20180111-01, FERB-2-20180111-01
Field Duplicate pair: GWC-1/DUP-1-20180111-01
GWC-12/DUP-2-20180111-01

The above-listed aqueous samples and field blanks were collected on January 10, 11, and 12, 2018 and were analyzed for total recoverable metals by SW-846 method 6020, total dissolved solids (TDS) by Standard Methods SM 2540C, and anions (chloride, fluoride, and sulfate) by EPA method 300. The data were reviewed based on the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (USEPA-540-R-2017-001), as well as by the method referenced, and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results
- Quantitation Limits

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The level 2 (reduced deliverable) data packages were complete as received by the laboratory and included sample results, method blank, MS/MSD, laboratory duplicate, and LCS results.

Holding Times and Sample Preservation

All criteria were met.

Method and Field Blanks

Anions and TDS

Contamination was not detected in the associated method and field blanks.

Metals

Contaminants were not detected in the associated laboratory method blank samples. Contaminants were detected in the associated field and equipment blank samples. The following table summarizes the contamination and validation actions taken.

Analyte	Blank ID/ Associated Samples	Concentration	10x Action Level	Validation Actions
Selenium	FB-1-20180111-01: All samples	0.00024 J mg/L	0.0024 mg/L	Qualify the results for selenium in samples GWA-2, GWA-4R, GWA-3, and GWA-13 as nondetect (U) at the RL.
Barium	FERB-1-20180111-01: All samples	0.00066 J mg/L	0.0066 mg/L	Validation actions were not required.

Blank Actions:
If the sample result is < reporting limit (RL); report the result as nondetect (U) at the RL or reported value.
If the sample result is ≥ RL and <blank contamination detected; report the result as nondetect (U) at the reported value.
If the sample result is ≥ RL and < 10x Action Level; report the sample result as estimated (J); biased high.
If the sample result is > 10x Action Level; validation action is not required.

MS/MSD Results

MS/MSD analyses were performed on samples GWA-15 and GWC-10 for anions and sample GWA-2 for metals. The following tables list the analyte recoveries outside of control limits and the resulting actions.

GWA-2					
Analyte	**MS (%)**	**MSD (%)**	**RPD (%)**	**QC Limits**	**Validation Actions**
Selenium	-	131	-	75-125/20	Validation actions were not required as results for selenium were nondetect or qualified nondetect due to blank results and therefore not affected by the potential high bias.
- criterion met					

Laboratory Duplicate Results

A laboratory duplicate analysis was performed on sample GWC-10 for total dissolved solids. All criteria were met.

LCS Results

All criteria were met.

Field Duplicate Results

Samples GWC-1-20180111-01 and DUP-1-20180111-01 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in

the field duplicate pair, which were within the acceptance criteria with the exception of total dissolved solids.

Analyte	GWC-1-20180111-01 (mg/L)	DUP-1-20180111-01 (mg/L)	RPD (%)
Chloride	7.5	7.5	0
Sulfate	1.6	1.5	6.5
Barium	0.046	0.046	0
Calcium	2.4	2.4	0
Cobalt	0.0019 J	0.0019 J	0
Total dissolved solids	100	3.4 U	**NC, Not within RL**
NC – Not calculable Criteria: When both results are ≥5x the RL, RPDs must be <30%. When results are < 5x the RL, the absolute difference between the original and field duplicate must be < RL			

Samples GWC-12-20180111-01 and DUP-2-20180111-01 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair, which were within the acceptance criteria with the exception of total dissolved solids.

Analyte	GWC-12-20180111-01 (mg/L)	DUP-2-20180111-01 (mg/L)	RPD (%)
Chloride	3.4	3.4	0
Barium	0.010	0.011	6.5
Calcium	0.78	0.74	5.3
Chromium	0.0016 J	0.0017 J	6.1
Cobalt	0.00060 J	0.00056 J	6.9
Total dissolved solids	34	80	**80.7**
NC – Not calculable Criteria: When both results are ≥5x the RL, RPDs must be <30%. When results are < 5x the RL, the absolute difference between the original and field duplicate must be < RL			

Due to precision exceedance for total dissolved solids in both field duplicate pairs, professional judgment was taken to estimate total dissolved solids in all project samples. The direction of the bias cannot be determined from this nonconformance.

Quantitation Limits

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL). These results were qualified as estimated (J) by the laboratory.

Five-fold dilutions were performed for all metals samples.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

NJ - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-156322-2
TestAmerica SDG: Ash Disposal Area 4 - Compliance
Client Project/Site: CCR - Plant McIntosh
Revision: 1

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Cheyenne Whitmire

Authorized for release by:
8/14/2018 2:52:40 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.
Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-156322-2
SDG: Ash Disposal Area 4 - Compliance

Job ID: 400-156322-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-156322-2

Metals
Method(s) 6020: The post digestion spike % recovery for Zinc associated with batch 404861 was outside of control limits.

Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 404697 and analytical batch 404861 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6020: The continuing calibration verification (CCV) and continuing calibration blank (CCB) associated with batch 404861 recovered above the upper control limit for Boron. The high concentration of Boron was caused by carryover from the samples preceding the CCV and CCB. The Method Blank and Laboratory Control Spike were not affected and meet acceptance criteria, therefore the data have been reported.

Comments
Report revised to include all coc's. Original report did not have all 3 coc's and did not report all tests associated with them.

Detection Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-156322-2
SDG: Ash Disposal Area 4 - Compliance

Client Sample ID: GWC-4A — Lab Sample ID: 400-156322-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.2		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	14		1.0	0.70	mg/L	1		300.0	Total/NA
Nickel	0.0030		0.0025	0.0018	mg/L	5		6020	Total Recoverable
Barium	0.029		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	1.0		0.25	0.13	mg/L	5		6020	Total Recoverable
Zinc	0.0098	J	0.020	0.0065	mg/L	5		6020	Total Recoverable
Cobalt	0.0044		0.0025	0.00040	mg/L	5		6020	Total Recoverable

Client Sample ID: GWA-2 — Lab Sample ID: 400-156322-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.0		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.035		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.50		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0011	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.0013	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	16		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-3 — Lab Sample ID: 400-156322-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.3		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.015		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.81		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0011	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	12		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-5 — Lab Sample ID: 400-156322-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.5		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.044		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	3.0		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.00071	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	22		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-13 — Lab Sample ID: 400-156322-5

This Detection Summary does not include radiochemical test results.

Client Sample ID: GWA-13 (Continued) — Lab Sample ID: 400-156322-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.015		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.32		0.25	0.13	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	28		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-14 — Lab Sample ID: 400-156322-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.2		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.012		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.47		0.25	0.13	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	20		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWA-16 — Lab Sample ID: 400-156322-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.7		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.023		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.45		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0012	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.00043	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	24		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-15 — Lab Sample ID: 400-156322-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.8		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.025		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.53		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.00040	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable

Client Sample ID: GWC-17 — Lab Sample ID: 400-156322-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.4		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.13	J	0.20	0.082	mg/L	1		300.0	Total/NA
Barium	0.017		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Beryllium	0.00065	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Calcium	2.1		0.25	0.13	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GWC-17 (Continued) — Lab Sample ID: 400-156322-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.00040	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Chromium	0.0025		0.0025	0.0011	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	22		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-19 — Lab Sample ID: 400-156322-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.1		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.091	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	1.4		1.0	0.70	mg/L	1		300.0	Total/NA
Nickel	0.0018	J	0.0025	0.0018	mg/L	5		6020	Total Recoverable
Barium	0.018		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	10		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0011	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	38		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-18 — Lab Sample ID: 400-156322-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.9		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.59		0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	5.0		1.0	0.70	mg/L	1		300.0	Total/NA
Arsenic	0.00070	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.013		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Vanadium	0.0016	J	0.0025	0.0014	mg/L	5		6020	Total Recoverable
Calcium	12		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0022	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Selenium	0.00044	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Thallium	0.000095	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	16		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-20 — Lab Sample ID: 400-156322-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.9		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	0.90	J	1.0	0.70	mg/L	1		300.0	Total/NA
Barium	0.021		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	1.7		0.25	0.13	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GWC-20 (Continued) — Lab Sample ID: 400-156322-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0013	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	32		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: FERB-02 — Lab Sample ID: 400-156322-13

No Detections.

Client Sample ID: FB-03 — Lab Sample ID: 400-156322-14

No Detections.

Client Sample ID: GWC-21 — Lab Sample ID: 400-156322-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.4		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.017		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	1.1		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.0012	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Mercury	0.00077		0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	52		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-03 — Lab Sample ID: 400-156322-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.9		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.57		0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	5.4		1.0	0.70	mg/L	1		300.0	Total/NA
Arsenic	0.00078	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.013		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Vanadium	0.0019	J	0.0025	0.0014	mg/L	5		6020	Total Recoverable
Calcium	12		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0021	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Thallium	0.000090	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	100		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-9 — Lab Sample ID: 400-156322-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.4		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.031		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.49		0.25	0.13	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GWC-9 (Continued) — Lab Sample ID: 400-156322-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.00072	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	42		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-12 — Lab Sample ID: 400-156322-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.7		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.011		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.67		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0015	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Cobalt	0.00056	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	26		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-11 — Lab Sample ID: 400-156322-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.3		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.25		0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	5.9		1.0	0.70	mg/L	1		300.0	Total/NA
Arsenic	0.0010	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.016		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	13		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0023	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Selenium	0.00025	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	94		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-1 — Lab Sample ID: 400-156322-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.0		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	1.1		1.0	0.70	mg/L	1		300.0	Total/NA
Barium	0.045		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	1.8		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.0018	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	24		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-10 — Lab Sample ID: 400-156322-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.1		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.13	J	0.20	0.082	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GWC-10 (Continued) — Lab Sample ID: 400-156322-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	5.0		1.0	0.70	mg/L	1		300.0	Total/NA
Boron	0.054		0.050	0.021	mg/L	5		6020	Total Recoverable
Barium	0.024		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	27		0.25	0.13	mg/L	5		6020	Total Recoverable
Chromium	0.0017	J	0.0025	0.0011	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	140		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: GWC-23 — Lab Sample ID: 400-156322-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.9		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	2.0		1.0	0.70	mg/L	1		300.0	Total/NA
Nickel	0.0026		0.0025	0.0018	mg/L	5		6020	Total Recoverable
Barium	0.037		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	1.2		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.0077		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Thallium	0.00010	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	40		5.0	3.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: FB-04 — Lab Sample ID: 400-156322-23

No Detections.

Client Sample ID: FERB-03 — Lab Sample ID: 400-156322-24

No Detections.

Client Sample ID: FERB-04 — Lab Sample ID: 400-156322-25

No Detections.

Client Sample ID: DUP-04 — Lab Sample ID: 400-156322-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.5		1.0	0.89	mg/L	1		300.0	Total/NA
Barium	0.032		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	0.45		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.00073	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	48		5.0	3.4	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-156322-2
SDG: Ash Disposal Area 4 - Compliance

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN
7470A	Preparation, Mercury	SW846	TAL PEN

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-156322-2
SDG: Ash Disposal Area 4 - Compliance

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-156322-1	GWC-4A	Water	07/11/18 11:00	07/12/18 09:35
400-156322-2	GWA-2	Water	07/11/18 11:20	07/12/18 09:35
400-156322-3	GWA-3	Water	07/11/18 11:27	07/12/18 09:35
400-156322-4	GWC-5	Water	07/11/18 12:29	07/12/18 09:35
400-156322-5	GWA-13	Water	07/11/18 12:35	07/12/18 09:35
400-156322-6	GWA-14	Water	07/11/18 12:58	07/12/18 09:35
400-156322-7	GWA-16	Water	07/11/18 13:46	07/12/18 09:35
400-156322-8	GWC-15	Water	07/11/18 13:55	07/12/18 09:35
400-156322-9	GWC-17	Water	07/11/18 14:35	07/12/18 09:35
400-156322-10	GWC-19	Water	07/11/18 15:10	07/12/18 09:35
400-156322-11	GWC-18	Water	07/11/18 15:20	07/12/18 09:35
400-156322-12	GWC-20	Water	07/11/18 16:00	07/12/18 09:35
400-156322-13	FERB-02	Water	07/11/18 16:25	07/12/18 09:35
400-156322-14	FB-03	Water	07/11/18 16:30	07/12/18 09:35
400-156322-15	GWC-21	Water	07/11/18 16:35	07/12/18 09:35
400-156322-16	DUP-03	Water	07/11/18 00:00	07/12/18 09:35
400-156322-17	GWC-9	Water	07/12/18 09:25	07/13/18 09:30
400-156322-18	GWC-12	Water	07/12/18 09:22	07/13/18 09:30
400-156322-19	GWC-11	Water	07/12/18 09:40	07/13/18 09:30
400-156322-20	GWC-1	Water	07/12/18 10:35	07/13/18 09:30
400-156322-21	GWC-10	Water	07/12/18 10:45	07/13/18 09:30
400-156322-22	GWC-23	Water	07/12/18 11:20	07/13/18 09:30
400-156322-23	FB-04	Water	07/12/18 11:24	07/13/18 09:30
400-156322-24	FERB-03	Water	07/12/18 11:30	07/13/18 09:30
400-156322-25	FERB-04	Water	07/12/18 11:40	07/13/18 09:30
400-156322-26	DUP-04	Water	07/12/18 00:00	07/13/18 09:30

Client Sample ID: GWC-4A

Date Collected: 07/11/18 11:00
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-1

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.2**		1.0	0.89	mg/L			07/24/18 03:42	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 03:42	1
Sulfate	**14**		1.0	0.70	mg/L			07/24/18 03:42	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 16:18	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 16:18	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 16:18	5
Nickel	**0.0030**		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 16:18	5
Barium	**0.029**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 16:18	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 16:18	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:18	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 16:18	5
Calcium	**1.0**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 16:18	5
Zinc	**0.0098**	**J**	0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 16:18	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:18	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 16:18	5
Cobalt	**0.0044**		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 16:18	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 16:18	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 16:18	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 16:18	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 16:18	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/18/18 07:54	1

Client Sample ID: GWA-2

Date Collected: 07/11/18 11:20
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-2

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.0**		1.0	0.89	mg/L			07/24/18 04:05	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 04:05	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 04:05	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 16:24	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 16:24	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 16:24	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 16:24	5
Barium	**0.035**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 16:24	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 16:24	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:24	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 16:24	5
Calcium	**0.50**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 16:24	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 16:24	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:24	5
Chromium	**0.0011**	**J**	0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 16:24	5
Cobalt	**0.0013**	**J**	0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 16:24	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 16:24	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 16:24	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 16:24	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 16:24	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**16**		5.0	3.4	mg/L			07/18/18 07:54	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-156322-2
SDG: Ash Disposal Area 4 - Compliance

Client Sample ID: GWA-3

Date Collected: 07/11/18 11:27
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-3

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.3**		1.0	0.89	mg/L			07/24/18 04:28	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 04:28	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 04:28	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 16:28	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 16:28	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 16:28	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 16:28	5
Barium	**0.015**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 16:28	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 16:28	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:28	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 16:28	5
Calcium	**0.81**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 16:28	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 16:28	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:28	5
Chromium	**0.0011**	**J**	0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 16:28	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 16:28	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 16:28	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 16:28	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 16:28	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 16:28	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**12**		5.0	3.4	mg/L			07/18/18 07:54	1

Client Sample ID: GWC-5

Date Collected: 07/11/18 12:29
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-4

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.5**		1.0	0.89	mg/L			07/24/18 04:51	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 04:51	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 04:51	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 16:33	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 16:33	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 16:33	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 16:33	5
Barium	**0.044**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 16:33	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 16:33	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:33	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 16:33	5
Calcium	**3.0**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 16:33	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 16:33	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:33	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 16:33	5
Cobalt	**0.00071**	**J**	0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 16:33	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 16:33	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 16:33	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 16:33	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 16:33	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**22**		5.0	3.4	mg/L			07/18/18 07:54	1

Client Sample ID: GWA-13

Date Collected: 07/11/18 12:35
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-5

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.4**		1.0	0.89	mg/L			07/24/18 05:14	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 05:14	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 05:14	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 16:37	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 16:37	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 16:37	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 16:37	5
Barium	**0.015**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 16:37	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 16:37	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:37	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 16:37	5
Calcium	**0.32**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 16:37	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 16:37	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:37	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 16:37	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 16:37	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 16:37	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 16:37	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 16:37	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 16:37	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**28**		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: GWA-14

Date Collected: 07/11/18 12:58
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-6

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.2**		1.0	0.89	mg/L			07/24/18 05:36	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 05:36	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 05:36	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 16:42	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 16:42	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 16:42	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 16:42	5
Barium	**0.012**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 16:42	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 16:42	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:42	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 16:42	5
Calcium	**0.47**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 16:42	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 16:42	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:42	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 16:42	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 16:42	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 16:42	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 16:42	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 16:42	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 16:42	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**20**		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: GWA-16

Date Collected: 07/11/18 13:46
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-7

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.7**		1.0	0.89	mg/L			07/24/18 05:59	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 05:59	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 05:59	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 16:46	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 16:46	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 16:46	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 16:46	5
Barium	**0.023**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 16:46	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 16:46	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:46	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 16:46	5
Calcium	**0.45**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 16:46	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 16:46	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:46	5
Chromium	**0.0012**	**J**	0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 16:46	5
Cobalt	**0.00043**	**J**	0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 16:46	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 16:46	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 16:46	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 16:46	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 16:46	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**24**		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: GWC-15

Date Collected: 07/11/18 13:55
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-8

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.8**		1.0	0.89	mg/L			07/24/18 08:16	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 08:16	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 08:16	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 16:51	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 16:51	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 16:51	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 16:51	5
Barium	**0.025**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 16:51	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 16:51	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:51	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 16:51	5
Calcium	**0.53**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 16:51	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 16:51	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:51	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 16:51	5
Cobalt	**0.00040**	**J**	0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 16:51	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 16:51	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 16:51	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 16:51	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 16:51	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: GWC-17

Date Collected: 07/11/18 14:35
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-9

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.4**		1.0	0.89	mg/L			07/24/18 09:25	1
Fluoride	**0.13**	**J**	0.20	0.082	mg/L			07/24/18 09:25	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 09:25	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 16:55	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 16:55	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 16:55	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 16:55	5
Barium	**0.017**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 16:55	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 16:55	5
Beryllium	**0.00065**	**J**	0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:55	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 16:55	5
Calcium	**2.1**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 16:55	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 16:55	5
Cadmium	**0.00040**	**J**	0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 16:55	5
Chromium	**0.0025**		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 16:55	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 16:55	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 16:55	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 16:55	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 16:55	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 16:55	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**22**		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: GWC-19

Date Collected: 07/11/18 15:10
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-10

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.1**		1.0	0.89	mg/L			07/24/18 09:48	1
Fluoride	**0.091**	**J**	0.20	0.082	mg/L			07/24/18 09:48	1
Sulfate	**1.4**		1.0	0.70	mg/L			07/24/18 09:48	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 17:00	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 17:00	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 17:00	5
Nickel	**0.0018**	**J**	0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 17:00	5
Barium	**0.018**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 17:00	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 17:00	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:00	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 17:00	5
Calcium	**10**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 17:00	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 17:00	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:00	5
Chromium	**0.0011**	**J**	0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 17:00	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 17:00	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 17:00	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 17:00	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 17:00	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 17:00	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**38**		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: GWC-18

Date Collected: 07/11/18 15:20
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-11

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.9**		1.0	0.89	mg/L			07/24/18 10:10	1
Fluoride	**0.59**		0.20	0.082	mg/L			07/24/18 10:10	1
Sulfate	**5.0**		1.0	0.70	mg/L			07/24/18 10:10	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00070**	**J**	0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 17:27	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 17:27	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 17:27	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 17:27	5
Barium	**0.013**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 17:27	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 17:27	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:27	5
Vanadium	**0.0016**	**J**	0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 17:27	5
Calcium	**12**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 17:27	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 17:27	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:27	5
Chromium	**0.0022**	**J**	0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 17:27	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 17:27	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 17:27	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 17:27	5
Selenium	**0.00044**	**J**	0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 17:27	5
Thallium	**0.000095**	**J**	0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 17:27	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**16**		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: GWC-20

Date Collected: 07/11/18 16:00
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-12

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.9**		1.0	0.89	mg/L			07/24/18 17:15	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 17:15	1
Sulfate	**0.90**	**J**	1.0	0.70	mg/L			07/24/18 17:15	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 17:32	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 17:32	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 17:32	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 17:32	5
Barium	**0.021**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 17:32	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 17:32	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:32	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 17:32	5
Calcium	**1.7**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 17:32	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 17:32	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:32	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 17:32	5
Cobalt	**0.0013**	**J**	0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 17:32	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 17:32	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 17:32	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 17:32	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 17:32	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**32**		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: FERB-02

Date Collected: 07/11/18 16:25
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-13

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			07/24/18 12:36	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 12:36	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 12:36	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 17:36	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 17:36	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 17:36	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 17:36	5
Barium	<0.00049		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 17:36	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 17:36	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:36	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 17:36	5
Calcium	<0.13		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 17:36	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 17:36	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:36	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 17:36	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 17:36	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 17:36	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 17:36	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 17:36	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 17:36	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: FB-03

Date Collected: 07/11/18 16:30
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-14

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			07/24/18 12:59	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 12:59	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 12:59	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 17:41	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 17:41	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 17:41	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 17:41	5
Barium	<0.00049		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 17:41	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 17:41	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:41	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 17:41	5
Calcium	<0.13		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 17:41	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 17:41	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:41	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 17:41	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 17:41	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 17:41	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 17:41	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 17:41	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 17:41	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: GWC-21

Date Collected: 07/11/18 16:35
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-15

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.4**		1.0	0.89	mg/L			07/24/18 13:21	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 13:21	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 13:21	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 17:45	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 17:45	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 17:45	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 17:45	5
Barium	**0.017**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 17:45	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 17:45	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:45	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 17:45	5
Calcium	**1.1**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 17:45	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 17:45	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:45	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 17:45	5
Cobalt	**0.0012**	**J**	0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 17:45	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 17:45	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 17:45	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 17:45	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 17:45	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00077**		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**52**		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: DUP-03

Date Collected: 07/11/18 00:00
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-16

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.9**		1.0	0.89	mg/L			07/24/18 14:32	1
Fluoride	**0.57**		0.20	0.082	mg/L			07/24/18 14:32	1
Sulfate	**5.4**		1.0	0.70	mg/L			07/24/18 14:32	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00078**	**J**	0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 17:50	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 17:50	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 17:50	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 17:50	5
Barium	**0.013**		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 17:50	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 17:50	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:50	5
Vanadium	**0.0019**	**J**	0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 17:50	5
Calcium	**12**		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 17:50	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 17:50	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 17:50	5
Chromium	**0.0021**	**J**	0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 17:50	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 17:50	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 17:50	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 17:50	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 17:50	5
Thallium	**0.000090**	**J**	0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 17:50	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 19:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**100**		5.0	3.4	mg/L			07/17/18 12:57	1

Client Sample ID: GWC-9

Date Collected: 07/12/18 09:25
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-17

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.4**		1.0	0.89	mg/L			07/24/18 14:58	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 14:58	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 14:58	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/17/18 11:03	07/17/18 21:19	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:03	07/17/18 21:19	5
Boron	<0.021		0.050	0.021	mg/L		07/17/18 11:03	07/17/18 21:19	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/17/18 11:03	07/17/18 21:19	5
Barium	**0.031**		0.0025	0.00049	mg/L		07/17/18 11:03	07/17/18 21:19	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:03	07/17/18 21:19	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:19	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:03	07/17/18 21:19	5
Calcium	**0.49**		0.25	0.13	mg/L		07/17/18 11:03	07/17/18 21:19	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:03	07/17/18 21:19	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:19	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/17/18 11:03	07/17/18 21:19	5
Cobalt	**0.00072**	**J**	0.0025	0.00040	mg/L		07/17/18 11:03	07/17/18 21:19	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:03	07/17/18 21:19	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:03	07/17/18 21:19	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/17/18 11:03	07/17/18 21:19	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/17/18 11:03	07/17/18 21:19	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 19:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**42**		5.0	3.4	mg/L			07/18/18 11:12	1

Client Sample ID: GWC-12

Date Collected: 07/12/18 09:22
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-18

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.7**		1.0	0.89	mg/L			07/24/18 13:44	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 13:44	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 13:44	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/17/18 11:03	07/17/18 21:23	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:03	07/17/18 21:23	5
Boron	<0.021		0.050	0.021	mg/L		07/17/18 11:03	07/17/18 21:23	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/17/18 11:03	07/17/18 21:23	5
Barium	**0.011**		0.0025	0.00049	mg/L		07/17/18 11:03	07/17/18 21:23	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:03	07/17/18 21:23	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:23	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:03	07/17/18 21:23	5
Calcium	**0.67**		0.25	0.13	mg/L		07/17/18 11:03	07/17/18 21:23	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:03	07/17/18 21:23	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:23	5
Chromium	**0.0015**	**J**	0.0025	0.0011	mg/L		07/17/18 11:03	07/17/18 21:23	5
Cobalt	**0.00056**	**J**	0.0025	0.00040	mg/L		07/17/18 11:03	07/17/18 21:23	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:03	07/17/18 21:23	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:03	07/17/18 21:23	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/17/18 11:03	07/17/18 21:23	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/17/18 11:03	07/17/18 21:23	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 19:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**26**		5.0	3.4	mg/L			07/18/18 11:12	1

Client Sample ID: GWC-11

Date Collected: 07/12/18 09:40
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-19

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.3**		1.0	0.89	mg/L			07/24/18 15:21	1
Fluoride	**0.25**		0.20	0.082	mg/L			07/24/18 15:21	1
Sulfate	**5.9**		1.0	0.70	mg/L			07/24/18 15:21	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0010**	**J**	0.0013	0.00046	mg/L		07/17/18 11:03	07/17/18 21:28	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:03	07/17/18 21:28	5
Boron	<0.021		0.050	0.021	mg/L		07/17/18 11:03	07/17/18 21:28	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/17/18 11:03	07/17/18 21:28	5
Barium	**0.016**		0.0025	0.00049	mg/L		07/17/18 11:03	07/17/18 21:28	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:03	07/17/18 21:28	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:28	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:03	07/17/18 21:28	5
Calcium	**13**		0.25	0.13	mg/L		07/17/18 11:03	07/17/18 21:28	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:03	07/17/18 21:28	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:28	5
Chromium	**0.0023**	**J**	0.0025	0.0011	mg/L		07/17/18 11:03	07/17/18 21:28	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/17/18 11:03	07/17/18 21:28	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:03	07/17/18 21:28	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:03	07/17/18 21:28	5
Selenium	**0.00025**	**J**	0.0013	0.00024	mg/L		07/17/18 11:03	07/17/18 21:28	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/17/18 11:03	07/17/18 21:28	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 19:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**94**		5.0	3.4	mg/L			07/19/18 14:24	1

Client Sample ID: GWC-1

Date Collected: 07/12/18 10:35
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-20

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.0**		1.0	0.89	mg/L			07/24/18 16:29	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 16:29	1
Sulfate	**1.1**		1.0	0.70	mg/L			07/24/18 16:29	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/17/18 11:03	07/17/18 21:32	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:03	07/17/18 21:32	5
Boron	<0.021		0.050	0.021	mg/L		07/17/18 11:03	07/17/18 21:32	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/17/18 11:03	07/17/18 21:32	5
Barium	**0.045**		0.0025	0.00049	mg/L		07/17/18 11:03	07/17/18 21:32	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:03	07/17/18 21:32	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:32	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:03	07/17/18 21:32	5
Calcium	**1.8**		0.25	0.13	mg/L		07/17/18 11:03	07/17/18 21:32	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:03	07/17/18 21:32	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:32	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/17/18 11:03	07/17/18 21:32	5
Cobalt	**0.0018**	**J**	0.0025	0.00040	mg/L		07/17/18 11:03	07/17/18 21:32	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:03	07/17/18 21:32	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:03	07/17/18 21:32	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/17/18 11:03	07/17/18 21:32	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/17/18 11:03	07/17/18 21:32	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 19:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**24**		5.0	3.4	mg/L			07/19/18 14:24	1

Client Sample ID: GWC-10

Date Collected: 07/12/18 10:45
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-21

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.1**		1.0	0.89	mg/L			07/24/18 16:52	1
Fluoride	**0.13**	**J**	0.20	0.082	mg/L			07/24/18 16:52	1
Sulfate	**5.0**		1.0	0.70	mg/L			07/24/18 16:52	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/17/18 11:03	07/17/18 21:37	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:03	07/17/18 21:37	5
Boron	**0.054**		0.050	0.021	mg/L		07/17/18 11:03	07/17/18 21:37	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/17/18 11:03	07/17/18 21:37	5
Barium	**0.024**		0.0025	0.00049	mg/L		07/17/18 11:03	07/17/18 21:37	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:03	07/17/18 21:37	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:37	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:03	07/17/18 21:37	5
Calcium	**27**		0.25	0.13	mg/L		07/17/18 11:03	07/17/18 21:37	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:03	07/17/18 21:37	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:37	5
Chromium	**0.0017**	**J**	0.0025	0.0011	mg/L		07/17/18 11:03	07/17/18 21:37	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/17/18 11:03	07/17/18 21:37	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:03	07/17/18 21:37	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:03	07/17/18 21:37	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/17/18 11:03	07/17/18 21:37	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/17/18 11:03	07/17/18 21:37	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 19:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**140**		5.0	3.4	mg/L			07/18/18 18:45	1

Client Sample ID: GWC-23

Date Collected: 07/12/18 11:20
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-22

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.9**		1.0	0.89	mg/L			07/24/18 17:38	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 17:38	1
Sulfate	**2.0**		1.0	0.70	mg/L			07/24/18 17:38	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/17/18 11:03	07/17/18 21:42	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:03	07/17/18 21:42	5
Boron	<0.021		0.050	0.021	mg/L		07/17/18 11:03	07/17/18 21:42	5
Nickel	**0.0026**		0.0025	0.0018	mg/L		07/17/18 11:03	07/17/18 21:42	5
Barium	**0.037**		0.0025	0.00049	mg/L		07/17/18 11:03	07/17/18 21:42	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:03	07/17/18 21:42	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:42	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:03	07/17/18 21:42	5
Calcium	**1.2**		0.25	0.13	mg/L		07/17/18 11:03	07/17/18 21:42	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:03	07/17/18 21:42	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:42	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/17/18 11:03	07/17/18 21:42	5
Cobalt	**0.0077**		0.0025	0.00040	mg/L		07/17/18 11:03	07/17/18 21:42	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:03	07/17/18 21:42	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:03	07/17/18 21:42	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/17/18 11:03	07/17/18 21:42	5
Thallium	**0.00010**	**J**	0.00050	0.000085	mg/L		07/17/18 11:03	07/17/18 21:42	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 19:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**40**		5.0	3.4	mg/L			07/19/18 14:24	1

Client Sample ID: FB-04

Date Collected: 07/12/18 11:24
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-23

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			07/24/18 18:03	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 18:03	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 18:03	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/17/18 11:03	07/17/18 21:46	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:03	07/17/18 21:46	5
Boron	<0.021		0.050	0.021	mg/L		07/17/18 11:03	07/17/18 21:46	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/17/18 11:03	07/17/18 21:46	5
Barium	<0.00049		0.0025	0.00049	mg/L		07/17/18 11:03	07/17/18 21:46	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:03	07/17/18 21:46	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:46	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:03	07/17/18 21:46	5
Calcium	<0.13		0.25	0.13	mg/L		07/17/18 11:03	07/17/18 21:46	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:03	07/17/18 21:46	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:46	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/17/18 11:03	07/17/18 21:46	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/17/18 11:03	07/17/18 21:46	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:03	07/17/18 21:46	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:03	07/17/18 21:46	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/17/18 11:03	07/17/18 21:46	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/17/18 11:03	07/17/18 21:46	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 19:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/19/18 14:24	1

Client Sample ID: FERB-03

Date Collected: 07/12/18 11:30
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-24

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			07/24/18 18:28	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 18:28	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 18:28	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/17/18 11:03	07/17/18 21:50	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:03	07/17/18 21:50	5
Boron	<0.021		0.050	0.021	mg/L		07/17/18 11:03	07/17/18 21:50	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/17/18 11:03	07/17/18 21:50	5
Barium	<0.00049		0.0025	0.00049	mg/L		07/17/18 11:03	07/17/18 21:50	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:03	07/17/18 21:50	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:50	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:03	07/17/18 21:50	5
Calcium	<0.13		0.25	0.13	mg/L		07/17/18 11:03	07/17/18 21:50	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:03	07/17/18 21:50	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:50	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/17/18 11:03	07/17/18 21:50	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/17/18 11:03	07/17/18 21:50	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:03	07/17/18 21:50	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:03	07/17/18 21:50	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/17/18 11:03	07/17/18 21:50	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/17/18 11:03	07/17/18 21:50	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 19:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/19/18 14:24	1

Client Sample ID: FERB-04

Date Collected: 07/12/18 11:40
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-25

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			07/24/18 22:52	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 22:52	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 22:52	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/17/18 11:03	07/17/18 21:55	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:03	07/17/18 21:55	5
Boron	<0.021		0.050	0.021	mg/L		07/17/18 11:03	07/17/18 21:55	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/17/18 11:03	07/17/18 21:55	5
Barium	<0.00049		0.0025	0.00049	mg/L		07/17/18 11:03	07/17/18 21:55	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:03	07/17/18 21:55	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:55	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:03	07/17/18 21:55	5
Calcium	<0.13		0.25	0.13	mg/L		07/17/18 11:03	07/17/18 21:55	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:03	07/17/18 21:55	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 21:55	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/17/18 11:03	07/17/18 21:55	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/17/18 11:03	07/17/18 21:55	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:03	07/17/18 21:55	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:03	07/17/18 21:55	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/17/18 11:03	07/17/18 21:55	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/17/18 11:03	07/17/18 21:55	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 19:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/19/18 14:24	1

Client Sample ID: DUP-04

Date Collected: 07/12/18 00:00
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-26

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.5**		1.0	0.89	mg/L			07/24/18 23:14	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 23:14	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 23:14	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/17/18 11:04	07/17/18 22:00	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:04	07/17/18 22:00	5
Boron	<0.021		0.050	0.021	mg/L		07/17/18 11:04	07/17/18 22:00	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/17/18 11:04	07/17/18 22:00	5
Barium	**0.032**		0.0025	0.00049	mg/L		07/17/18 11:04	07/17/18 22:00	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:04	07/17/18 22:00	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:04	07/17/18 22:00	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:04	07/17/18 22:00	5
Calcium	**0.45**		0.25	0.13	mg/L		07/17/18 11:04	07/17/18 22:00	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:04	07/17/18 22:00	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:04	07/17/18 22:00	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/17/18 11:04	07/17/18 22:00	5
Cobalt	**0.00073**	**J**	0.0025	0.00040	mg/L		07/17/18 11:04	07/17/18 22:00	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:04	07/17/18 22:00	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:04	07/17/18 22:00	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/17/18 11:04	07/17/18 22:00	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/17/18 11:04	07/17/18 22:00	5

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 19:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**48**		5.0	3.4	mg/L			07/19/18 14:24	1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
E	Result exceeded calibration range.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-156322-2
SDG: Ash Disposal Area 4 - Compliance

Client Sample ID: GWC-4A
Date Collected: 07/11/18 11:00
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405411	07/24/18 03:42	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 16:18	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:00	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404815	07/18/18 07:54	RRC	TAL PEN

Client Sample ID: GWA-2
Date Collected: 07/11/18 11:20
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405411	07/24/18 04:05	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 16:24	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:07	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404815	07/18/18 07:54	RRC	TAL PEN

Client Sample ID: GWA-3
Date Collected: 07/11/18 11:27
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405411	07/24/18 04:28	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 16:28	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:09	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404815	07/18/18 07:54	RRC	TAL PEN

Client Sample ID: GWC-5
Date Collected: 07/11/18 12:29
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405411	07/24/18 04:51	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 16:33	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:11	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404815	07/18/18 07:54	RRC	TAL PEN

Client Sample ID: GWA-13

Lab Sample ID: 400-156322-5

Date Collected: 07/11/18 12:35

Matrix: Water

Date Received: 07/12/18 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405411	07/24/18 05:14	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 16:37	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:13	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: GWA-14

Lab Sample ID: 400-156322-6

Date Collected: 07/11/18 12:58

Matrix: Water

Date Received: 07/12/18 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405411	07/24/18 05:36	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 16:42	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:20	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: GWA-16

Lab Sample ID: 400-156322-7

Date Collected: 07/11/18 13:46

Matrix: Water

Date Received: 07/12/18 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405411	07/24/18 05:59	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 16:46	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:22	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: GWC-15

Lab Sample ID: 400-156322-8

Date Collected: 07/11/18 13:55

Matrix: Water

Date Received: 07/12/18 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405448	07/24/18 08:16	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 16:51	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:24	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: GWC-17

Lab Sample ID: 400-156322-9

Date Collected: 07/11/18 14:35
Matrix: Water
Date Received: 07/12/18 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405448	07/24/18 09:25	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 16:55	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:26	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: GWC-19

Lab Sample ID: 400-156322-10

Date Collected: 07/11/18 15:10
Matrix: Water
Date Received: 07/12/18 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405448	07/24/18 09:48	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 17:00	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:28	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: GWC-18

Lab Sample ID: 400-156322-11

Date Collected: 07/11/18 15:20
Matrix: Water
Date Received: 07/12/18 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405448	07/24/18 10:10	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 17:27	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:30	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: GWC-20

Lab Sample ID: 400-156322-12

Date Collected: 07/11/18 16:00
Matrix: Water
Date Received: 07/12/18 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405448	07/24/18 17:15	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 17:32	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:32	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: FERB-02
Date Collected: 07/11/18 16:25
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405448	07/24/18 12:36	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 17:36	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:33	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: FB-03
Date Collected: 07/11/18 16:30
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405448	07/24/18 12:59	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 17:41	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:35	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: GWC-21
Date Collected: 07/11/18 16:35
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405448	07/24/18 13:21	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 17:45	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:37	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: DUP-03
Date Collected: 07/11/18 00:00
Date Received: 07/12/18 09:35

Lab Sample ID: 400-156322-16
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405448	07/24/18 14:32	JAW	TAL PEN
Total Recoverable	Prep	3005A			404827	07/18/18 08:50	CWF	TAL PEN
Total Recoverable	Analysis	6020		5	404956	07/18/18 17:50	DRE	TAL PEN
Total/NA	Prep	7470A			407363	08/08/18 15:34	DN1	TAL PEN
Total/NA	Analysis	7470A		1	407400	08/08/18 19:46	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404673	07/17/18 12:57	RRC	TAL PEN

Client Sample ID: GWC-9

Lab Sample ID: 400-156322-17

Date Collected: 07/12/18 09:25

Matrix: Water

Date Received: 07/13/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405984	07/24/18 14:58	JAW	TAL PEN
Total Recoverable	Prep	3005A			404697	07/17/18 11:03	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	404861	07/17/18 21:19	DRE	TAL PEN
Total/NA	Prep	7470A			405936	07/28/18 10:56	DN1	TAL PEN
Total/NA	Analysis	7470A		1	406028	07/28/18 19:09	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404863	07/18/18 11:12	RRC	TAL PEN

Client Sample ID: GWC-12

Lab Sample ID: 400-156322-18

Date Collected: 07/12/18 09:22

Matrix: Water

Date Received: 07/13/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405984	07/24/18 13:44	JAW	TAL PEN
Total Recoverable	Prep	3005A			404697	07/17/18 11:03	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	404861	07/17/18 21:23	DRE	TAL PEN
Total/NA	Prep	7470A			405936	07/28/18 10:56	DN1	TAL PEN
Total/NA	Analysis	7470A		1	406028	07/28/18 19:11	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404863	07/18/18 11:12	RRC	TAL PEN

Client Sample ID: GWC-11

Lab Sample ID: 400-156322-19

Date Collected: 07/12/18 09:40

Matrix: Water

Date Received: 07/13/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405984	07/24/18 15:21	JAW	TAL PEN
Total Recoverable	Prep	3005A			404697	07/17/18 11:03	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	404861	07/17/18 21:28	DRE	TAL PEN
Total/NA	Prep	7470A			405936	07/28/18 10:56	DN1	TAL PEN
Total/NA	Analysis	7470A		1	406028	07/28/18 19:13	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	405005	07/19/18 14:24	RRC	TAL PEN

Client Sample ID: GWC-1

Lab Sample ID: 400-156322-20

Date Collected: 07/12/18 10:35

Matrix: Water

Date Received: 07/13/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405984	07/24/18 16:29	JAW	TAL PEN
Total Recoverable	Prep	3005A			404697	07/17/18 11:03	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	404861	07/17/18 21:32	DRE	TAL PEN
Total/NA	Prep	7470A			405936	07/28/18 10:56	DN1	TAL PEN
Total/NA	Analysis	7470A		1	406028	07/28/18 19:14	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	405005	07/19/18 14:24	RRC	TAL PEN

Client Sample ID: GWC-10

Date Collected: 07/12/18 10:45
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-21

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405984	07/24/18 16:52	JAW	TAL PEN
Total Recoverable	Prep	3005A			404697	07/17/18 11:03	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	404861	07/17/18 21:37	DRE	TAL PEN
Total/NA	Prep	7470A			405936	07/28/18 10:56	DN1	TAL PEN
Total/NA	Analysis	7470A		1	406028	07/28/18 19:16	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	404817	07/18/18 18:45	RRC	TAL PEN

Client Sample ID: GWC-23

Date Collected: 07/12/18 11:20
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-22

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405984	07/24/18 17:38	JAW	TAL PEN
Total Recoverable	Prep	3005A			404697	07/17/18 11:03	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	404861	07/17/18 21:42	DRE	TAL PEN
Total/NA	Prep	7470A			405936	07/28/18 10:56	DN1	TAL PEN
Total/NA	Analysis	7470A		1	406028	07/28/18 19:18	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	405005	07/19/18 14:24	RRC	TAL PEN

Client Sample ID: FB-04

Date Collected: 07/12/18 11:24
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-23

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405984	07/24/18 18:03	JAW	TAL PEN
Total Recoverable	Prep	3005A			404697	07/17/18 11:03	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	404861	07/17/18 21:46	DRE	TAL PEN
Total/NA	Prep	7470A			405936	07/28/18 10:56	DN1	TAL PEN
Total/NA	Analysis	7470A		1	406028	07/28/18 19:20	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	405005	07/19/18 14:24	RRC	TAL PEN

Client Sample ID: FERB-03

Date Collected: 07/12/18 11:30
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-24

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	405984	07/24/18 18:28	JAW	TAL PEN
Total Recoverable	Prep	3005A			404697	07/17/18 11:03	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	404861	07/17/18 21:50	DRE	TAL PEN
Total/NA	Prep	7470A			405936	07/28/18 10:56	DN1	TAL PEN
Total/NA	Analysis	7470A		1	406028	07/28/18 19:22	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	405005	07/19/18 14:24	RRC	TAL PEN

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-156322-2
SDG: Ash Disposal Area 4 - Compliance

Client Sample ID: FERB-04

Date Collected: 07/12/18 11:40
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	406129	07/24/18 22:52	JAW	TAL PEN
Total Recoverable	Prep	3005A			404697	07/17/18 11:03	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	404861	07/17/18 21:55	DRE	TAL PEN
Total/NA	Prep	7470A			405936	07/28/18 10:56	DN1	TAL PEN
Total/NA	Analysis	7470A		1	406028	07/28/18 19:33	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	405005	07/19/18 14:24	RRC	TAL PEN

Client Sample ID: DUP-04

Date Collected: 07/12/18 00:00
Date Received: 07/13/18 09:30

Lab Sample ID: 400-156322-26

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	406129	07/24/18 23:14	JAW	TAL PEN
Total Recoverable	Prep	3005A			404697	07/17/18 11:04	DRE	TAL PEN
Total Recoverable	Analysis	6020		5	404861	07/17/18 22:00	DRE	TAL PEN
Total/NA	Prep	7470A			405936	07/28/18 10:56	DN1	TAL PEN
Total/NA	Analysis	7470A		1	406028	07/28/18 19:35	DN1	TAL PEN
Total/NA	Analysis	SM 2540C		1	405005	07/19/18 14:24	RRC	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

HPLC/IC

Analysis Batch: 405411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-1	GWC-4A	Total/NA	Water	300.0	
400-156322-2	GWA-2	Total/NA	Water	300.0	
400-156322-3	GWA-3	Total/NA	Water	300.0	
400-156322-4	GWC-5	Total/NA	Water	300.0	
400-156322-5	GWA-13	Total/NA	Water	300.0	
400-156322-6	GWA-14	Total/NA	Water	300.0	
400-156322-7	GWA-16	Total/NA	Water	300.0	
MB 400-405411/12	Method Blank	Total/NA	Water	300.0	
LCS 400-405411/13	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-405411/14	Lab Control Sample Dup	Total/NA	Water	300.0	
400-156226-D-1 MS - DL	Matrix Spike	Total/NA	Water	300.0	
400-156226-D-1 MSD - DL	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 405448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-8	GWC-15	Total/NA	Water	300.0	
400-156322-9	GWC-17	Total/NA	Water	300.0	
400-156322-10	GWC-19	Total/NA	Water	300.0	
400-156322-11	GWC-18	Total/NA	Water	300.0	
400-156322-12	GWC-20	Total/NA	Water	300.0	
400-156322-13	FERB-02	Total/NA	Water	300.0	
400-156322-14	FB-03	Total/NA	Water	300.0	
400-156322-15	GWC-21	Total/NA	Water	300.0	
400-156322-16	DUP-03	Total/NA	Water	300.0	
MB 400-405448/45	Method Blank	Total/NA	Water	300.0	
LCS 400-405448/46	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-405448/47	Lab Control Sample Dup	Total/NA	Water	300.0	
400-156322-A-8 MS	GWC-15	Total/NA	Water	300.0	
400-156322-A-8 MSD	GWC-15	Total/NA	Water	300.0	

Analysis Batch: 405984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-17	GWC-9	Total/NA	Water	300.0	
400-156322-18	GWC-12	Total/NA	Water	300.0	
400-156322-19	GWC-11	Total/NA	Water	300.0	
400-156322-20	GWC-1	Total/NA	Water	300.0	
400-156322-21	GWC-10	Total/NA	Water	300.0	
400-156322-22	GWC-23	Total/NA	Water	300.0	
400-156322-23	FB-04	Total/NA	Water	300.0	
400-156322-24	FERB-03	Total/NA	Water	300.0	
MB 400-405984/4	Method Blank	Total/NA	Water	300.0	
LCS 400-405984/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-405984/6	Lab Control Sample Dup	Total/NA	Water	300.0	
400-156322-A-8 MS	400-156322-A-8 MS	Total/NA	Water	300.0	
400-156322-A-8 MSD	400-156322-A-8 MSD	Total/NA	Water	300.0	

Analysis Batch: 406129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-25	FERB-04	Total/NA	Water	300.0	
400-156322-26	DUP-04	Total/NA	Water	300.0	
MB 400-406129/26	Method Blank	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 406129 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 400-406129/27	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-406129/28	Lab Control Sample Dup	Total/NA	Water	300.0	
400-156226-D-2 MS	Matrix Spike	Total/NA	Water	300.0	
400-156226-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 404697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-17	GWC-9	Total Recoverable	Water	3005A	
400-156322-18	GWC-12	Total Recoverable	Water	3005A	
400-156322-19	GWC-11	Total Recoverable	Water	3005A	
400-156322-20	GWC-1	Total Recoverable	Water	3005A	
400-156322-21	GWC-10	Total Recoverable	Water	3005A	
400-156322-22	GWC-23	Total Recoverable	Water	3005A	
400-156322-23	FB-04	Total Recoverable	Water	3005A	
400-156322-24	FERB-03	Total Recoverable	Water	3005A	
400-156322-25	FERB-04	Total Recoverable	Water	3005A	
400-156322-26	DUP-04	Total Recoverable	Water	3005A	
MB 400-404697/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-404697/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-156002-C-2-C MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
400-156002-C-2-D MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Prep Batch: 404827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-1	GWC-4A	Total Recoverable	Water	3005A	
400-156322-2	GWA-2	Total Recoverable	Water	3005A	
400-156322-3	GWA-3	Total Recoverable	Water	3005A	
400-156322-4	GWC-5	Total Recoverable	Water	3005A	
400-156322-5	GWA-13	Total Recoverable	Water	3005A	
400-156322-6	GWA-14	Total Recoverable	Water	3005A	
400-156322-7	GWA-16	Total Recoverable	Water	3005A	
400-156322-8	GWC-15	Total Recoverable	Water	3005A	
400-156322-9	GWC-17	Total Recoverable	Water	3005A	
400-156322-10	GWC-19	Total Recoverable	Water	3005A	
400-156322-11	GWC-18	Total Recoverable	Water	3005A	
400-156322-12	GWC-20	Total Recoverable	Water	3005A	
400-156322-13	FERB-02	Total Recoverable	Water	3005A	
400-156322-14	FB-03	Total Recoverable	Water	3005A	
400-156322-15	GWC-21	Total Recoverable	Water	3005A	
400-156322-16	DUP-03	Total Recoverable	Water	3005A	
MB 400-404827/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-404827/5-A	Lab Control Sample	Total Recoverable	Water	3005A	
400-156208-B-1-B MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
400-156208-B-1-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 404861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-17	GWC-9	Total Recoverable	Water	6020	404697

Metals (Continued)

Analysis Batch: 404861 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-18	GWC-12	Total Recoverable	Water	6020	404697
400-156322-19	GWC-11	Total Recoverable	Water	6020	404697
400-156322-20	GWC-1	Total Recoverable	Water	6020	404697
400-156322-21	GWC-10	Total Recoverable	Water	6020	404697
400-156322-22	GWC-23	Total Recoverable	Water	6020	404697
400-156322-23	FB-04	Total Recoverable	Water	6020	404697
400-156322-24	FERB-03	Total Recoverable	Water	6020	404697
400-156322-25	FERB-04	Total Recoverable	Water	6020	404697
400-156322-26	DUP-04	Total Recoverable	Water	6020	404697
MB 400-404697/1-A ^5	Method Blank	Total Recoverable	Water	6020	404697
LCS 400-404697/2-A	Lab Control Sample	Total Recoverable	Water	6020	404697
400-156002-C-2-C MS ^5	Matrix Spike	Total Recoverable	Water	6020	404697
400-156002-C-2-D MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	6020	404697

Analysis Batch: 404956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-1	GWC-4A	Total Recoverable	Water	6020	404827
400-156322-2	GWA-2	Total Recoverable	Water	6020	404827
400-156322-3	GWA-3	Total Recoverable	Water	6020	404827
400-156322-4	GWC-5	Total Recoverable	Water	6020	404827
400-156322-5	GWA-13	Total Recoverable	Water	6020	404827
400-156322-6	GWA-14	Total Recoverable	Water	6020	404827
400-156322-7	GWA-16	Total Recoverable	Water	6020	404827
400-156322-8	GWC-15	Total Recoverable	Water	6020	404827
400-156322-9	GWC-17	Total Recoverable	Water	6020	404827
400-156322-10	GWC-19	Total Recoverable	Water	6020	404827
400-156322-11	GWC-18	Total Recoverable	Water	6020	404827
400-156322-12	GWC-20	Total Recoverable	Water	6020	404827
400-156322-13	FERB-02	Total Recoverable	Water	6020	404827
400-156322-14	FB-03	Total Recoverable	Water	6020	404827
400-156322-15	GWC-21	Total Recoverable	Water	6020	404827
400-156322-16	DUP-03	Total Recoverable	Water	6020	404827
MB 400-404827/1-A ^5	Method Blank	Total Recoverable	Water	6020	404827
LCS 400-404827/5-A	Lab Control Sample	Total Recoverable	Water	6020	404827
400-156208-B-1-B MS ^5	Matrix Spike	Total Recoverable	Water	6020	404827
400-156208-B-1-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	6020	404827

Prep Batch: 405936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-17	GWC-9	Total/NA	Water	7470A	
400-156322-18	GWC-12	Total/NA	Water	7470A	
400-156322-19	GWC-11	Total/NA	Water	7470A	
400-156322-20	GWC-1	Total/NA	Water	7470A	
400-156322-21	GWC-10	Total/NA	Water	7470A	
400-156322-22	GWC-23	Total/NA	Water	7470A	
400-156322-23	FB-04	Total/NA	Water	7470A	
400-156322-24	FERB-03	Total/NA	Water	7470A	
400-156322-25	FERB-04	Total/NA	Water	7470A	
400-156322-26	DUP-04	Total/NA	Water	7470A	
MB 400-405936/13-A	Method Blank	Total/NA	Water	7470A	
LCS 400-405936/14-A	Lab Control Sample	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 405936 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156887-B-8-C MS	Matrix Spike	Total/NA	Water	7470A	
400-156887-B-8-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 406028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-17	GWC-9	Total/NA	Water	7470A	405936
400-156322-18	GWC-12	Total/NA	Water	7470A	405936
400-156322-19	GWC-11	Total/NA	Water	7470A	405936
400-156322-20	GWC-1	Total/NA	Water	7470A	405936
400-156322-21	GWC-10	Total/NA	Water	7470A	405936
400-156322-22	GWC-23	Total/NA	Water	7470A	405936
400-156322-23	FB-04	Total/NA	Water	7470A	405936
400-156322-24	FERB-03	Total/NA	Water	7470A	405936
400-156322-25	FERB-04	Total/NA	Water	7470A	405936
400-156322-26	DUP-04	Total/NA	Water	7470A	405936
MB 400-405936/13-A	Method Blank	Total/NA	Water	7470A	405936
LCS 400-405936/14-A	Lab Control Sample	Total/NA	Water	7470A	405936
400-156887-B-8-C MS	Matrix Spike	Total/NA	Water	7470A	405936
400-156887-B-8-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	405936

Prep Batch: 407363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-1	GWC-4A	Total/NA	Water	7470A	
400-156322-2	GWA-2	Total/NA	Water	7470A	
400-156322-3	GWA-3	Total/NA	Water	7470A	
400-156322-4	GWC-5	Total/NA	Water	7470A	
400-156322-5	GWA-13	Total/NA	Water	7470A	
400-156322-6	GWA-14	Total/NA	Water	7470A	
400-156322-7	GWA-16	Total/NA	Water	7470A	
400-156322-8	GWC-15	Total/NA	Water	7470A	
400-156322-9	GWC-17	Total/NA	Water	7470A	
400-156322-10	GWC-19	Total/NA	Water	7470A	
400-156322-11	GWC-18	Total/NA	Water	7470A	
400-156322-12	GWC-20	Total/NA	Water	7470A	
400-156322-13	FERB-02	Total/NA	Water	7470A	
400-156322-14	FB-03	Total/NA	Water	7470A	
400-156322-15	GWC-21	Total/NA	Water	7470A	
400-156322-16	DUP-03	Total/NA	Water	7470A	
MB 400-407363/13-A	Method Blank	Total/NA	Water	7470A	
LCS 400-407363/14-A	Lab Control Sample	Total/NA	Water	7470A	
400-156322-1 MS	GWC-4A	Total/NA	Water	7470A	
400-156322-1 MSD	GWC-4A	Total/NA	Water	7470A	

Analysis Batch: 407400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-1	GWC-4A	Total/NA	Water	7470A	407363
400-156322-2	GWA-2	Total/NA	Water	7470A	407363
400-156322-3	GWA-3	Total/NA	Water	7470A	407363
400-156322-4	GWC-5	Total/NA	Water	7470A	407363
400-156322-5	GWA-13	Total/NA	Water	7470A	407363
400-156322-6	GWA-14	Total/NA	Water	7470A	407363

Metals (Continued)

Analysis Batch: 407400 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-7	GWA-16	Total/NA	Water	7470A	407363
400-156322-8	GWC-15	Total/NA	Water	7470A	407363
400-156322-9	GWC-17	Total/NA	Water	7470A	407363
400-156322-10	GWC-19	Total/NA	Water	7470A	407363
400-156322-11	GWC-18	Total/NA	Water	7470A	407363
400-156322-12	GWC-20	Total/NA	Water	7470A	407363
400-156322-13	FERB-02	Total/NA	Water	7470A	407363
400-156322-14	FB-03	Total/NA	Water	7470A	407363
400-156322-15	GWC-21	Total/NA	Water	7470A	407363
400-156322-16	DUP-03	Total/NA	Water	7470A	407363
MB 400-407363/13-A	Method Blank	Total/NA	Water	7470A	407363
LCS 400-407363/14-A	Lab Control Sample	Total/NA	Water	7470A	407363
400-156322-1 MS	GWC-4A	Total/NA	Water	7470A	407363
400-156322-1 MSD	GWC-4A	Total/NA	Water	7470A	407363

General Chemistry

Analysis Batch: 404673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-16	DUP-03	Total/NA	Water	SM 2540C	
MB 400-404673/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-404673/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-156216-D-2 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 404815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-1	GWC-4A	Total/NA	Water	SM 2540C	
400-156322-2	GWA-2	Total/NA	Water	SM 2540C	
400-156322-3	GWA-3	Total/NA	Water	SM 2540C	
400-156322-4	GWC-5	Total/NA	Water	SM 2540C	
MB 400-404815/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-404815/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-156245-A-8 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 404817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-5	GWA-13	Total/NA	Water	SM 2540C	
400-156322-6	GWA-14	Total/NA	Water	SM 2540C	
400-156322-7	GWA-16	Total/NA	Water	SM 2540C	
400-156322-8	GWC-15	Total/NA	Water	SM 2540C	
400-156322-9	GWC-17	Total/NA	Water	SM 2540C	
400-156322-10	GWC-19	Total/NA	Water	SM 2540C	
400-156322-11	GWC-18	Total/NA	Water	SM 2540C	
400-156322-12	GWC-20	Total/NA	Water	SM 2540C	
400-156322-13	FERB-02	Total/NA	Water	SM 2540C	
400-156322-14	FB-03	Total/NA	Water	SM 2540C	
400-156322-15	GWC-21	Total/NA	Water	SM 2540C	
400-156322-21	GWC-10	Total/NA	Water	SM 2540C	
MB 400-404817/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-404817/2	Lab Control Sample	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 404817 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-5 DU	GWA-13	Total/NA	Water	SM 2540C	
400-156322-7 DU	GWA-16	Total/NA	Water	SM 2540C	

Analysis Batch: 404863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-17	GWC-9	Total/NA	Water	SM 2540C	
400-156322-18	GWC-12	Total/NA	Water	SM 2540C	
MB 400-404863/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-404863/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-156300-A-5 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 405005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156322-19	GWC-11	Total/NA	Water	SM 2540C	
400-156322-20	GWC-1	Total/NA	Water	SM 2540C	
400-156322-22	GWC-23	Total/NA	Water	SM 2540C	
400-156322-23	FB-04	Total/NA	Water	SM 2540C	
400-156322-24	FERB-03	Total/NA	Water	SM 2540C	
400-156322-25	FERB-04	Total/NA	Water	SM 2540C	
400-156322-26	DUP-04	Total/NA	Water	SM 2540C	
MB 400-405005/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 400-405005/2	Lab Control Sample	Total/NA	Water	SM 2540C	
400-156322-22 DU	GWC-23	Total/NA	Water	SM 2540C	

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-405411/12
Matrix: Water
Analysis Batch: 405411

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			07/23/18 18:34	1
Fluoride	<0.082		0.20	0.082	mg/L			07/23/18 18:34	1
Sulfate	<0.70		1.0	0.70	mg/L			07/23/18 18:34	1

Lab Sample ID: LCS 400-405411/13
Matrix: Water
Analysis Batch: 405411

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.0		mg/L		100	90 - 110
Fluoride	10.0	10.3		mg/L		103	90 - 110
Sulfate	10.0	10.1		mg/L		101	90 - 110

Lab Sample ID: LCSD 400-405411/14
Matrix: Water
Analysis Batch: 405411

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.0		mg/L		100	90 - 110	0	15
Fluoride	10.0	10.5		mg/L		105	90 - 110	2	15
Sulfate	10.0	9.87		mg/L		99	90 - 110	2	15

Lab Sample ID: MB 400-405448/45
Matrix: Water
Analysis Batch: 405448

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			07/24/18 07:08	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 07:08	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 07:08	1

Lab Sample ID: LCS 400-405448/46
Matrix: Water
Analysis Batch: 405448

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.1		mg/L		101	90 - 110
Fluoride	10.0	10.4		mg/L		104	90 - 110
Sulfate	10.0	10.1		mg/L		101	90 - 110

Lab Sample ID: LCSD 400-405448/47
Matrix: Water
Analysis Batch: 405448

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.0		mg/L		100	90 - 110	0	15
Fluoride	10.0	10.5		mg/L		105	90 - 110	1	15
Sulfate	10.0	10.0		mg/L		100	90 - 110	1	15

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 400-156322-A-8 MS
Matrix: Water
Analysis Batch: 405448

Client Sample ID: GWC-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.8		10.0	13.8		mg/L		100	80 - 120
Fluoride	<0.082		10.0	10.5		mg/L		105	80 - 120
Sulfate	<0.70		10.0	10.8		mg/L		108	80 - 120

Lab Sample ID: 400-156322-A-8 MSD
Matrix: Water
Analysis Batch: 405448

Client Sample ID: GWC-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.8		10.0	13.9		mg/L		101	80 - 120	0	20
Fluoride	<0.082		10.0	10.6		mg/L		106	80 - 120	1	20
Sulfate	<0.70		10.0	10.7		mg/L		107	80 - 120	1	20

Lab Sample ID: MB 400-405984/4
Matrix: Water
Analysis Batch: 405984

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			07/24/18 07:08	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 07:08	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 07:08	1

Lab Sample ID: LCS 400-405984/5
Matrix: Water
Analysis Batch: 405984

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.1		mg/L		101	90 - 110
Fluoride	10.0	10.4		mg/L		104	90 - 110
Sulfate	10.0	10.1		mg/L		101	90 - 110

Lab Sample ID: LCSD 400-405984/6
Matrix: Water
Analysis Batch: 405984

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.0		mg/L		100	90 - 110	0	15
Fluoride	10.0	10.5		mg/L		105	90 - 110	1	15
Sulfate	10.0	10.0		mg/L		100	90 - 110	1	15

Lab Sample ID: 400-156322-A-8 MS
Matrix: Water
Analysis Batch: 405984

Client Sample ID: 400-156322-A-8 MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.8		10.0	13.8		mg/L		100	80 - 120
Fluoride	<0.082		10.0	10.5		mg/L		105	80 - 120
Sulfate	<0.70		10.0	10.8		mg/L		108	80 - 120

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 400-156322-A-8 MSD
Matrix: Water
Analysis Batch: 405984

Client Sample ID: 400-156322-A-8 MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.8		10.0	13.9		mg/L		101	80 - 120	0	20
Fluoride	<0.082		10.0	10.6		mg/L		106	80 - 120	1	20
Sulfate	<0.70		10.0	10.7		mg/L		107	80 - 120	1	20

Lab Sample ID: MB 400-406129/26
Matrix: Water
Analysis Batch: 406129

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			07/24/18 19:45	1
Fluoride	<0.082		0.20	0.082	mg/L			07/24/18 19:45	1
Sulfate	<0.70		1.0	0.70	mg/L			07/24/18 19:45	1

Lab Sample ID: LCS 400-406129/27
Matrix: Water
Analysis Batch: 406129

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.5		mg/L		105	90 - 110
Fluoride	10.0	10.7		mg/L		107	90 - 110
Sulfate	10.0	10.7		mg/L		107	90 - 110

Lab Sample ID: LCSD 400-406129/28
Matrix: Water
Analysis Batch: 406129

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.6		mg/L		106	90 - 110	0	15
Fluoride	10.0	10.9		mg/L		109	90 - 110	2	15
Sulfate	10.0	10.7		mg/L		107	90 - 110	1	15

Lab Sample ID: 400-156226-D-2 MS
Matrix: Water
Analysis Batch: 406129

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	330		100	427		mg/L		99	80 - 120
Fluoride	<0.82		100	107		mg/L		107	80 - 120
Sulfate	36		100	143		mg/L		107	80 - 120

Lab Sample ID: 400-156226-D-2 MSD
Matrix: Water
Analysis Batch: 406129

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	330		100	427		mg/L		99	80 - 120	0	20
Fluoride	<0.82		100	106		mg/L		106	80 - 120	1	20
Sulfate	36		100	144		mg/L		109	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 400-156226-D-1 MS
Matrix: Water
Analysis Batch: 405411

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride - DL	150		50.0	194		mg/L		92	80 - 120
Fluoride - DL	<0.41		50.0	53.4		mg/L		107	80 - 120
Sulfate - DL	12		50.0	66.5		mg/L		108	80 - 120

Lab Sample ID: 400-156226-D-1 MSD
Matrix: Water
Analysis Batch: 405411

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride - DL	150		50.0	194		mg/L		92	80 - 120	0	20
Fluoride - DL	<0.41		50.0	53.7		mg/L		107	80 - 120	0	20
Sulfate - DL	12		50.0	66.0		mg/L		107	80 - 120	1	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 400-404697/1-A ^5
Matrix: Water
Analysis Batch: 404861

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 404697

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/17/18 11:03	07/17/18 16:03	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/17/18 11:03	07/17/18 16:03	5
Boron	<0.021	^	0.050	0.021	mg/L		07/17/18 11:03	07/17/18 16:03	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/17/18 11:03	07/17/18 16:03	5
Barium	<0.00049		0.0025	0.00049	mg/L		07/17/18 11:03	07/17/18 16:03	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/17/18 11:03	07/17/18 16:03	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 16:03	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/17/18 11:03	07/17/18 16:03	5
Calcium	<0.13		0.25	0.13	mg/L		07/17/18 11:03	07/17/18 16:03	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/17/18 11:03	07/17/18 16:03	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/17/18 11:03	07/17/18 16:03	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/17/18 11:03	07/17/18 16:03	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/17/18 11:03	07/17/18 16:03	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/17/18 11:03	07/17/18 16:03	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/17/18 11:03	07/17/18 16:03	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/17/18 11:03	07/17/18 16:03	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/17/18 11:03	07/17/18 16:03	5

Lab Sample ID: LCS 400-404697/2-A
Matrix: Water
Analysis Batch: 404861

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 404697

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0500	0.0514		mg/L		103	80 - 120
Copper	0.0500	0.0538		mg/L		108	80 - 120
Boron	0.100	0.0998	^	mg/L		100	80 - 120
Nickel	0.0500	0.0523		mg/L		105	80 - 120
Barium	0.0500	0.0533		mg/L		107	80 - 120

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 400-404697/2-A
Matrix: Water
Analysis Batch: 404861

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 404697

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.0500	0.0546		mg/L		109	80 - 120
Beryllium	0.0500	0.0510		mg/L		102	80 - 120
Vanadium	0.0500	0.0505		mg/L		101	80 - 120
Calcium	5.00	5.15		mg/L		103	80 - 120
Zinc	0.0500	0.0522		mg/L		104	80 - 120
Cadmium	0.0500	0.0519		mg/L		104	80 - 120
Chromium	0.0500	0.0518		mg/L		104	80 - 120
Cobalt	0.0500	0.0550		mg/L		110	80 - 120
Lead	0.0500	0.0513		mg/L		103	80 - 120
Antimony	0.0500	0.0507		mg/L		101	80 - 120
Selenium	0.0500	0.0504		mg/L		101	80 - 120
Thallium	0.0100	0.00992		mg/L		99	80 - 120

Lab Sample ID: 400-156002-C-2-C MS ^5
Matrix: Water
Analysis Batch: 404861

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 404697

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.016		0.0500	0.0654		mg/L		98	75 - 125
Copper	0.0038		0.0500	0.0496		mg/L		92	75 - 125
Boron	46	E ^	0.100	47.2	E 4 ^	mg/L		786	75 - 125
Nickel	0.061		0.0500	0.104		mg/L		87	75 - 125
Barium	0.23		0.0500	0.277	4	mg/L		92	75 - 125
Silver	<0.00011		0.0500	0.0454		mg/L		91	75 - 125
Beryllium	0.00088	J	0.0500	0.0505		mg/L		99	75 - 125
Vanadium	<0.0014		0.0500	0.0478		mg/L		96	75 - 125
Calcium	1200	E	5.00	1220	E 4	mg/L		218	75 - 125
Zinc	0.015	J F1	0.0500	0.0290	F1	mg/L		28	75 - 125
Cadmium	0.0069		0.0500	0.0566		mg/L		99	75 - 125
Chromium	<0.0011		0.0500	0.0475		mg/L		95	75 - 125
Cobalt	0.032		0.0500	0.0803		mg/L		96	75 - 125
Lead	0.0028		0.0500	0.0551		mg/L		105	75 - 125
Antimony	<0.0010		0.0500	0.0528		mg/L		106	75 - 125
Selenium	0.030		0.0500	0.0791		mg/L		98	75 - 125
Thallium	0.00070		0.0100	0.0111		mg/L		104	75 - 125

Lab Sample ID: 400-156002-C-2-D MSD ^5
Matrix: Water
Analysis Batch: 404861

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 404697

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.016		0.0500	0.0641		mg/L		95	75 - 125	2	20
Copper	0.0038		0.0500	0.0487		mg/L		90	75 - 125	2	20
Boron	46	E ^	0.100	46.7	E 4 ^	mg/L		291	75 - 125	1	20
Nickel	0.061		0.0500	0.104		mg/L		87	75 - 125	0	20
Barium	0.23		0.0500	0.281	4	mg/L		100	75 - 125	1	20
Silver	<0.00011		0.0500	0.0459		mg/L		92	75 - 125	1	20
Beryllium	0.00088	J	0.0500	0.0490		mg/L		96	75 - 125	3	20
Vanadium	<0.0014		0.0500	0.0467		mg/L		93	75 - 125	2	20

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-156002-C-2-D MSD ^5
Matrix: Water
Analysis Batch: 404861

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 404697

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	1200	E	5.00	1200	E 4	mg/L		-195	75 - 125	2	20
Zinc	0.015	J F1	0.0500	0.0281	F1	mg/L		26	75 - 125	3	20
Cadmium	0.0069		0.0500	0.0564		mg/L		99	75 - 125	0	20
Chromium	<0.0011		0.0500	0.0456		mg/L		91	75 - 125	4	20
Cobalt	0.032		0.0500	0.0788		mg/L		93	75 - 125	2	20
Lead	0.0028		0.0500	0.0549		mg/L		104	75 - 125	0	20
Antimony	<0.0010		0.0500	0.0510		mg/L		102	75 - 125	4	20
Selenium	0.030		0.0500	0.0778		mg/L		96	75 - 125	2	20
Thallium	0.00070		0.0100	0.0110		mg/L		103	75 - 125	2	20

Lab Sample ID: MB 400-404827/1-A ^5
Matrix: Water
Analysis Batch: 404956

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 404827

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		07/18/18 08:50	07/18/18 14:35	5
Copper	<0.0021		0.0025	0.0021	mg/L		07/18/18 08:50	07/18/18 14:35	5
Boron	<0.021		0.050	0.021	mg/L		07/18/18 08:50	07/18/18 14:35	5
Nickel	<0.0018		0.0025	0.0018	mg/L		07/18/18 08:50	07/18/18 14:35	5
Barium	<0.00049		0.0025	0.00049	mg/L		07/18/18 08:50	07/18/18 14:35	5
Silver	<0.00011		0.0013	0.00011	mg/L		07/18/18 08:50	07/18/18 14:35	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 14:35	5
Vanadium	<0.0014		0.0025	0.0014	mg/L		07/18/18 08:50	07/18/18 14:35	5
Calcium	<0.13		0.25	0.13	mg/L		07/18/18 08:50	07/18/18 14:35	5
Zinc	<0.0065		0.020	0.0065	mg/L		07/18/18 08:50	07/18/18 14:35	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		07/18/18 08:50	07/18/18 14:35	5
Chromium	<0.0011		0.0025	0.0011	mg/L		07/18/18 08:50	07/18/18 14:35	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		07/18/18 08:50	07/18/18 14:35	5
Lead	<0.00035		0.0013	0.00035	mg/L		07/18/18 08:50	07/18/18 14:35	5
Antimony	<0.0010		0.0025	0.0010	mg/L		07/18/18 08:50	07/18/18 14:35	5
Selenium	<0.00024		0.0013	0.00024	mg/L		07/18/18 08:50	07/18/18 14:35	5
Thallium	<0.000085		0.00050	0.000085	mg/L		07/18/18 08:50	07/18/18 14:35	5

Lab Sample ID: LCS 400-404827/5-A
Matrix: Water
Analysis Batch: 404956

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 404827

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0500	0.0523		mg/L		105	80 - 120
Copper	0.0500	0.0516		mg/L		103	80 - 120
Boron	0.100	0.101		mg/L		101	80 - 120
Nickel	0.0500	0.0521		mg/L		104	80 - 120
Barium	0.0500	0.0515		mg/L		103	80 - 120
Silver	0.0500	0.0526		mg/L		105	80 - 120
Beryllium	0.0500	0.0504		mg/L		101	80 - 120
Vanadium	0.0500	0.0498		mg/L		100	80 - 120
Calcium	5.00	5.41		mg/L		108	80 - 120
Zinc	0.0500	0.0536		mg/L		107	80 - 120
Cadmium	0.0500	0.0526		mg/L		105	80 - 120

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 400-404827/5-A
Matrix: Water
Analysis Batch: 404956

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 404827

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.0500	0.0502		mg/L		100	80 - 120
Cobalt	0.0500	0.0539		mg/L		108	80 - 120
Lead	0.0500	0.0493		mg/L		99	80 - 120
Antimony	0.0500	0.0510		mg/L		102	80 - 120
Selenium	0.0500	0.0506		mg/L		101	80 - 120
Thallium	0.0100	0.0102		mg/L		102	80 - 120

Lab Sample ID: 400-156208-B-1-B MS ^5
Matrix: Water
Analysis Batch: 404956

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 404827

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	<0.00046		0.0500	0.0523		mg/L		105	75 - 125
Copper	<0.0021		0.0500	0.0513		mg/L		103	75 - 125
Boron	<0.021		0.100	0.104		mg/L		104	75 - 125
Nickel	0.0024	J	0.0500	0.0538		mg/L		103	75 - 125
Barium	0.028		0.0500	0.0797		mg/L		103	75 - 125
Silver	<0.00011		0.0500	0.0513		mg/L		103	75 - 125
Beryllium	<0.00034		0.0500	0.0504		mg/L		101	75 - 125
Vanadium	<0.0014		0.0500	0.0490		mg/L		98	75 - 125
Calcium	1.8		5.00	7.88		mg/L		122	75 - 125
Zinc	<0.0065		0.0500	0.0560		mg/L		112	75 - 125
Cadmium	<0.00034		0.0500	0.0505		mg/L		101	75 - 125
Chromium	<0.0011		0.0500	0.0503		mg/L		101	75 - 125
Cobalt	0.0015	J	0.0500	0.0538		mg/L		105	75 - 125
Lead	<0.00035		0.0500	0.0479		mg/L		96	75 - 125
Antimony	<0.0010		0.0500	0.0530		mg/L		106	75 - 125
Selenium	0.00047	J	0.0500	0.0501		mg/L		99	75 - 125
Thallium	<0.000085		0.0100	0.00993		mg/L		99	75 - 125

Lab Sample ID: 400-156208-B-1-C MSD ^5
Matrix: Water
Analysis Batch: 404956

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 404827

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	<0.00046		0.0500	0.0536		mg/L		107	75 - 125	3	20
Copper	<0.0021		0.0500	0.0515		mg/L		103	75 - 125	0	20
Boron	<0.021		0.100	0.101		mg/L		101	75 - 125	2	20
Nickel	0.0024	J	0.0500	0.0530		mg/L		101	75 - 125	1	20
Barium	0.028		0.0500	0.0804		mg/L		104	75 - 125	1	20
Silver	<0.00011		0.0500	0.0526		mg/L		105	75 - 125	3	20
Beryllium	<0.00034		0.0500	0.0510		mg/L		102	75 - 125	1	20
Vanadium	<0.0014		0.0500	0.0506		mg/L		101	75 - 125	3	20
Calcium	1.8		5.00	7.24		mg/L		109	75 - 125	9	20
Zinc	<0.0065		0.0500	0.0586		mg/L		117	75 - 125	5	20
Cadmium	<0.00034		0.0500	0.0528		mg/L		106	75 - 125	4	20
Chromium	<0.0011		0.0500	0.0509		mg/L		102	75 - 125	1	20
Cobalt	0.0015	J	0.0500	0.0550		mg/L		107	75 - 125	2	20
Lead	<0.00035		0.0500	0.0490		mg/L		98	75 - 125	2	20

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 400-156208-B-1-C MSD ^5
Matrix: Water
Analysis Batch: 404956

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 404827

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	<0.0010		0.0500	0.0519		mg/L		104	75 - 125	2	20
Selenium	0.00047	J	0.0500	0.0495		mg/L		98	75 - 125	1	20
Thallium	<0.000085		0.0100	0.0101		mg/L		101	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-405936/13-A
Matrix: Water
Analysis Batch: 406028

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 405936

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		07/28/18 10:56	07/28/18 18:20	1

Lab Sample ID: LCS 400-405936/14-A
Matrix: Water
Analysis Batch: 406028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405936

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.000993		mg/L		99	80 - 120

Lab Sample ID: 400-156887-B-8-C MS
Matrix: Water
Analysis Batch: 406028

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 405936

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.000070		0.00201	0.00201		mg/L		100	80 - 120

Lab Sample ID: 400-156887-B-8-D MSD
Matrix: Water
Analysis Batch: 406028

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 405936

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.000070		0.00201	0.00194		mg/L		96	80 - 120	3	20

Lab Sample ID: MB 400-407363/13-A
Matrix: Water
Analysis Batch: 407400

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 407363

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		08/08/18 15:34	08/08/18 18:56	1

Lab Sample ID: LCS 400-407363/14-A
Matrix: Water
Analysis Batch: 407400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 407363

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.000952		mg/L		95	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 400-156322-1 MS
Matrix: Water
Analysis Batch: 407400

Client Sample ID: GWC-4A
Prep Type: Total/NA
Prep Batch: 407363

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.000070		0.00201	0.00200		mg/L		99	80 - 120

Lab Sample ID: 400-156322-1 MSD
Matrix: Water
Analysis Batch: 407400

Client Sample ID: GWC-4A
Prep Type: Total/NA
Prep Batch: 407363

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.000070		0.00201	0.00199		mg/L		99	80 - 120	0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-404673/1
Matrix: Water
Analysis Batch: 404673

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/17/18 12:57	1

Lab Sample ID: LCS 400-404673/2
Matrix: Water
Analysis Batch: 404673

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	286		mg/L		98	78 - 122

Lab Sample ID: 400-156216-D-2 DU
Matrix: Water
Analysis Batch: 404673

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	120		124		mg/L		2	5

Lab Sample ID: MB 400-404815/1
Matrix: Water
Analysis Batch: 404815

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/18/18 07:54	1

Lab Sample ID: LCS 400-404815/2
Matrix: Water
Analysis Batch: 404815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	300		mg/L		102	78 - 122

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 400-156245-A-8 DU
Matrix: Water
Analysis Batch: 404815

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	120			126		mg/L				5	5

Lab Sample ID: MB 400-404817/1
Matrix: Water
Analysis Batch: 404817

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/18/18 18:45	1

Lab Sample ID: LCS 400-404817/2
Matrix: Water
Analysis Batch: 404817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			293	274		mg/L		94	78 - 122		

Lab Sample ID: 400-156322-5 DU
Matrix: Water
Analysis Batch: 404817

Client Sample ID: GWA-13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	28			22.0	F3	mg/L				24	5

Lab Sample ID: 400-156322-7 DU
Matrix: Water
Analysis Batch: 404817

Client Sample ID: GWA-16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	24			18.0	F3	mg/L				29	5

Lab Sample ID: MB 400-404863/1
Matrix: Water
Analysis Batch: 404863

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/18/18 11:12	1

Lab Sample ID: LCS 400-404863/2
Matrix: Water
Analysis Batch: 404863

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			293	288		mg/L		98	78 - 122		

Lab Sample ID: 400-156300-A-5 DU
Matrix: Water
Analysis Batch: 404863

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	350			344		mg/L				0.6	5

QC Sample Results

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-156322-2
SDG: Ash Disposal Area 4 - Compliance

Lab Sample ID: MB 400-405005/1
Matrix: Water
Analysis Batch: 405005

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			07/19/18 14:24	1

Lab Sample ID: LCS 400-405005/2
Matrix: Water
Analysis Batch: 405005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			293	274		mg/L		94	78 - 122		

Lab Sample ID: 400-156322-22 DU
Matrix: Water
Analysis Batch: 405005

Client Sample ID: GWC-23
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	40			42.0		mg/L				5	5

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: P. Adams L. Coker J. Adcock	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):
Client Contact: Ms. Lauren Petty	Phone: 678 467 9260	E-Mail: cheyenne.whitmire@testamericainc.com	COC No:
Company: Southern Company			Page 1 of 2
Address: PO BOX 2641 GSC8	Due Date Requested:		Job #:
City: Birmingham	TAT Requested (days): Standard		
State, Zip: AL, 35291			
Phone: 205-992-5417(Tel)	PO #: SCS10347858		
Email: lmpetty@southernco.com	WO #:		
Project Name: CCR - Plant McIntosh Ash Landfill #4	Project #: 40007698		
Site:	SSOW#:		

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300_ORGFM_28D-Chloride, Fluoride & Sulfate	6020 ... 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D		
GWC-4A	7/11/18	11:00	G	W	N	N	X	X		Compliance
GWA-2	↓	11:20	↓	↓	↓	↓	↓	↓		
GWA-3	↓	11:27	↓	↓	↓	↓	↓	↓		
GWC-5	↓	12:29	↓	↓	↓	↓	↓	↓		
GWA-13	↓	12:35	↓	↓	↓	↓	↓	↓		
GWA-14	↓	12:58	↓	↓	↓	↓	↓	↓		
GWA-16	↓	13:46	↓	↓	↓	↓	↓	↓		
GWC-15	↓	13:55	↓	↓	↓	↓	↓	↓		
GWC-17	↓	14:35	↓	↓	↓	↓	↓	↓		
GWC-19	↓	15:10	↓	↓	↓	↓	↓	↓		

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Lauren Coker	Date/Time: 7/11/18 1717	Company: GP	Received by: / Date/Time: / Company:
Relinquished by:	Date/Time:	Company:	Received by: / Date/Time: / Company:
Relinquished by:	Date/Time:	Company:	Received by: [signature] / Date/Time: 7-13-18 9:30 / Company: TA Pensacola

Custody Seals Intact: Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 0.7°C, 1.3°C IR8

Ver: 08/04/2016

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information			
Client Contact: Ms. Lauren Petty	Sampler: P. Adams, L. Coker, J Alcock	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):
	Phone: 678 467 9260	E-Mail: cheyenne.whitmire@testamericainc.com	COC No:
Company: Southern Company			Page 2 of 2
Address: PO BOX 2641 GSC8	Due Date Requested:		Job #:
City: Birmingham	TAT Requested (days): Standard		
State, Zip: AL, 35291			
Phone: 205-992-5417(Tel)	PO #: SCS10347656		
Email: lmpetty@southernco.com	WO #:		
Project Name: CCR - Plant McIntosh Ash Landfill #4	Project #: 40007698		
Site:	SSOW#:		

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300_ORGFM_28D-Chloride, Fluoride & Sulfate	6020-Ag,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Ni,Pb,Sb,Se,Tl,V,Zn 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D		
GWC-18	7/11/18	15:20	G	W	N	N	X	X		Compliance
GWC-20	↓	16:00	↓	↓	↓	↓	↓	↓		
FERB-02	↓	16:25	↓	↓	↓	↓	↓	↓		
FB-03	↓	16:30	↓	↓	↓	↓	↓	↓		
GWC-21	↓	16:35	↓	↓	↓	↓	↓	↓		
DUP-03	↓		↓	↓	↓	↓	↓	↓		

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Lauren Coker	7/11/18 1717				
			[signature]	7-13-18 9:30	TAL Pensacola

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.7°C, 1.3°C IR8

Ver: 08/04/2016

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: L. Colzer, P. Adams, J. Adcock	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No:
Client Contact: Ms. Lauren Petty	Phone: 678-467-9260	E-Mail: cheyenne.whitmire@testamericainc.com		Page 1 of 1
Company: Southern Company				Job #:
Address: PO BOX 2641 GSC8	Due Date Requested:			
City: Birmingham	TAT Requested (days): Standard			
State, Zip: AL, 35291				
Phone: 205-992-5417(Tel)	PO #: SCS10347656			
Email: lmpetty@southernco.com	WO #:			
Project Name: CCR - Plant McIntosh Ash Landfill #4	Project #: 40007698			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300_ORGFM_28D-Chloride, Fluoride & Sulfate	6020-Ag,As,B,Ba,Be,Ca,Cd,Co,Cr,Cu,Ni,Pb,Sb,Se,Tl,V,Zn 7470A-Hg	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D		
GWC-9	7/12/18	0925	G	W	N	N	X	X		Compliance
GWC-12	7/12/18	0922	G	W	N	N	X	X		
GWC-11	7/12/18	0940	G	W	N	N	X	X		
GWC-1	7/12/18	1035	G	W	N	N	X	X		
GWC-10	7/12/18	1045	G	W	N	N	X	X		
GWC-23	7/12/18	1120	G	W	N	N	X	X		
FB-04	7/12/18	1124	G	W	N	N	X	X		
Ferb-03	7/12/18	1130	G	W	N	N	X	X		
Ferb-04	7/12/18	1140	G	W	N	N	X	X		
DUP-04	7/12/18	—	G	W	N	N	X	X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	J. ADCOCK	7-12-18 1345	GAI			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 7-13-18 9:30	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.7°C, 1.3°C IR8

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-156322-2
SDG Number: Ash Disposal Area 4 - Compliance

Login Number: 156322
List Number: 1
Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3°C, 0.6°C IR-7, 0.7°C, 1.3°C IR-8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-156322-2
SDG: Ash Disposal Area 4 - Compliance

Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18 *
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-18
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-18 *
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-14	09-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Site: Georgia Power Plant, McIntosh Landfill #4
Laboratory: Test America, Pensacola, FL
Report Nos.: 400-156322-2
Reviewer: Lorie MacKinnon/GEI Consultants
Date: August 15, 2018

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
GWC-4A	400-156322-01	Metals, Anions, TDS
GWA-2	400-156322-02	Metals, Anions, TDS
GWA-3	400-156322-03	Metals, Anions, TDS
GWC-5	400-156322-04	Metals, Anions, TDS
GWA-13	400-156322-05	Metals, Anions, TDS
GWA-14	400-156322-06	Metals, Anions, TDS
GWA-16	400-156322-07	Metals, Anions, TDS
GWC-15	400-156322-08	Metals, Anions, TDS
GWC-17	400-156322-09	Metals, Anions, TDS
GWC-19	400-156322-10	Metals, Anions, TDS
GWC-18	400-156322-11	Metals, Anions, TDS
GWC-20	400-156322-12	Metals, Anions, TDS
FERB-02	400-156322-13	Metals, Anions, TDS
FB-03	400-156322-14	Metals, Anions, TDS
GWC-21	400-156322-15	Metals, Anions, TDS
DUP-03	400-156322-16	Metals, Anions, TDS
GWC-9	400-156322-17	Metals, Anions, TDS
GWC-12	400-156322-18	Metals, Anions, TDS
GWC-11	400-156322-19	Metals, Anions, TDS
GWC-1	400-156322-20	Metals, Anions, TDS
GWC-10	400-156322-21	Metals, Anions, TDS
GWC-23	400-156322-22	Metals, Anions, TDS
FB-04	400-156322-23	Metals, Anions, TDS
FERB-03	400-156322-24	Metals, Anions, TDS
FERB-04	400-156322-25	Metals, Anions, TDS
DUP-04	400-156322-26	Metals, Anions, TDS

QC Samples: Field/Equipment blanks: FERB-02, FB-03, FB-04, FERB-03, FERB-04
Field Duplicate pair: GWC-18/DUP-03, GWC-9/DUP-04

The above-listed aqueous samples and field blanks were collected on July 11 and 12, 2018 and were analyzed for total recoverable metals by SW-846 method 6020, total dissolved solids (TDS)

by Standard Methods SM 2540C, and anions (chloride, fluoride, and sulfate) by EPA method 300. The data were reviewed based on the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (USEPA-540-R-2017-001), as well as by the methods referenced, and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results
- Quantitation Limits

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The level 2 (reduced deliverable) data packages were complete as received by the laboratory and included sample results, method blank, MS/MSD, laboratory duplicate, and LCS results.

Holding Times and Sample Preservation

All criteria were met.

Method and Field Blanks

Contamination was not detected in the associated method and field blanks.

MS/MSD Results

MS/MSD analyses were performed on sample GWC-15 for anions. All recovery and precision criteria were met in this MS/MSD.

Batch (non-project) MS/MSDs were performed for metals. Results from these analyses were not used to qualify project samples due to differences in sample type, matrix, etc.

Laboratory Duplicate Results

Laboratory duplicate analyses were performed on samples GWA-16, GWA-13, and GWC-23 for total dissolved solids. The following table summarizes the precision results and resulting validation actions taken.

Duplicate Sample	Analyte	RPD (%)	QC Limits (%)	Validation Actions
GWA-16	Total dissolved solids	29	5	Estimate (J/UJ) the positive and nondetect results for total dissolved solids in samples GWC-4A, GWA-2, GWA-3, GWC-5, GWA-13, GWA-14, GWA-16, GWC-15, GWC-17, GWC-19, GWC-18, GWC-20, GWC-21, DUP-03, GWC-9, GWC-12, GWC-11, GWC-1, GWC-10, and DUP-04.
GWA-13		24		
GWC-23		Criteria met		
Associated Samples: GWC-4A, GWA-2, GWA-3, GWC-5, GWA-13, GWA-14, GWA-16, GWC-15, GWC-17, GWC-19, GWC-18, GWC-20, GWC-21, DUP-03, GWC-9, GWC-12, GWC-11, GWC-1, GWC-10, GWC-23, DUP-04				

Professional judgment was taken to estimate all field sample TDS results, except for sample GWC-23, which exhibited an acceptable RPD in the laboratory duplicate.

LCS Results

All criteria were met.

Field Duplicate Results

Samples GWC-18 and DUP-03 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair, which were within the acceptance criteria except for total dissolved solids. The positive results for TDS in samples GWC-18 and DUP-03 were qualified as estimated (J). The direction of the bias cannot be determined from this nonconformance.

Analyte	GWC-18 (mg/L)	DUP-03 (mg/L)	RPD (%)
Chloride	4.9	4.9	0
Fluoride	0.59	0.57	3.4
Sulfate	5.0	5.4	7.7
Arsenic	0.00070 J	0.00078 J	10.8
Barium	0.013	0.013	0
Vanadium	0.0016 J	0.0019 J	17.1
Calcium	12	12	0
Chromium	0.0022 J	0.0021 J	4.7
Selenium	0.00044 J	0.0013 U	NC, Within the RL
Thallium	0.000095 J	0.000090 J	5.4
Total dissolved solids	16	100	**145**
NC – Not calculable			

Analyte	GWC-18 (mg/L)	DUP-03 (mg/L)	RPD (%)
Criteria: When both results are ≥5x the RL, RPDs must be <30%. When results are < 5x the RL, the absolute difference between the original and field duplicate must be < RL			

Samples GWC-9 and DUP-04 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair, which were within the acceptance criteria.

Analyte	GWC-9 (mg/L)	DUP-04 (mg/L)	RPD (%)
Chloride	9.4	9.5	1.1
Barium	0.031	0.032	3.2
Calcium	0.49	0.45	8.5
Cobalt	0.00072 J	0.00073 J	1.4
Total dissolved solids	42	48	13.3
NC – Not calculable Criteria: When both results are ≥5x the RL, RPDs must be <30%. When results are < 5x the RL, the absolute difference between the original and field duplicate must be < RL			

Quantitation Limits

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL). These results were qualified as estimated (J) by the laboratory.

Five-fold dilutions were performed for all metals samples.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

NJ - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-159160-1
TestAmerica Sample Delivery Group: Ash Landfill #4
Client Project/Site: CCR - Plant McIntosh

For:
Southern Company
PO BOX 2641 GSC8
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty

Cheyenne R Whitmire

Authorized for release by:
9/18/2018 4:31:12 PM

Cheyenne Whitmire, Project Manager II
(850)471-6222
cheyenne.whitmire@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Detection Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-159160-1
SDG: Ash Landfill #4

Client Sample ID: GWC-9 — Lab Sample ID: 400-159160-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.1		1.0	0.89	mg/L	1		300.0	Total/NA

Client Sample ID: GWC-20 — Lab Sample ID: 400-159160-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.9		1.0	0.89	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-159160-1
SDG: Ash Landfill #4

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-159160-1
SDG: Ash Landfill #4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-159160-1	GWC-9	Water	09/13/18 09:05	09/14/18 09:15
400-159160-2	GWC-20	Water	09/13/18 10:10	09/14/18 09:15

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-159160-1
SDG: Ash Landfill #4

Client Sample ID: GWC-9

Lab Sample ID: 400-159160-1
Date Collected: 09/13/18 09:05
Matrix: Water
Date Received: 09/14/18 09:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.1		1.0	0.89	mg/L			09/15/18 07:36	1

Client Sample ID: GWC-20

Lab Sample ID: 400-159160-2
Date Collected: 09/13/18 10:10
Matrix: Water
Date Received: 09/14/18 09:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.9		1.0	0.89	mg/L			09/15/18 07:59	1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-159160-1
SDG: Ash Landfill #4

Client Sample ID: GWC-9
Date Collected: 09/13/18 09:05
Date Received: 09/14/18 09:15

Lab Sample ID: 400-159160-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	411759	09/15/18 07:36	BAW	TAL PEN

Client Sample ID: GWC-20
Date Collected: 09/13/18 10:10
Date Received: 09/14/18 09:15

Lab Sample ID: 400-159160-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	411759	09/15/18 07:59	BAW	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-159160-1
SDG: Ash Landfill #4

HPLC/IC

Analysis Batch: 411759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-159160-1	GWC-9	Total/NA	Water	300.0	
400-159160-2	GWC-20	Total/NA	Water	300.0	
MB 400-411759/48	Method Blank	Total/NA	Water	300.0	
LCS 400-411759/49	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-411759/50	Lab Control Sample Dup	Total/NA	Water	300.0	
400-159042-A-4 MS	Matrix Spike	Total/NA	Water	300.0	
400-159042-A-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-411759/48
Matrix: Water
Analysis Batch: 411759

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			09/15/18 05:19	1

Lab Sample ID: LCS 400-411759/49
Matrix: Water
Analysis Batch: 411759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.0		mg/L		100	90 - 110

Lab Sample ID: LCSD 400-411759/50
Matrix: Water
Analysis Batch: 411759

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.0		mg/L		100	90 - 110	0	15

Lab Sample ID: 400-159042-A-4 MS
Matrix: Water
Analysis Batch: 411759

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	15		10.0	24.3		mg/L		98	80 - 120

Lab Sample ID: 400-159042-A-4 MSD
Matrix: Water
Analysis Batch: 411759

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	15		10.0	24.3		mg/L		98	80 - 120	0	20

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Peter Adams	Lab PM: Whitmire, Cheyenne R	Carrier Tracking No(s):	COC No:
Client Contact: Ms. Lauren Petty	Phone: 6784679260	E-Mail: cheyenne.whitmire@testamericainc.com		Page 1 of 1
Company: Southern Company				Job #:
Address: PO BOX 2641 GSC8	Due Date Requested:			
City: Birmingham	TAT Requested (days): Rush			
State, Zip: AL, 35291				
Phone: 205-992-5417(Tel)	PO #: SCS10347656			
Email: lmpetty@southernco.com	WO #:			
Project Name: CCR - Plant McIntosh Ash Landfill #4	Project #: 40007698			
Site:	SSOW#:			

Analysis Requested

400-159160 COC

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D-Chloride	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
GWC-9-Resample	9/13/18	9:05	G	W	N	N	X		Analyze for only Chloride, rush turnaround time
GWC-20-Resample	9/13/18	10:10	G	W	N	N	X		

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Peter Adams	9/13/18 18:00	GEI			
2	Relinquished by: Fedex	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9-14-18 0915	Company JA-PEN

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: ~~54~~ 596722 | Cooler Temperature(s) °C and Other Remarks: 1.2°C IR-8

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-159160-1
SDG Number: Ash Landfill #4

Login Number: 159160
List Number: 1
Creator: Whitmire, Cheyenne R

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	596722
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.2°C IR-8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant McIntosh

TestAmerica Job ID: 400-159160-1
SDG: Ash Landfill #4

Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-19
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18 *
Kansas	NELAP	7	E-10253	10-31-18
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-18
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA170005	12-31-18
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-18
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-19
Rhode Island	State Program	1	LAO00307	12-30-18
South Carolina	State Program	4	96026	06-30-18 *
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-14	09-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Appendix C

Statistical Analyses

January 2018 Data Statistical Analyses

Interwell Prediction Limit

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 3/28/18, 10:28 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	Transform	Alpha	Method
Boron (mg/L)	GWC-1	0.05	n/a	1/11/2018	0.05ND	No	100	n/a	n/a	89	n/a	0.0001926	NP 1 of 2
Boron (mg/L)	**GWC-10**	**0.05**	**n/a**	**1/11/2018**	**0.06**	**Yes**	**100**	**n/a**	**n/a**	**89**	**n/a**	**0.0001926**	NP 1 of 2
Boron (mg/L)	GWC-11	0.05	n/a	1/11/2018	0.05ND	No	100	n/a	n/a	89	n/a	0.0001926	NP 1 of 2
Boron (mg/L)	GWC-12	0.05	n/a	1/11/2018	0.05ND	No	100	n/a	n/a	89	n/a	0.0001926	NP 1 of 2
Boron (mg/L)	GWC-19	0.05	n/a	1/12/2018	0.05ND	No	100	n/a	n/a	89	n/a	0.0001926	NP 1 of 2
Boron (mg/L)	GWC-20	0.05	n/a	1/12/2018	0.05ND	No	100	n/a	n/a	89	n/a	0.0001926	NP 1 of 2
Boron (mg/L)	GWC-21	0.05	n/a	1/11/2018	0.05ND	No	100	n/a	n/a	89	n/a	0.0001926	NP 1 of 2
Boron (mg/L)	GWC-23	0.05	n/a	1/12/2018	0.05ND	No	100	n/a	n/a	89	n/a	0.0001926	NP 1 of 2
Boron (mg/L)	GWC-9	0.05	n/a	1/12/2018	0.05ND	No	100	n/a	n/a	89	n/a	0.0001926	NP 1 of 2
Calcium (mg/L)	GWC-1	33.2	n/a	1/11/2018	2.4	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Calcium (mg/L)	GWC-10	33.2	n/a	1/11/2018	15	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Calcium (mg/L)	GWC-11	33.2	n/a	1/11/2018	9.3	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Calcium (mg/L)	GWC-12	33.2	n/a	1/11/2018	0.78	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Calcium (mg/L)	GWC-19	33.2	n/a	1/12/2018	9.5	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Calcium (mg/L)	GWC-20	33.2	n/a	1/12/2018	1.7	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Calcium (mg/L)	GWC-21	33.2	n/a	1/11/2018	1	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Calcium (mg/L)	GWC-23	33.2	n/a	1/12/2018	1.4	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Calcium (mg/L)	GWC-9	33.2	n/a	1/12/2018	0.4	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Chloride (mg/L)	GWC-1	9.4	n/a	1/11/2018	7.5	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Chloride (mg/L)	GWC-10	9.4	n/a	1/11/2018	5.9	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Chloride (mg/L)	GWC-11	9.4	n/a	1/11/2018	4.3	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Chloride (mg/L)	GWC-12	9.4	n/a	1/11/2018	3.4	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Chloride (mg/L)	GWC-19	9.4	n/a	1/12/2018	9	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Chloride (mg/L)	GWC-20	9.4	n/a	1/12/2018	9	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Chloride (mg/L)	GWC-21	9.4	n/a	1/11/2018	5.8	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Chloride (mg/L)	GWC-23	9.4	n/a	1/12/2018	4.3	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Chloride (mg/L)	GWC-9	9.4	n/a	1/12/2018	9	No	100	n/a	n/a	0	n/a	0.0001926	NP 1 of 2
Fluoride (mg/L)	GWC-1	0.74	n/a	1/11/2018	0.2ND	No	100	n/a	n/a	72	n/a	0.0001926	NP 1 of 2
Fluoride (mg/L)	GWC-10	0.74	n/a	1/11/2018	0.15	No	100	n/a	n/a	72	n/a	0.0001926	NP 1 of 2
Fluoride (mg/L)	GWC-11	0.74	n/a	1/11/2018	0.31	No	100	n/a	n/a	72	n/a	0.0001926	NP 1 of 2
Fluoride (mg/L)	GWC-12	0.74	n/a	1/11/2018	0.2ND	No	100	n/a	n/a	72	n/a	0.0001926	NP 1 of 2
Fluoride (mg/L)	GWC-19	0.74	n/a	1/12/2018	0.083	No	100	n/a	n/a	72	n/a	0.0001926	NP 1 of 2
Fluoride (mg/L)	GWC-20	0.74	n/a	1/12/2018	0.2ND	No	100	n/a	n/a	72	n/a	0.0001926	NP 1 of 2
Fluoride (mg/L)	GWC-21	0.74	n/a	1/11/2018	0.2ND	No	100	n/a	n/a	72	n/a	0.0001926	NP 1 of 2
Fluoride (mg/L)	GWC-23	0.74	n/a	1/12/2018	0.2ND	No	100	n/a	n/a	72	n/a	0.0001926	NP 1 of 2
Fluoride (mg/L)	GWC-9	0.74	n/a	1/12/2018	0.2ND	No	100	n/a	n/a	72	n/a	0.0001926	NP 1 of 2
pH (S.U.)	GWC-1	7.1	4.21	1/11/2018	5.02	No	110	n/a	n/a	0	n/a	0.0003273	NP 1 of 2
pH (S.U.)	GWC-10	7.1	4.21	1/11/2018	6.32	No	110	n/a	n/a	0	n/a	0.0003273	NP 1 of 2
pH (S.U.)	GWC-11	7.1	4.21	1/11/2018	6.15	No	110	n/a	n/a	0	n/a	0.0003273	NP 1 of 2
pH (S.U.)	GWC-12	7.1	4.21	1/11/2018	5.13	No	110	n/a	n/a	0	n/a	0.0003273	NP 1 of 2
pH (S.U.)	GWC-19	7.1	4.21	10/17/2017	5.68	No	110	n/a	n/a	0	n/a	0.0003273	NP 1 of 2
pH (S.U.)	GWC-20	7.1	4.21	1/12/2018	4.97	No	110	n/a	n/a	0	n/a	0.0003273	NP 1 of 2
pH (S.U.)	GWC-21	7.1	4.21	1/11/2018	4.98	No	110	n/a	n/a	0	n/a	0.0003273	NP 1 of 2
pH (S.U.)	GWC-23	7.1	4.21	1/12/2018	5.35	No	110	n/a	n/a	0	n/a	0.0003273	NP 1 of 2
pH (S.U.)	GWC-9	7.1	4.21	1/12/2018	4.83	No	110	n/a	n/a	0	n/a	0.0003273	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-1	150	n/a	1/11/2018	100	No	100	n/a	n/a	15	n/a	0.0001926	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-10	150	n/a	1/11/2018	150	No	100	n/a	n/a	15	n/a	0.0001926	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-11	150	n/a	1/11/2018	10	No	100	n/a	n/a	15	n/a	0.0001926	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-12	150	n/a	1/11/2018	34	No	100	n/a	n/a	15	n/a	0.0001926	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-19	150	n/a	1/12/2018	81	No	100	n/a	n/a	15	n/a	0.0001926	NP 1 of 2

Interwell Prediction Limit

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 3/28/18, 10:28 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	Transform	Alpha	Method
Total Dissolved Solids (mg/L)	GWC-20	150	n/a	1/12/2018	56	No	100	n/a	n/a	15	n/a	0.0001926	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-21	150	n/a	1/11/2018	20	No	100	n/a	n/a	15	n/a	0.0001926	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-23	150	n/a	1/12/2018	43	No	100	n/a	n/a	15	n/a	0.0001926	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-9	150	n/a	1/12/2018	48	No	100	n/a	n/a	15	n/a	0.0001926	NP 1 of 2

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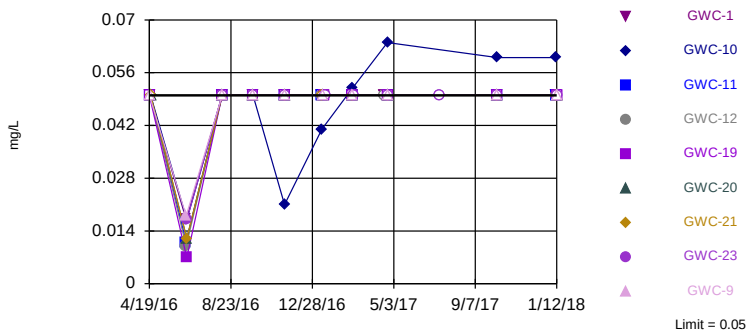
Hollow symbols indicate censored values.

Exceeds Limit: GWC-10

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 100 background values. 89% NDs. Annual per-constituent alpha = 0.003461. Individual comparison alpha = 0.0001926 (1 of 2). Comparing 9 points to limit.

Constituent: Boron Analysis Run 3/28/18 10:22 AM Plant

McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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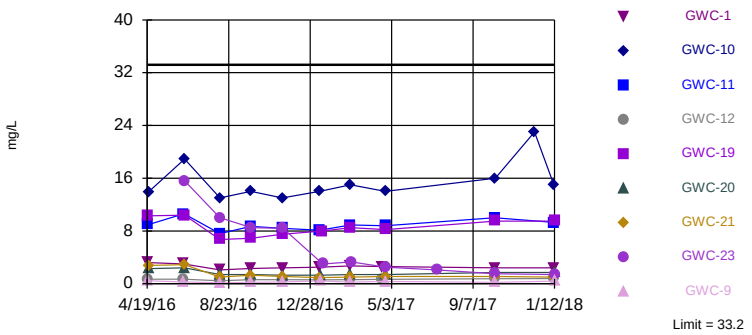
Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 100 background values. Annual per-constituent alpha = 0.003461. Individual comparison alpha = 0.0001926 (1 of 2). Comparing 9 points to limit.

Constituent: Calcium Analysis Run 3/28/18 10:22 AM Plant

McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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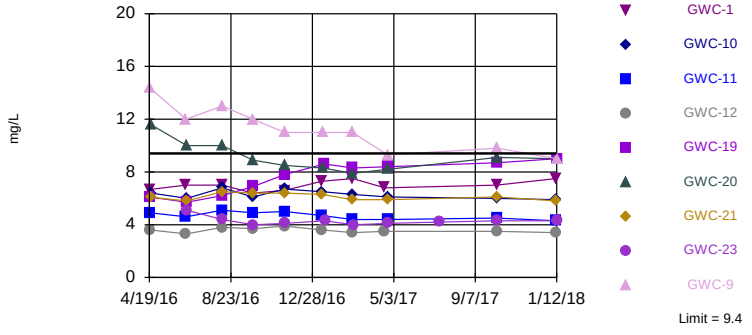
Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 100 background values. Annual per-constituent alpha = 0.003461. Individual comparison alpha = 0.0001926 (1 of 2). Comparing 9 points to limit.

Constituent: Chloride Analysis Run 3/28/18 10:22 AM Plant

McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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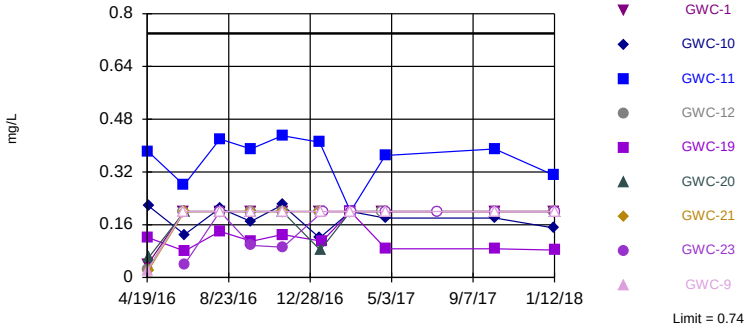
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 100 background values. 72% NDs. Annual per-constituent alpha = 0.003461. Individual comparison alpha = 0.0001926 (1 of 2). Comparing 9 points to limit.

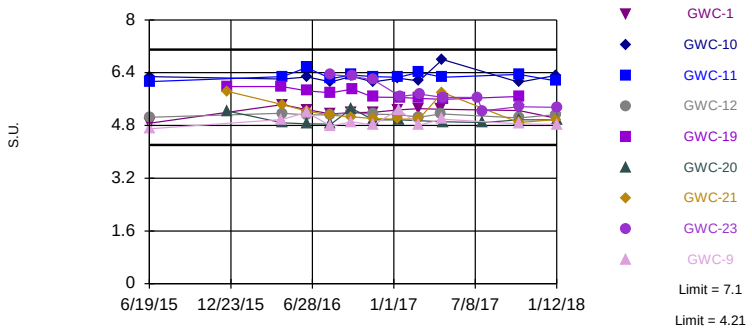
Constituent: Fluoride Analysis Run 3/28/18 10:22 AM Plant

McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limits

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limits are highest and lowest of 110 background values. Annual per-constituent alpha = 0.005883. Individual comparison alpha = 0.0003273 (1 of 2). Comparing 9 points to limit.

Constituent: pH Analysis Run 3/28/18 10:22 AM

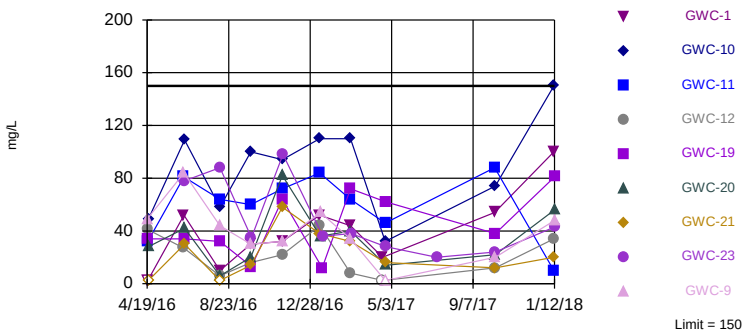
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 100 background values. 15% NDs. Annual per-constituent alpha = 0.003461. Individual comparison alpha = 0.0001926 (1 of 2). Comparing 9 points to limit.

Constituent: Total Dissolved Solids Analysis Run 3/28/18 10:22 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Intrawell Prediction Limit

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/23/2019, 2:48 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	Transform	Alpha	Method
Sulfate (mg/L)	GWA-13	1	n/a	1/10/2018	1ND	No	8	n/a	n/a	75	n/a	0.005912	NP (NDs) 1 of 3
Sulfate (mg/L)	GWA-14	6.412	n/a	1/11/2018	1ND	No	8	2.496	1.809	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWA-2	3.549	n/a	1/10/2018	1ND	No	8	0.6652	0.5631	37.5	sqrt(x)	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWA-3	1.804	n/a	1/10/2018	1.1	No	8	0.6388	0.5387	37.5	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-1	2.52	n/a	1/11/2018	1.6	No	8	1.434	0.502	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-10	4.711	n/a	1/11/2018	2.6	No	8	3.129	0.7312	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-11	5.636	n/a	1/11/2018	3.5	No	8	2.133	0.1116	0	sqrt(x)	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-17	2.932	n/a	1/11/2018	1ND	No	8	1.538	0.6444	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-18	9	n/a	1/12/2018	4.5	No	8	n/a	n/a	0	n/a	0.005912	NP (normality) 1 of 3
Sulfate (mg/L)	GWC-19	2.985	n/a	1/12/2018	1.5	No	8	2.214	0.3563	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-20	5.531	n/a	1/12/2018	0.86	No	8	2.656	1.329	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-21	2.03	n/a	1/11/2018	1ND	No	8	1.268	0.3526	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-23	9.2	n/a	1/12/2018	1.9	No	8	n/a	n/a	0	n/a	0.005912	NP (normality) 1 of 3
Sulfate (mg/L)	GWC-9	7.168	n/a	1/12/2018	1ND	No	8	1.056	0.7492	25	sqrt(x)	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-4A[*GWB-4A]	9.68	n/a	1/10/2018	7.6	No	8	5.789	1.798	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-5[*GWB-5]	1	n/a	1/10/2018	1ND	No	8	n/a	n/a	75	n/a	0.005912	NP (NDs) 1 of 3
Sulfate (mg/L)	GWC-15[*GWB-15]	1	n/a	1/11/2018	1ND	No	8	n/a	n/a	75	n/a	0.005912	NP (NDs) 1 of 3
Sulfate (mg/L)	GWA-16[*GWB-16]	1	n/a	1/11/2018	1ND	No	8	n/a	n/a	75	n/a	0.005912	NP (NDs) 1 of 3

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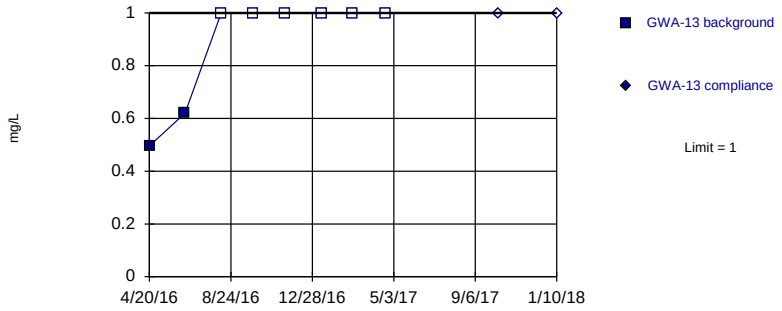
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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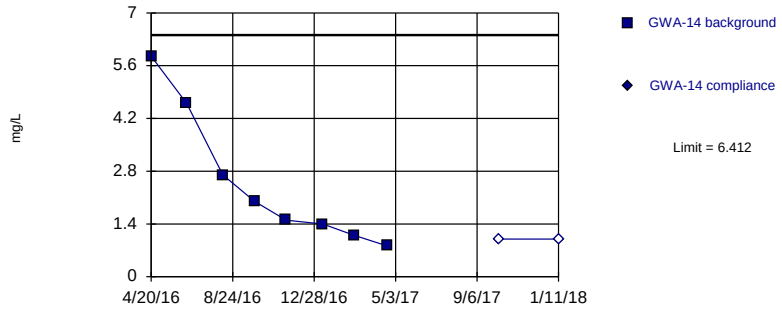
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.496, Std. Dev.=1.809, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8473, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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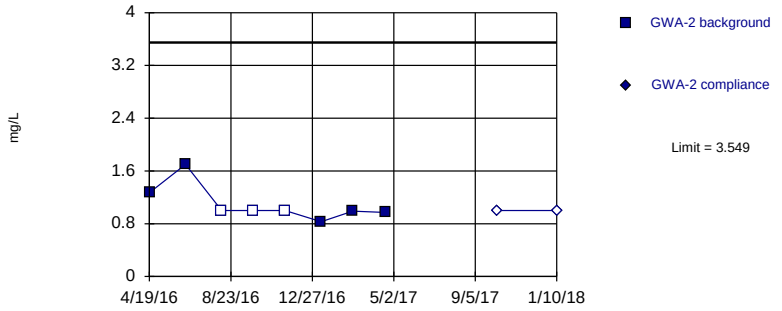
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation) (after Aitchison`s Adjustment): Mean=0.6652, Std. Dev.=0.5631, n=8, 37.5% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7755, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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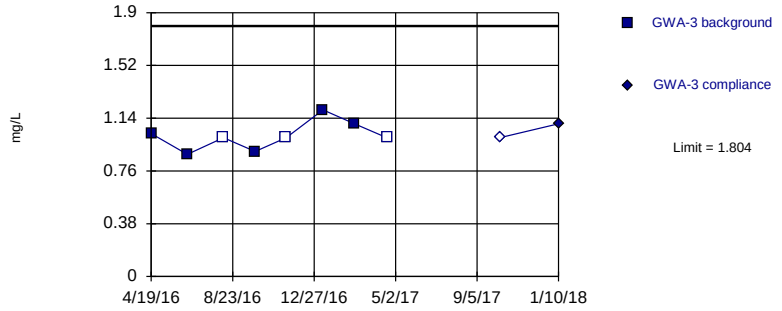
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Aitchison`s Adjustment): Mean=0.6388, Std. Dev.=0.5387, n=8, 37.5% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9315, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

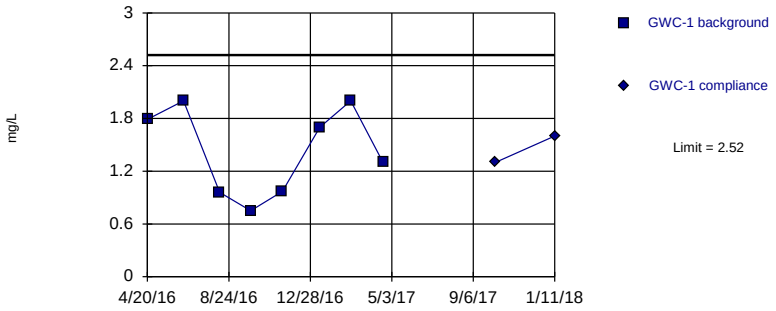
Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.434, Std. Dev.=0.502, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8871, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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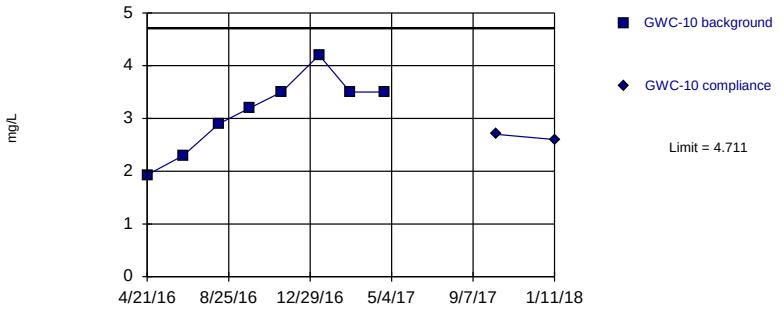
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=3.129, Std. Dev.=0.7312, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9393, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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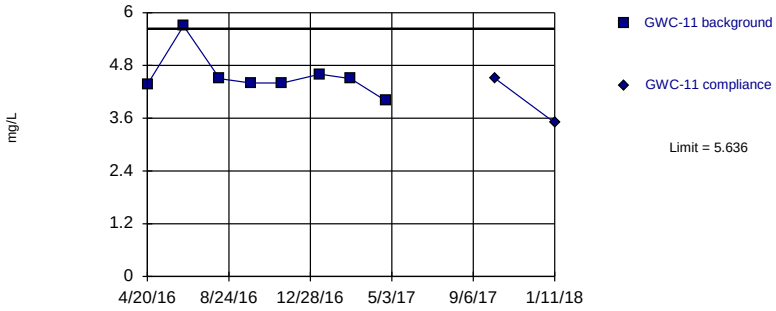
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=2.133, Std. Dev.=0.1116, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7586, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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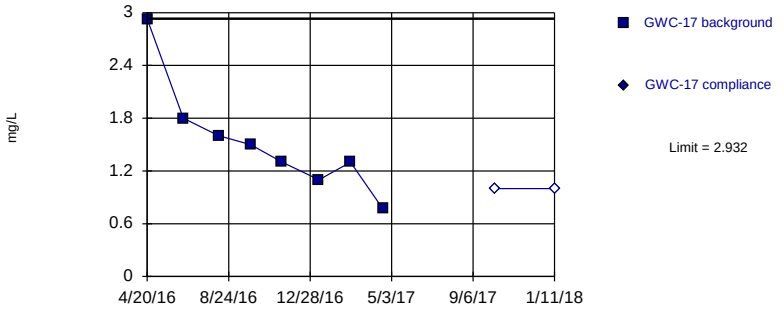
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.538, Std. Dev.=0.6444, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8722, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

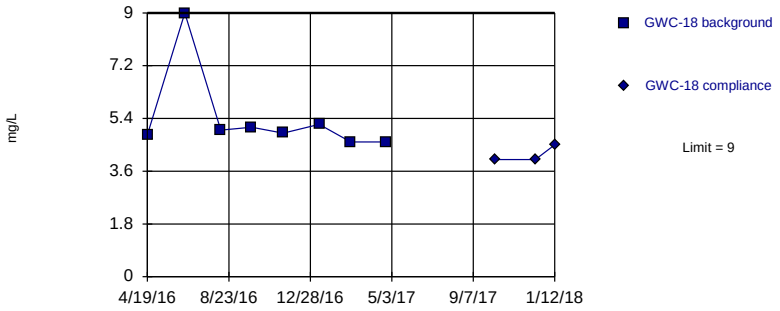
Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

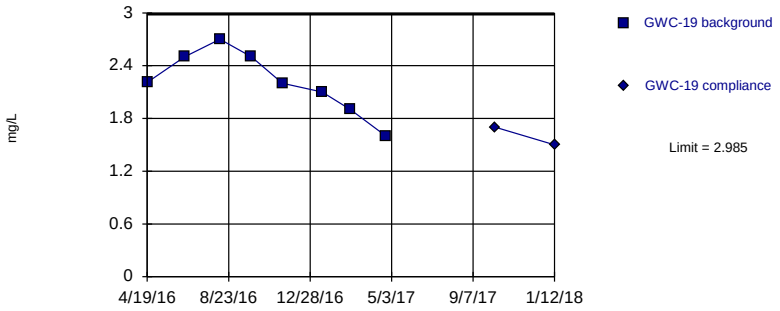
Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.214, Std. Dev.=0.3563, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9647, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

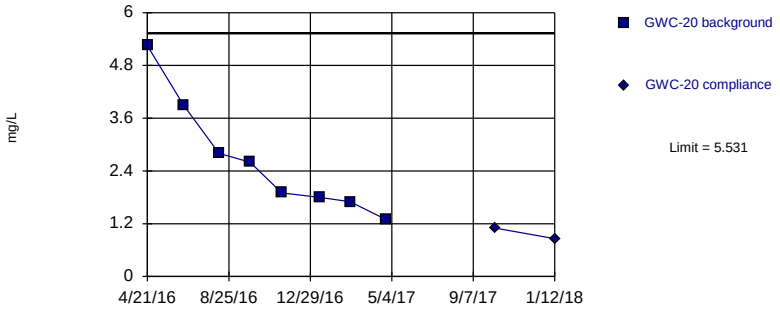
Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.656, Std. Dev.=1.329, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8814, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

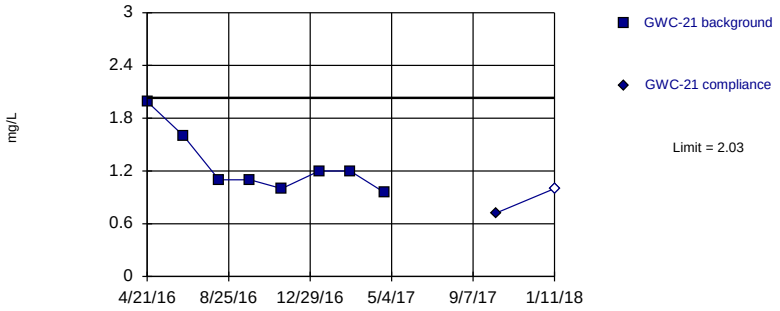
Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.268, Std. Dev.=0.3526, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8153, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

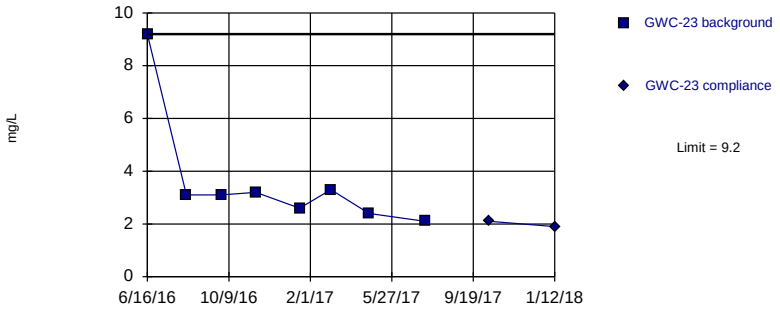
Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

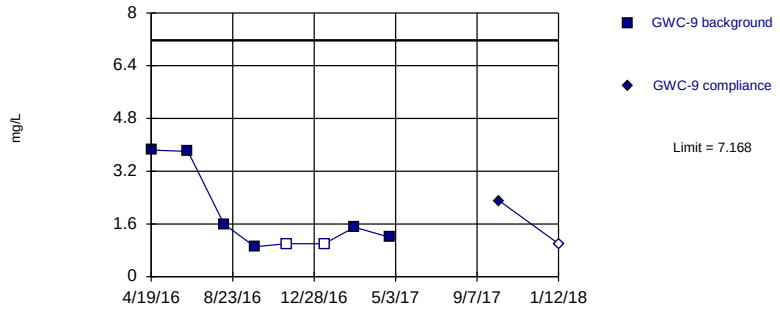
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation) (after Aitchison`s Adjustment): Mean=1.056, Std. Dev.=0.7492, n=8, 25% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7687, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

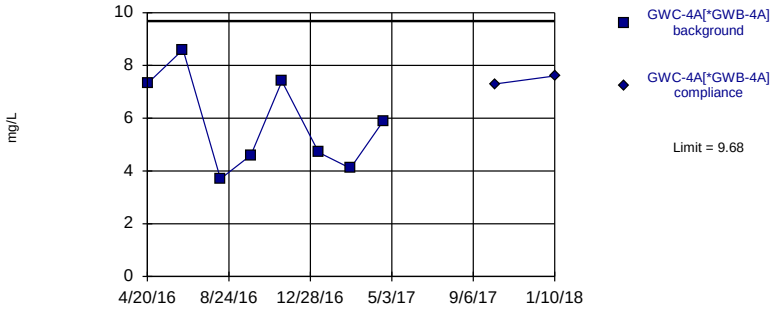
Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=5.789, Std. Dev.=1.798, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9142, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

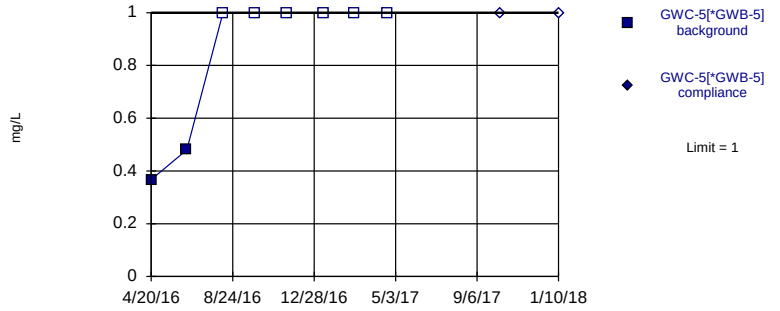
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

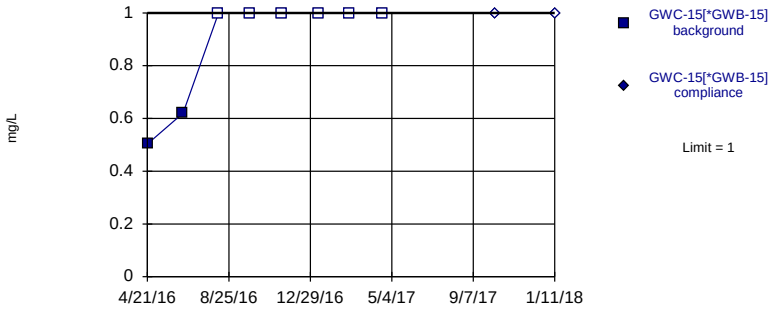
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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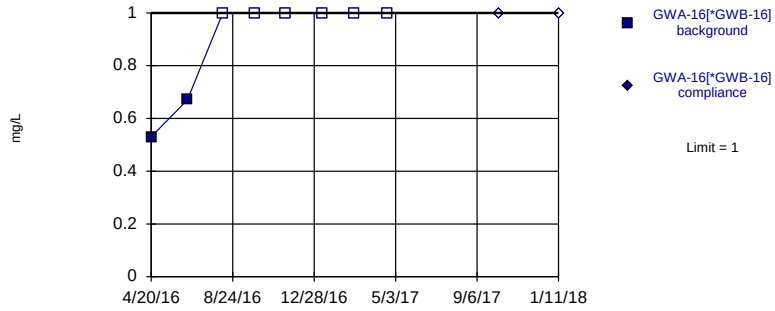
Hollow symbols indicate censored values.
Within Limit
Prediction Limit
Intrawell Non-parametric

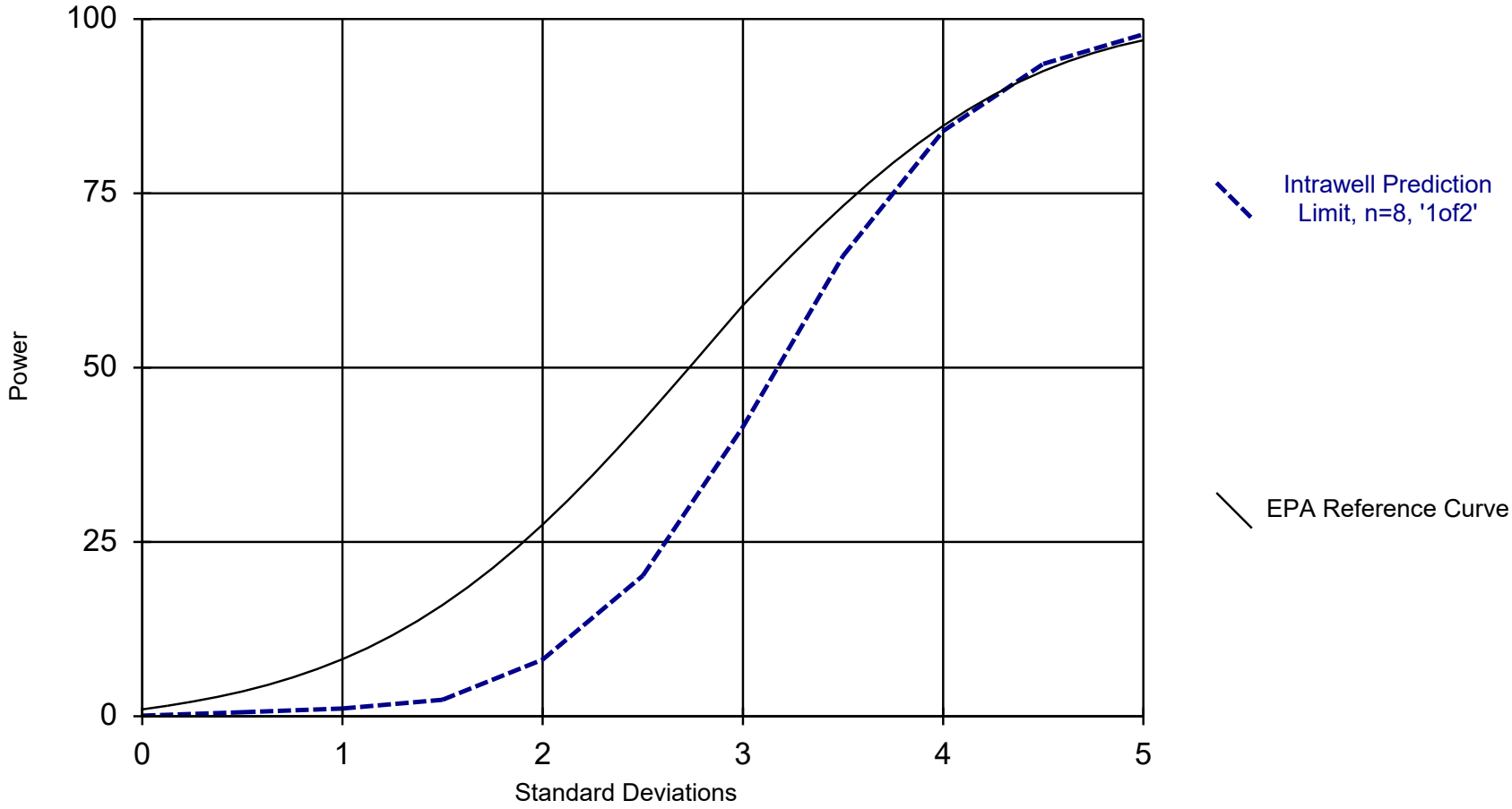


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/23/2019 2:47 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Power Curve



Kappa = 3.074, based on 9 compliance wells and 7 constituents, evaluated semi-annually (this report reflects annual total).

Analysis Run 1/28/2019 2:00 PM

Plant McIntosh Client: Southern Company Data: McIntosh No 4_CCR

Box & Whiskers Plot

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/23/2019, 2:01 PM

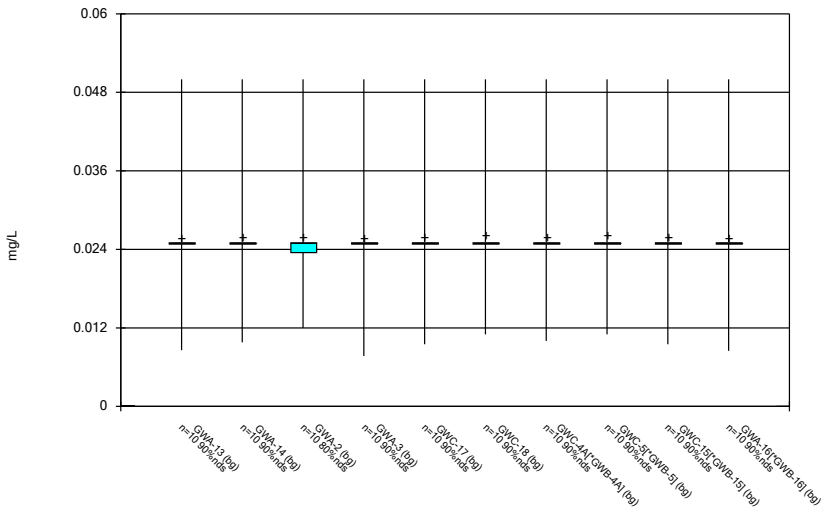
Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Boron (mg/L)	GWA-13 (bg)	10	0.02586	0.009925	0.003139	0.025	0.0086	0.05	90
Boron (mg/L)	GWA-14 (bg)	10	0.02598	0.009698	0.003067	0.025	0.0098	0.05	90
Boron (mg/L)	GWA-2 (bg)	10	0.0259	0.009398	0.002972	0.025	0.012	0.05	80
Boron (mg/L)	GWA-3 (bg)	10	0.02577	0.0101	0.003194	0.025	0.0077	0.05	90
Boron (mg/L)	GWC-17 (bg)	10	0.02595	0.009754	0.003084	0.025	0.0095	0.05	90
Boron (mg/L)	GWC-18 (bg)	10	0.0261	0.00948	0.002998	0.025	0.011	0.05	90
Boron (mg/L)	GWC-4A[*GWB-4A] (bg)	10	0.026	0.009661	0.003055	0.025	0.01	0.05	90
Boron (mg/L)	GWC-5[*GWB-5] (bg)	10	0.0261	0.00948	0.002998	0.025	0.011	0.05	90
Boron (mg/L)	GWC-15[*GWB-15] (bg)	10	0.02595	0.009754	0.003084	0.025	0.0095	0.05	90
Boron (mg/L)	GWA-16[*GWB-16] (bg)	10	0.02585	0.009944	0.003145	0.025	0.0085	0.05	90
Calcium (mg/L)	GWA-13 (bg)	10	0.2979	0.07301	0.02309	0.29	0.14	0.389	0
Calcium (mg/L)	GWA-14 (bg)	10	0.5156	0.08237	0.02605	0.5	0.39	0.686	0
Calcium (mg/L)	GWA-2 (bg)	10	0.5805	0.1827	0.05778	0.54	0.24	0.91	0
Calcium (mg/L)	GWA-3 (bg)	10	0.815	0.1445	0.04571	0.755	0.69	1.13	0
Calcium (mg/L)	GWC-17 (bg)	10	2.078	0.1824	0.05769	2.1	1.8	2.48	0
Calcium (mg/L)	GWC-18 (bg)	11	18.2	6.096	1.838	17	12	33.2	0
Calcium (mg/L)	GWC-4A[*GWB-4A] (bg)	10	1.582	0.9399	0.2972	1.11	0.8	3.4	0
Calcium (mg/L)	GWC-5[*GWB-5] (bg)	10	2.879	0.6638	0.2099	2.75	2	4.39	0
Calcium (mg/L)	GWC-15[*GWB-15] (bg)	10	0.4216	0.1356	0.04287	0.405	0.21	0.686	0
Calcium (mg/L)	GWA-16[*GWB-16] (bg)	10	0.3842	0.07482	0.02366	0.395	0.19	0.472	0
Chloride (mg/L)	GWA-13 (bg)	10	3.549	0.1654	0.05229	3.495	3.4	3.8	0
Chloride (mg/L)	GWA-14 (bg)	10	4.245	0.2477	0.07833	4.3	3.9	4.55	0
Chloride (mg/L)	GWA-2 (bg)	10	4.871	0.259	0.0819	4.95	4.4	5.2	0
Chloride (mg/L)	GWA-3 (bg)	10	6.43	1.818	0.575	6.15	4.1	9.4	0
Chloride (mg/L)	GWC-17 (bg)	10	4.205	0.2061	0.06517	4.15	3.9	4.5	0
Chloride (mg/L)	GWC-18 (bg)	10	4.863	0.2931	0.09269	4.85	4.5	5.3	0
Chloride (mg/L)	GWC-4A[*GWB-4A] (bg)	10	3.463	0.3988	0.1261	3.45	2.9	4.2	0
Chloride (mg/L)	GWC-5[*GWB-5] (bg)	10	3.469	0.2045	0.06468	3.5	3.2	3.7	0
Chloride (mg/L)	GWC-15[*GWB-15] (bg)	10	3.689	0.2755	0.08711	3.65	3.3	4	0
Chloride (mg/L)	GWA-16[*GWB-16] (bg)	10	3.732	0.2231	0.07057	3.75	3.4	4	0
Fluoride (mg/L)	GWA-13 (bg)	10	0.09165	0.03524	0.01115	0.1	0.018	0.15	90
Fluoride (mg/L)	GWA-14 (bg)	10	0.0921	0.03435	0.01086	0.1	0.021	0.15	90
Fluoride (mg/L)	GWA-2 (bg)	10	0.0805	0.03253	0.01029	0.1	0.02	0.1	80
Fluoride (mg/L)	GWA-3 (bg)	10	0.0922	0.03412	0.01079	0.1	0.022	0.15	90
Fluoride (mg/L)	GWC-17 (bg)	10	0.1327	0.02337	0.007391	0.13	0.1	0.16	10
Fluoride (mg/L)	GWC-18 (bg)	11	0.6315	0.07547	0.02275	0.61	0.51	0.74	0
Fluoride (mg/L)	GWC-4A[*GWB-4A] (bg)	10	0.0928	0.03277	0.01036	0.1	0.028	0.15	90
Fluoride (mg/L)	GWC-5[*GWB-5] (bg)	10	0.0937	0.03118	0.009861	0.1	0.032	0.15	90
Fluoride (mg/L)	GWC-15[*GWB-15] (bg)	10	0.0919	0.03481	0.01101	0.1	0.019	0.15	90
Fluoride (mg/L)	GWA-16[*GWB-16] (bg)	10	0.0922	0.03412	0.01079	0.1	0.022	0.15	90
pH (S.U.)	GWA-13 (bg)	11	5.044	0.1513	0.04561	5.02	4.86	5.35	0
pH (S.U.)	GWA-14 (bg)	11	5.36	0.1453	0.0438	5.32	5.19	5.74	0
pH (S.U.)	GWA-2 (bg)	11	4.828	0.137	0.04132	4.8	4.59	4.99	0
pH (S.U.)	GWA-3 (bg)	11	4.94	0.2738	0.08256	4.95	4.21	5.25	0
pH (S.U.)	GWC-17 (bg)	11	5.235	0.07891	0.02379	5.25	5.09	5.36	0
pH (S.U.)	GWC-18 (bg)	11	6.618	0.2199	0.06632	6.53	6.42	7.1	0
pH (S.U.)	GWC-4A[*GWB-4A] (bg)	11	5.335	0.3709	0.1118	5.37	4.9	5.94	0
pH (S.U.)	GWC-5[*GWB-5] (bg)	11	5.625	0.1474	0.04444	5.59	5.44	5.95	0
pH (S.U.)	GWC-15[*GWB-15] (bg)	11	5.121	0.1459	0.04399	5.1	4.95	5.47	0
pH (S.U.)	GWA-16[*GWB-16] (bg)	11	5.105	0.07776	0.02345	5.11	4.97	5.26	0

Box & Whiskers Plot

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/23/2019, 2:01 PM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Sulfate (mg/L)	GWA-13 (bg)	10	0.5116	0.03811	0.01205	0.5	0.496	0.62	80
Sulfate (mg/L)	GWA-14 (bg)	10	2.097	1.804	0.5705	1.45	0.5	5.85	20
Sulfate (mg/L)	GWA-2 (bg)	10	0.826	0.4137	0.1308	0.665	0.5	1.7	50
Sulfate (mg/L)	GWA-3 (bg)	10	0.821	0.2915	0.09219	0.89	0.5	1.2	40
Sulfate (mg/L)	GWC-17 (bg)	10	1.33	0.7172	0.2268	1.3	0.5	2.93	20
Sulfate (mg/L)	GWC-18 (bg)	11	5.067	1.364	0.4113	4.84	4	9	0
Sulfate (mg/L)	GWC-4A[*GWB-4A] (bg)	10	6.121	1.735	0.5487	6.6	3.7	8.6	0
Sulfate (mg/L)	GWC-5[*GWB-5] (bg)	10	0.4847	0.04183	0.01323	0.5	0.367	0.5	80
Sulfate (mg/L)	GWC-15[*GWB-15] (bg)	10	0.5123	0.03785	0.01197	0.5	0.5	0.62	80
Sulfate (mg/L)	GWA-16[*GWB-16] (bg)	10	0.52	0.05354	0.01693	0.5	0.5	0.67	80
Total Dissolved Solids (mg/L)	GWA-13 (bg)	10	16.6	14.24	4.502	11.25	2.5	47	20
Total Dissolved Solids (mg/L)	GWA-14 (bg)	10	21.4	18	5.692	16	2.5	65	20
Total Dissolved Solids (mg/L)	GWA-2 (bg)	10	19.55	15.69	4.961	13.25	6	55	10
Total Dissolved Solids (mg/L)	GWA-3 (bg)	10	24.45	9.901	3.131	24	12.5	46	10
Total Dissolved Solids (mg/L)	GWC-17 (bg)	10	27.65	24.83	7.851	22	2.5	85	10
Total Dissolved Solids (mg/L)	GWC-18 (bg)	10	92.5	35	11.07	90	43	150	0
Total Dissolved Solids (mg/L)	GWC-4A[*GWB-4A] (bg)	10	29.8	18.58	5.876	26	2.5	67	20
Total Dissolved Solids (mg/L)	GWC-5[*GWB-5] (bg)	10	25.9	20.17	6.379	22.25	2.5	62	20
Total Dissolved Solids (mg/L)	GWC-15[*GWB-15] (bg)	10	21.45	19.8	6.26	14.25	4	58	10
Total Dissolved Solids (mg/L)	GWA-16[*GWB-16] (bg)	10	16.85	19.67	6.221	9.25	2.5	67	30

Box & Whiskers Plot



Constituent: Boron Analysis Run 1/23/2019 2:01 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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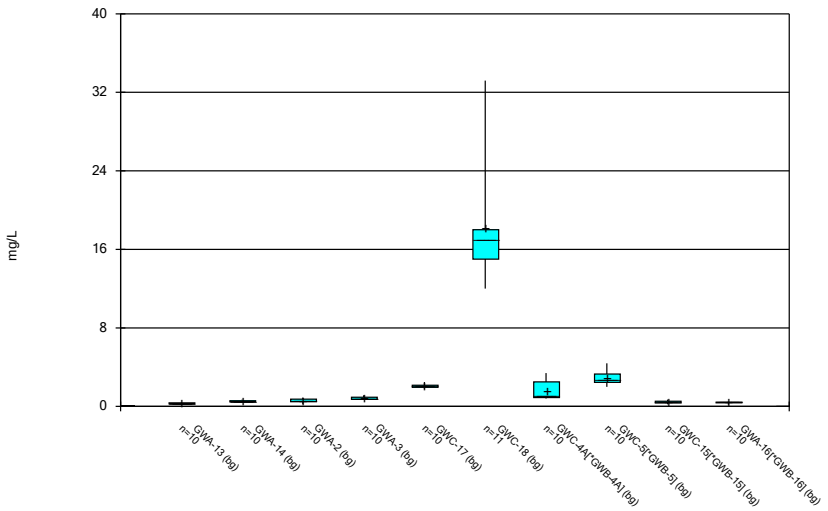
Box & Whiskers Plot



Constituent: Calcium Analysis Run 1/23/2019 2:01 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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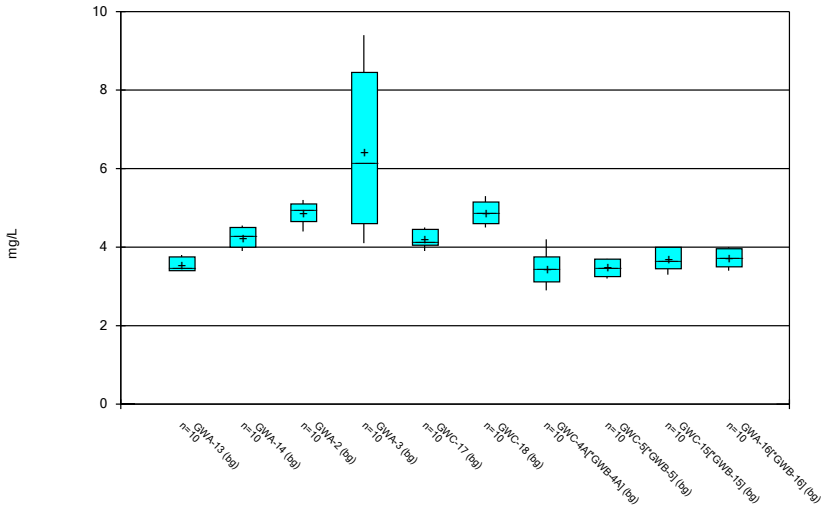

Constituent: Chloride Analysis Run 1/23/2019 2:01 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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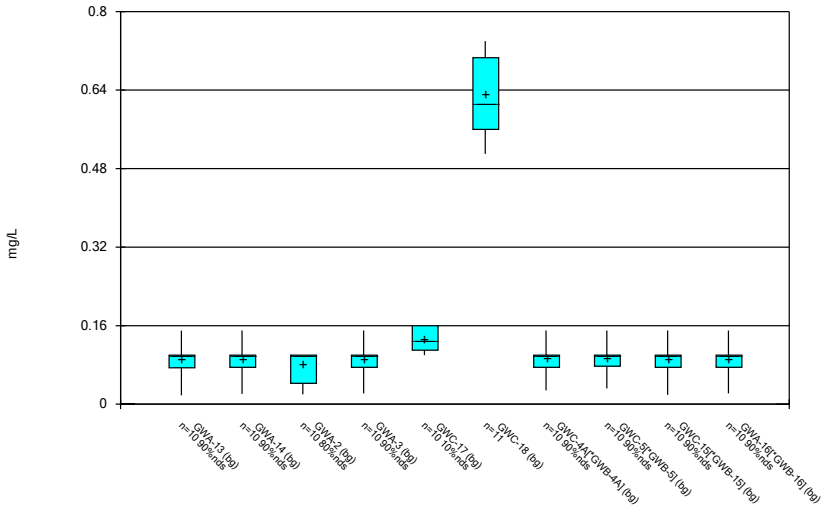
Box & Whiskers Plot



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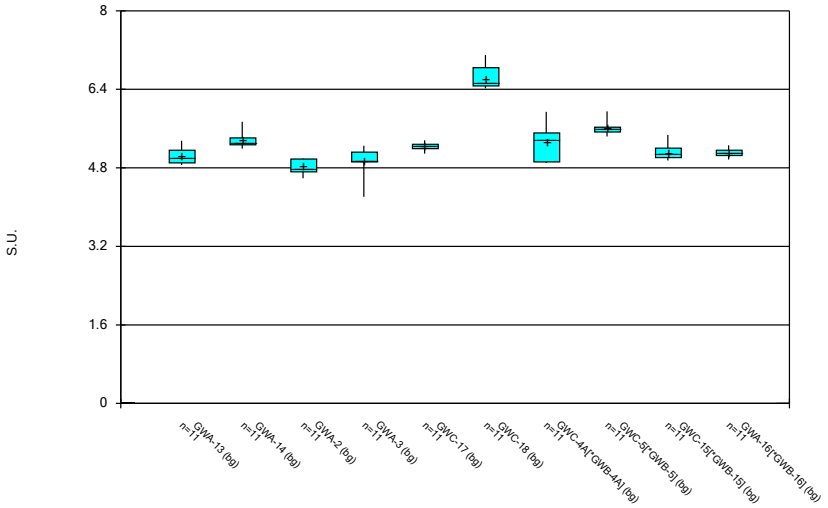
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Box & Whiskers Plot



Constituent: pH Analysis Run 1/23/2019 2:01 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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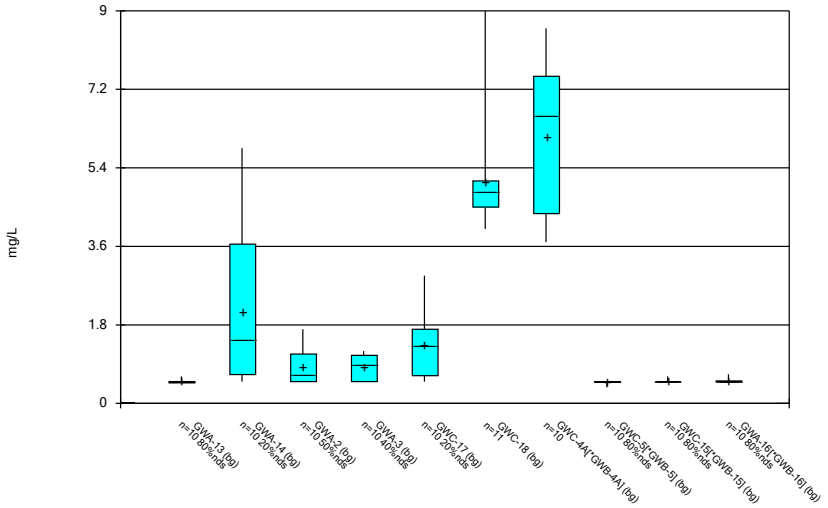
Box & Whiskers Plot



Constituent: Sulfate Analysis Run 1/23/2019 2:01 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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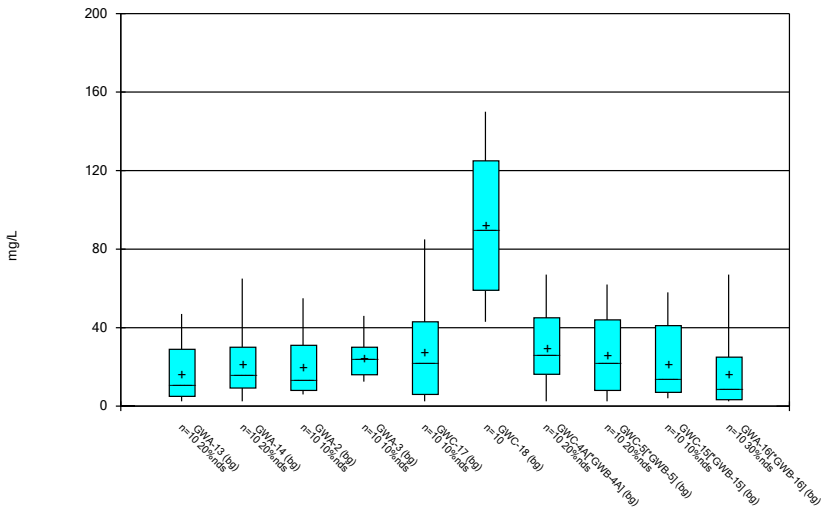
Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 1/23/2019 2:01 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Box & Whiskers Plot

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/23/2019, 2:41 PM

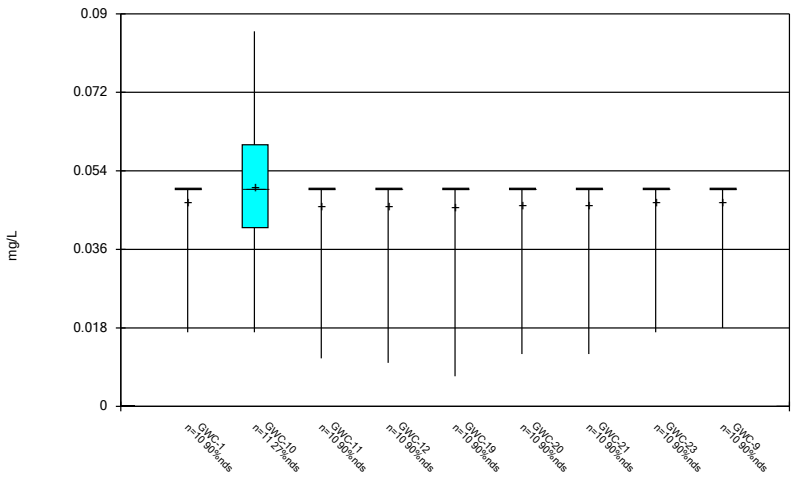
Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Boron (mg/L)	GWC-1	10	0.0467	0.01044	0.0033	0.05	0.017	0.05	90
Boron (mg/L)	GWC-10	11	0.05009	0.01925	0.005805	0.05	0.017	0.086	27.27
Boron (mg/L)	GWC-11	10	0.0461	0.01233	0.0039	0.05	0.011	0.05	90
Boron (mg/L)	GWC-12	10	0.046	0.01265	0.004	0.05	0.01	0.05	90
Boron (mg/L)	GWC-19	10	0.04569	0.01363	0.00431	0.05	0.0069	0.05	90
Boron (mg/L)	GWC-20	10	0.0462	0.01202	0.0038	0.05	0.012	0.05	90
Boron (mg/L)	GWC-21	10	0.0462	0.01202	0.0038	0.05	0.012	0.05	90
Boron (mg/L)	GWC-23	10	0.0467	0.01044	0.0033	0.05	0.017	0.05	90
Boron (mg/L)	GWC-9	10	0.0468	0.01012	0.0032	0.05	0.018	0.05	90
Calcium (mg/L)	GWC-1	10	2.562	0.335	0.1059	2.45	2.1	3.22	0
Calcium (mg/L)	GWC-10	11	15.44	3.005	0.9062	14	13	23	0
Calcium (mg/L)	GWC-11	11	9.122	1.037	0.3128	8.9	7.6	11	0
Calcium (mg/L)	GWC-12	10	0.645	0.09384	0.02967	0.63	0.45	0.78	0
Calcium (mg/L)	GWC-19	11	8.6	1.274	0.3842	8.5	6.7	10.4	0
Calcium (mg/L)	GWC-20	10	1.629	0.4038	0.1277	1.4	1.3	2.4	0
Calcium (mg/L)	GWC-21	10	1.42	0.7557	0.239	1.1	0.93	2.9	0
Calcium (mg/L)	GWC-23	10	5.63	4.76	1.505	3.15	1.4	15.6	0
Calcium (mg/L)	GWC-9	10	0.2921	0.0998	0.03156	0.27	0.13	0.431	0
Chloride (mg/L)	GWC-1	10	6.978	0.3723	0.1177	7	6.4	7.5	0
Chloride (mg/L)	GWC-10	10	6.281	0.3124	0.0988	6.2	5.9	6.8	0
Chloride (mg/L)	GWC-11	10	4.68	0.2821	0.08919	4.65	4.3	5.1	0
Chloride (mg/L)	GWC-12	10	3.571	0.1891	0.05979	3.55	3.3	3.9	0
Chloride (mg/L)	GWC-19	10	7.57	1.231	0.3893	8.05	5.7	9	0
Chloride (mg/L)	GWC-20	10	9.15	1.113	0.3519	8.95	7.9	11.6	0
Chloride (mg/L)	GWC-21	10	6.118	0.2661	0.08414	6.09	5.8	6.5	0
Chloride (mg/L)	GWC-23	10	4.28	0.319	0.1009	4.25	4	5.1	0
Chloride (mg/L)	GWC-9	11	11.14	1.634	0.4925	11	9	14.4	0
Fluoride (mg/L)	GWC-1	10	0.184	0.0506	0.016	0.2	0.04	0.2	90
Fluoride (mg/L)	GWC-10	10	0.1777	0.03546	0.01121	0.18	0.12	0.22	10
Fluoride (mg/L)	GWC-11	11	0.3694	0.07834	0.02362	0.39	0.2	0.48	9.091
Fluoride (mg/L)	GWC-12	10	0.1826	0.05502	0.0174	0.2	0.026	0.2	90
Fluoride (mg/L)	GWC-19	10	0.1149	0.0365	0.01154	0.11	0.08	0.2	10
Fluoride (mg/L)	GWC-20	10	0.1743	0.05445	0.01722	0.2	0.06	0.2	80
Fluoride (mg/L)	GWC-21	10	0.1822	0.05629	0.0178	0.2	0.022	0.2	90
Fluoride (mg/L)	GWC-23	10	0.1629	0.06156	0.01947	0.2	0.04	0.2	70
Fluoride (mg/L)	GWC-9	10	0.182	0.05692	0.018	0.2	0.02	0.2	90
pH (S.U.)	GWC-1	11	5.205	0.1518	0.04577	5.25	4.87	5.43	0
pH (S.U.)	GWC-10	11	6.264	0.1933	0.05828	6.23	6.11	6.8	0
pH (S.U.)	GWC-11	11	6.293	0.118	0.03558	6.28	6.13	6.55	0
pH (S.U.)	GWC-12	11	5.116	0.05163	0.01557	5.13	5.03	5.19	0
pH (S.U.)	GWC-19	10	5.77	0.1496	0.04731	5.735	5.59	5.98	0
pH (S.U.)	GWC-20	11	4.983	0.1559	0.047	4.97	4.84	5.32	0
pH (S.U.)	GWC-21	11	5.213	0.3338	0.1006	5.06	4.89	5.84	0
pH (S.U.)	GWC-23	10	5.75	0.3964	0.1253	5.665	5.24	6.34	0
pH (S.U.)	GWC-9	11	4.922	0.1794	0.05408	4.85	4.7	5.28	0
Sulfate (mg/L)	GWC-1	10	1.437	0.4484	0.1418	1.45	0.75	2	0
Sulfate (mg/L)	GWC-10	10	3.033	0.6761	0.2138	3.05	1.93	4.2	0
Sulfate (mg/L)	GWC-11	10	4.447	0.5486	0.1735	4.45	3.5	5.7	0
Sulfate (mg/L)	GWC-12	10	0.9401	0.1347	0.0426	1	0.601	1	80
Sulfate (mg/L)	GWC-19	10	2.091	0.4098	0.1296	2.15	1.5	2.7	0

Box & Whiskers Plot

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/23/2019, 2:41 PM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Sulfate (mg/L)	GWC-20	10	2.321	1.37	0.4331	1.85	0.86	5.25	0
Sulfate (mg/L)	GWC-21	10	1.186	0.3613	0.1143	1.1	0.72	1.99	10
Sulfate (mg/L)	GWC-23	10	3.3	2.135	0.6753	2.85	1.9	9.2	0
Sulfate (mg/L)	GWC-9	10	1.815	1.136	0.3592	1.35	0.91	3.84	30
Total Dissolved Solids (mg/L)	GWC-1	10	39.9	27.46	8.685	38	5	100	10
Total Dissolved Solids (mg/L)	GWC-10	11	94.18	38.22	11.52	100	32	150	0
Total Dissolved Solids (mg/L)	GWC-11	11	60.82	23.48	7.08	64	10	88	0
Total Dissolved Solids (mg/L)	GWC-12	10	21.5	14.49	4.581	19	5	44	10
Total Dissolved Solids (mg/L)	GWC-19	10	44.2	24.13	7.632	36	12	81	0
Total Dissolved Solids (mg/L)	GWC-20	10	34.6	22.23	7.03	32	6	82	0
Total Dissolved Solids (mg/L)	GWC-21	10	23	16.63	5.258	18	5	58	20
Total Dissolved Solids (mg/L)	GWC-23	10	48.8	28.27	8.939	37	20	98	0
Total Dissolved Solids (mg/L)	GWC-9	10	40	21.39	6.764	39	5	84	10

Box & Whiskers Plot



Constituent: Boron Analysis Run 1/23/2019 2:37 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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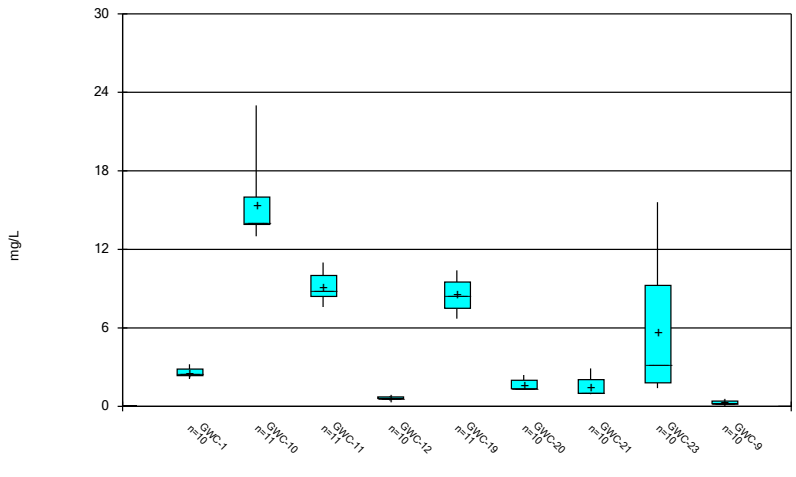
Box & Whiskers Plot



Constituent: Calcium Analysis Run 1/23/2019 2:37 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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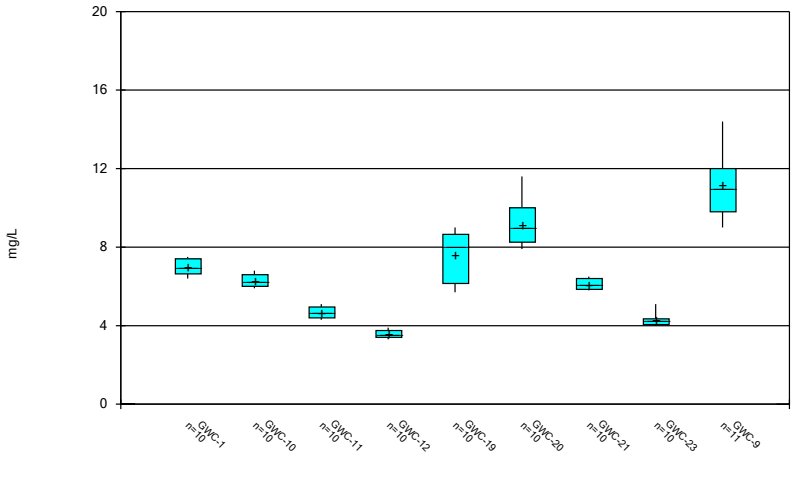
Box & Whiskers Plot



Constituent: Chloride Analysis Run 1/23/2019 2:37 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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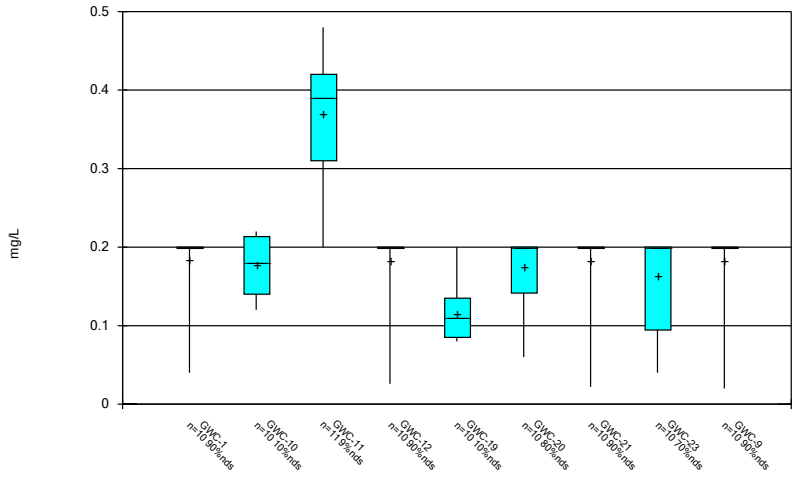
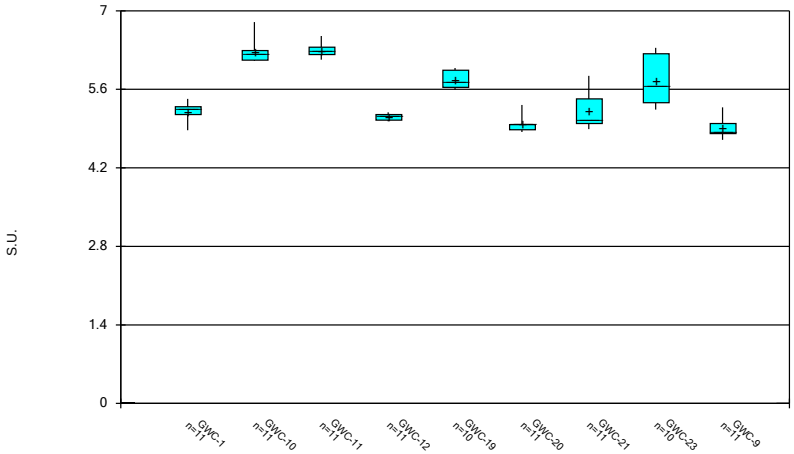
Box & Whiskers Plot



Constituent: Fluoride Analysis Run 1/23/2019 2:37 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Box & Whiskers Plot



Constituent: pH Analysis Run 1/23/2019 2:38 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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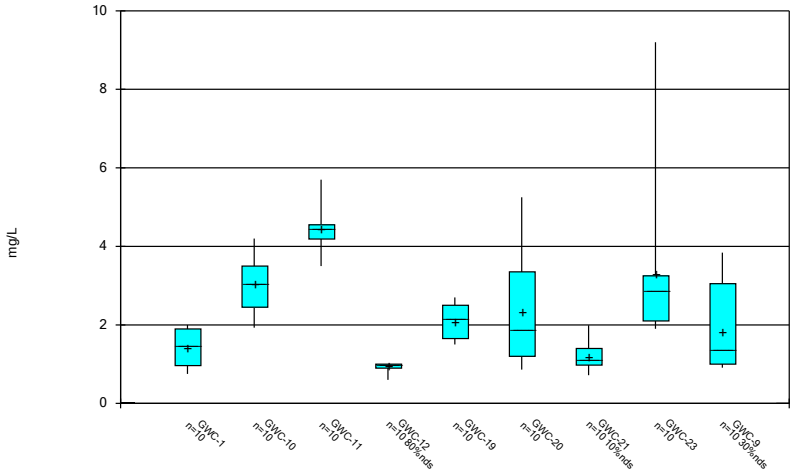
Box & Whiskers Plot



Constituent: Sulfate Analysis Run 1/23/2019 2:38 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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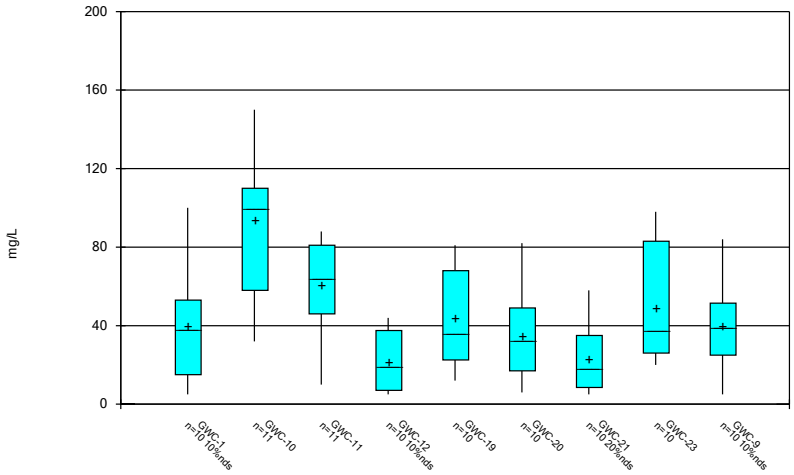
Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 1/23/2019 2:38 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

July 2018 Data Statistical Analyses

Interwell Prediction Limit

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/24/19 , 10:57 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	Transform	Alpha	Method
Boron (mg/L)	GWC-1	0.05	n/a	7/12/2018	0.05ND	No	110	n/a	n/a	90	n/a	0.0001636	NP 1 of 2
Boron (mg/L)	**GWC-10**	**0.05**	**n/a**	**7/12/2018**	**0.054**	**Yes**	**110**	**n/a**	**n/a**	**90**	**n/a**	**0.0001636**	NP 1 of 2
Boron (mg/L)	GWC-11	0.05	n/a	7/12/2018	0.05ND	No	110	n/a	n/a	90	n/a	0.0001636	NP 1 of 2
Boron (mg/L)	GWC-12	0.05	n/a	7/12/2018	0.05ND	No	110	n/a	n/a	90	n/a	0.0001636	NP 1 of 2
Boron (mg/L)	GWC-19	0.05	n/a	7/11/2018	0.05ND	No	110	n/a	n/a	90	n/a	0.0001636	NP 1 of 2
Boron (mg/L)	GWC-20	0.05	n/a	7/11/2018	0.05ND	No	110	n/a	n/a	90	n/a	0.0001636	NP 1 of 2
Boron (mg/L)	GWC-21	0.05	n/a	7/11/2018	0.05ND	No	110	n/a	n/a	90	n/a	0.0001636	NP 1 of 2
Boron (mg/L)	GWC-23	0.05	n/a	7/12/2018	0.05ND	No	110	n/a	n/a	90	n/a	0.0001636	NP 1 of 2
Boron (mg/L)	GWC-9	0.05	n/a	7/12/2018	0.05ND	No	110	n/a	n/a	90	n/a	0.0001636	NP 1 of 2
Calcium (mg/L)	GWC-1	33.2	n/a	7/12/2018	1.8	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Calcium (mg/L)	GWC-10	33.2	n/a	7/12/2018	27	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Calcium (mg/L)	GWC-11	33.2	n/a	7/12/2018	13	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Calcium (mg/L)	GWC-12	33.2	n/a	7/12/2018	0.67	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Calcium (mg/L)	GWC-19	33.2	n/a	7/11/2018	10	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Calcium (mg/L)	GWC-20	33.2	n/a	7/11/2018	1.7	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Calcium (mg/L)	GWC-21	33.2	n/a	7/11/2018	1.1	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Calcium (mg/L)	GWC-23	33.2	n/a	7/12/2018	1.2	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Calcium (mg/L)	GWC-9	33.2	n/a	7/12/2018	0.47	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Chloride (mg/L)	GWC-1	9.4	n/a	7/12/2018	7	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Chloride (mg/L)	GWC-10	9.4	n/a	7/12/2018	5.1	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Chloride (mg/L)	GWC-11	9.4	n/a	7/12/2018	4.3	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Chloride (mg/L)	GWC-12	9.4	n/a	7/12/2018	3.7	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Chloride (mg/L)	GWC-19	9.4	n/a	7/11/2018	9.1	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Chloride (mg/L)	GWC-20	9.4	n/a	9/13/2018	8.9	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Chloride (mg/L)	GWC-21	9.4	n/a	7/11/2018	6.4	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Chloride (mg/L)	GWC-23	9.4	n/a	7/12/2018	4.9	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Chloride (mg/L)	GWC-9	9.4	n/a	9/13/2018	9.1	No	110	n/a	n/a	0	n/a	0.0001636	NP 1 of 2
Fluoride (mg/L)	GWC-1	0.74	n/a	7/12/2018	0.2ND	No	110	n/a	n/a	72.73	n/a	0.0001636	NP 1 of 2
Fluoride (mg/L)	GWC-10	0.74	n/a	7/12/2018	0.13	No	110	n/a	n/a	72.73	n/a	0.0001636	NP 1 of 2
Fluoride (mg/L)	GWC-11	0.74	n/a	7/12/2018	0.25	No	110	n/a	n/a	72.73	n/a	0.0001636	NP 1 of 2
Fluoride (mg/L)	GWC-12	0.74	n/a	7/12/2018	0.2ND	No	110	n/a	n/a	72.73	n/a	0.0001636	NP 1 of 2
Fluoride (mg/L)	GWC-19	0.74	n/a	7/11/2018	0.091	No	110	n/a	n/a	72.73	n/a	0.0001636	NP 1 of 2
Fluoride (mg/L)	GWC-20	0.74	n/a	7/11/2018	0.2ND	No	110	n/a	n/a	72.73	n/a	0.0001636	NP 1 of 2
Fluoride (mg/L)	GWC-21	0.74	n/a	7/11/2018	0.2ND	No	110	n/a	n/a	72.73	n/a	0.0001636	NP 1 of 2
Fluoride (mg/L)	GWC-23	0.74	n/a	7/12/2018	0.2ND	No	110	n/a	n/a	72.73	n/a	0.0001636	NP 1 of 2
Fluoride (mg/L)	GWC-9	0.74	n/a	7/12/2018	0.2ND	No	110	n/a	n/a	72.73	n/a	0.0001636	NP 1 of 2
pH (S.U.)	GWC-1	7.1	4.21	7/12/2018	5.04	No	120	n/a	n/a	0	n/a	0.0002695	NP 1 of 2
pH (S.U.)	GWC-10	7.1	4.21	7/12/2018	6.7	No	120	n/a	n/a	0	n/a	0.0002695	NP 1 of 2
pH (S.U.)	GWC-11	7.1	4.21	7/12/2018	6.63	No	120	n/a	n/a	0	n/a	0.0002695	NP 1 of 2
pH (S.U.)	GWC-12	7.1	4.21	7/12/2018	5.09	No	120	n/a	n/a	0	n/a	0.0002695	NP 1 of 2
pH (S.U.)	GWC-19	7.1	4.21	7/11/2018	5.6	No	120	n/a	n/a	0	n/a	0.0002695	NP 1 of 2
pH (S.U.)	GWC-20	7.1	4.21	7/11/2018	4.89	No	120	n/a	n/a	0	n/a	0.0002695	NP 1 of 2
pH (S.U.)	GWC-21	7.1	4.21	7/11/2018	4.96	No	120	n/a	n/a	0	n/a	0.0002695	NP 1 of 2
pH (S.U.)	GWC-23	7.1	4.21	7/12/2018	5.21	No	120	n/a	n/a	0	n/a	0.0002695	NP 1 of 2
pH (S.U.)	GWC-9	7.1	4.21	7/12/2018	4.8	No	120	n/a	n/a	0	n/a	0.0002695	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-1	150	n/a	7/12/2018	24	No	110	n/a	n/a	15.45	n/a	0.0001636	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-10	150	n/a	7/12/2018	140	No	110	n/a	n/a	15.45	n/a	0.0001636	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-11	150	n/a	7/12/2018	94	No	110	n/a	n/a	15.45	n/a	0.0001636	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-12	150	n/a	7/12/2018	26	No	110	n/a	n/a	15.45	n/a	0.0001636	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-19	150	n/a	7/11/2018	38	No	110	n/a	n/a	15.45	n/a	0.0001636	NP 1 of 2

Interwell Prediction Limit

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/24/19 , 10:57 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	Transform	Alpha	Method
Total Dissolved Solids (mg/L)	GWC-20	150	n/a	7/11/2018	32	No	110	n/a	n/a	15.45	n/a	0.0001636	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-21	150	n/a	7/11/2018	52	No	110	n/a	n/a	15.45	n/a	0.0001636	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-23	150	n/a	7/12/2018	40	No	110	n/a	n/a	15.45	n/a	0.0001636	NP 1 of 2
Total Dissolved Solids (mg/L)	GWC-9	150	n/a	7/12/2018	45	No	110	n/a	n/a	15.45	n/a	0.0001636	NP 1 of 2

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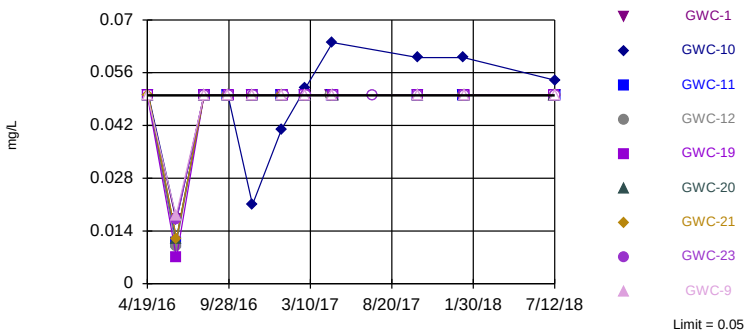
Hollow symbols indicate censored values.

Exceeds Limit: GWC-10

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 110 background values. 90% NDs. Annual per-constituent alpha = 0.002942. Individual comparison alpha = 0.0001636 (1 of 2). Comparing 9 points to limit.

Constituent: Boron Analysis Run 1/24/19 10:56 AM Plant
McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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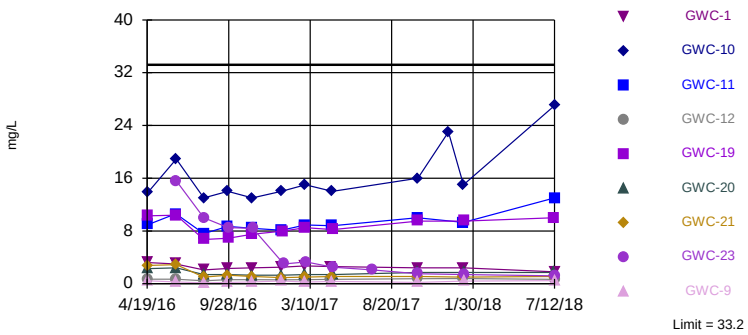
Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 110 background values. Annual per-constituent alpha = 0.002942. Individual comparison alpha = 0.0001636 (1 of 2). Comparing 9 points to limit.

Constituent: Calcium Analysis Run 1/24/19 10:56 AM Plant
McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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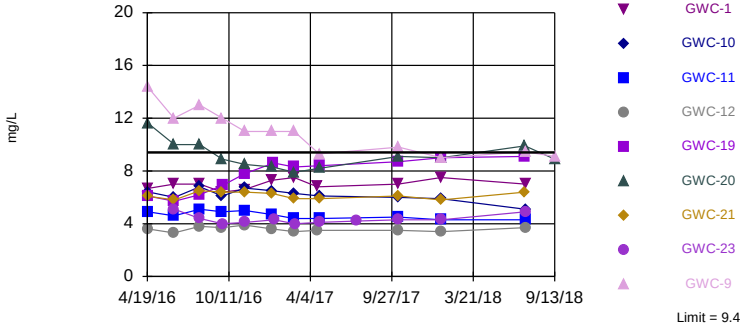
Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 110 background values. Annual per-constituent alpha = 0.002942. Individual comparison alpha = 0.0001636 (1 of 2). Comparing 9 points to limit.

Constituent: Chloride Analysis Run 1/24/19 10:56 AM Plant
McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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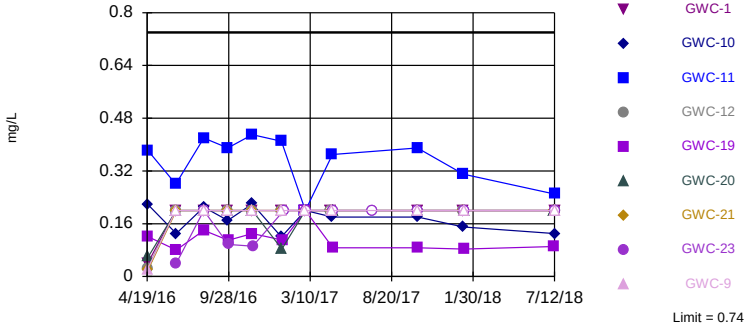
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



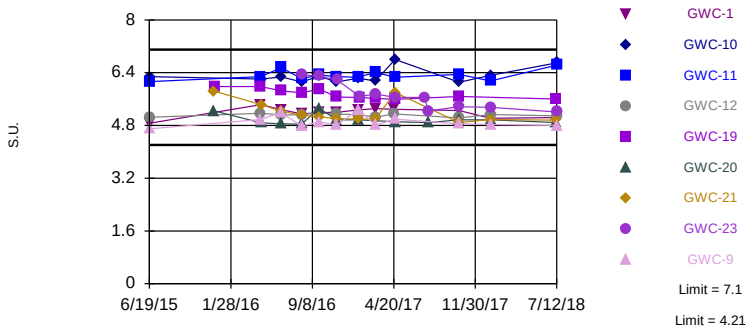
NP test selected by user. Limit is highest of 110 background values. 72.73% NDs. Annual per-constituent alpha = 0.002942. Individual comparison alpha = 0.0001636 (1 of 2). Comparing 9 points to limit.

Constituent: Fluoride Analysis Run 1/24/19 10:56 AM Plant
McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limits

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limits are highest and lowest of 120 background values. Annual per-constituent alpha = 0.004845. Individual comparison alpha = 0.0002695 (1 of 2). Comparing 9 points to limit.

Constituent: pH Analysis Run 1/24/19 10:56 AM

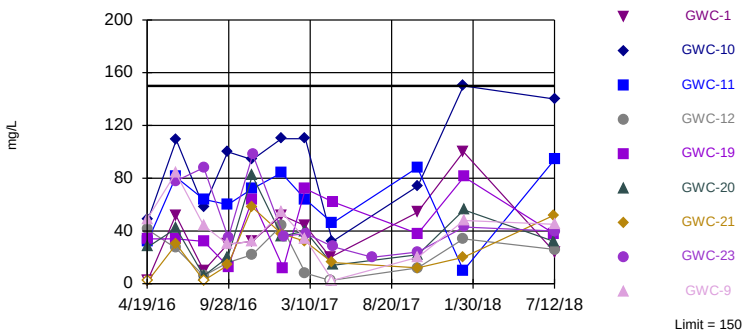
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



NP test selected by user. Limit is highest of 110 background values. 15.45% NDs. Annual per-constituent alpha = 0.002942. Individual comparison alpha = 0.0001636 (1 of 2). Comparing 9 points to limit.

Constituent: Total Dissolved Solids Analysis Run 1/24/19 10:56 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Intrawell Prediction Limit

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/24/2019, 11:10 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	Transform	Alpha	Method
Sulfate (mg/L)	GWA-13	1	n/a	7/11/2018	1ND	No	8	n/a	n/a	75	n/a	0.005912	NP (NDs) 1 of 3
Sulfate (mg/L)	GWA-14	6.412	n/a	7/11/2018	1ND	No	8	2.496	1.809	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWA-2	3.549	n/a	7/11/2018	1ND	No	8	0.6652	0.5631	37.5	sqrt(x)	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWA-3	1.804	n/a	7/11/2018	1ND	No	8	0.6388	0.5387	37.5	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-1	2.52	n/a	7/12/2018	1.1	No	8	1.434	0.502	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	**GWC-10**	**4.711**	**n/a**	**7/12/2018**	**5**	**Yes**	**8**	**3.129**	**0.7312**	**0**	**No**	**0.0008358**	Param 1 of 3
Sulfate (mg/L)	**GWC-11**	**5.636**	**n/a**	**7/12/2018**	**5.9**	**Yes**	**8**	**2.133**	**0.1116**	**0**	**sqrt(x)**	**0.0008358**	Param 1 of 3
Sulfate (mg/L)	GWC-12	1	n/a	7/12/2018	1ND	No	8	n/a	n/a	75	n/a	0.005912	NP (NDs) 1 of 3
Sulfate (mg/L)	GWC-17	2.932	n/a	7/11/2018	1ND	No	8	1.538	0.6444	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-18	9	n/a	7/11/2018	5.2	No	8	n/a	n/a	0	n/a	0.005912	NP (normality) 1 of 3
Sulfate (mg/L)	GWC-19	2.985	n/a	7/11/2018	1.4	No	8	2.214	0.3563	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-20	5.531	n/a	7/11/2018	0.9	No	8	2.656	1.329	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-21	2.03	n/a	7/11/2018	1ND	No	8	1.268	0.3526	0	No	0.0008358	Param 1 of 3
Sulfate (mg/L)	GWC-23	9.2	n/a	7/12/2018	2	No	8	n/a	n/a	0	n/a	0.005912	NP (normality) 1 of 3
Sulfate (mg/L)	GWC-9	7.168	n/a	7/12/2018	1ND	No	8	1.056	0.7492	25	sqrt(x)	0.0008358	Param 1 of 3
Sulfate (mg/L)	**GWC-4A[*GWB-4A]**	**9.68**	**n/a**	**7/11/2018**	**14**	**Yes**	**8**	**5.789**	**1.798**	**0**	**No**	**0.0008358**	Param 1 of 3
Sulfate (mg/L)	GWC-5[*GWB-5]	1	n/a	7/11/2018	1ND	No	8	n/a	n/a	75	n/a	0.005912	NP (NDs) 1 of 3
Sulfate (mg/L)	GWC-15[*GWB-15]	1	n/a	7/11/2018	1ND	No	8	n/a	n/a	75	n/a	0.005912	NP (NDs) 1 of 3
Sulfate (mg/L)	GWA-16[*GWB-16]	1	n/a	7/11/2018	1ND	No	8	n/a	n/a	75	n/a	0.005912	NP (NDs) 1 of 3

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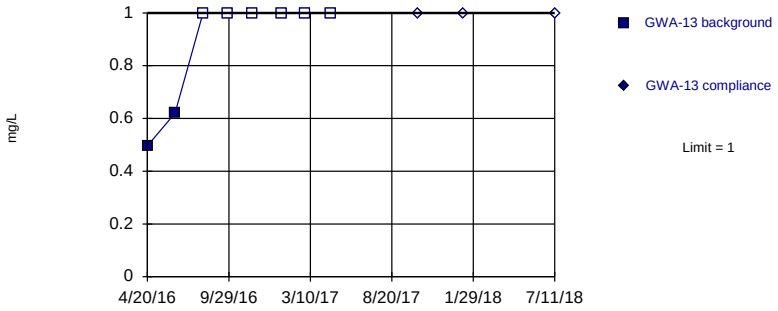
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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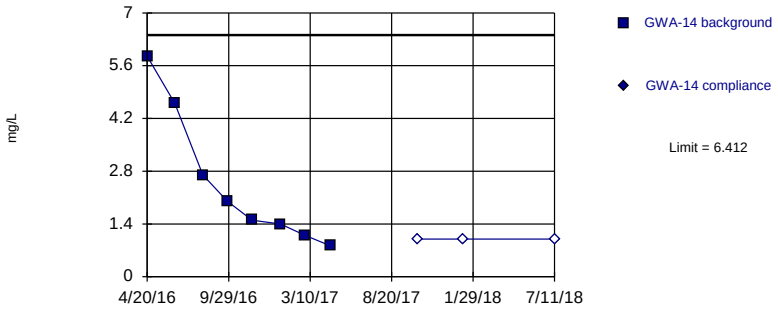
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.496, Std. Dev.=1.809, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8473, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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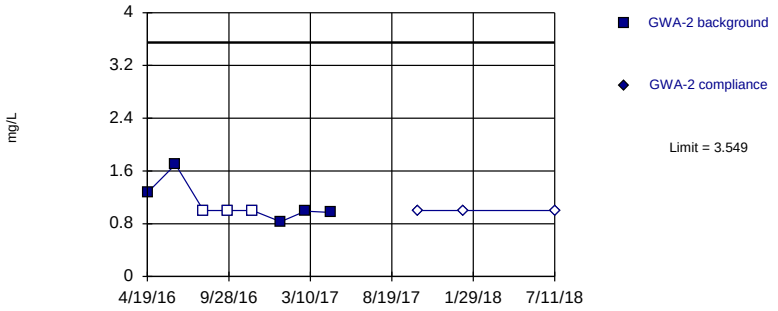
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation) (after Aitchison`s Adjustment): Mean=0.6652, Std. Dev.=0.5631, n=8, 37.5% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7755, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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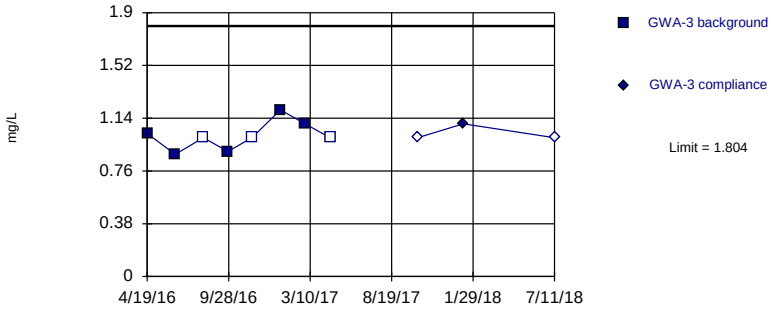
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Aitchison`s Adjustment): Mean=0.6388, Std. Dev.=0.5387, n=8, 37.5% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9315, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

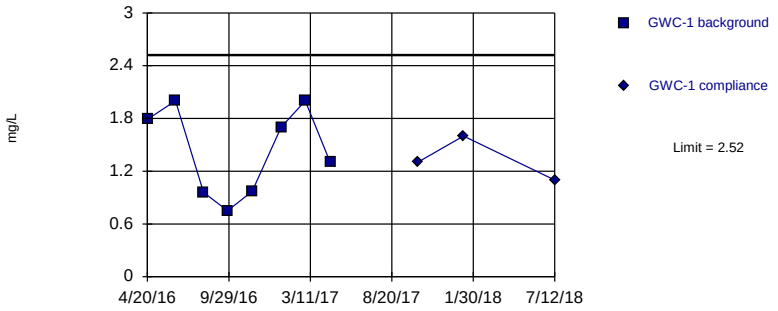
Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.434, Std. Dev.=0.502, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8871, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

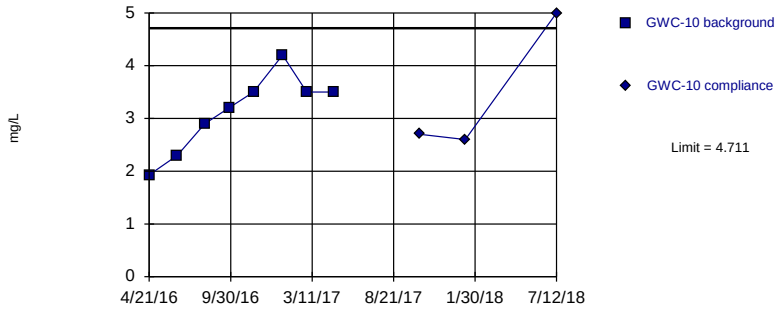
Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=3.129, Std. Dev.=0.7312, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9393, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

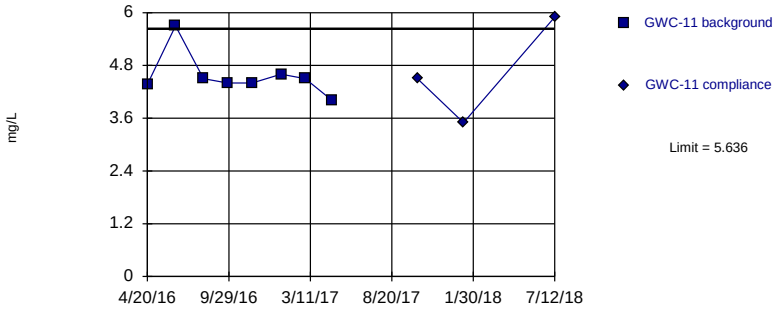
Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=2.133, Std. Dev.=0.1116, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7586, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

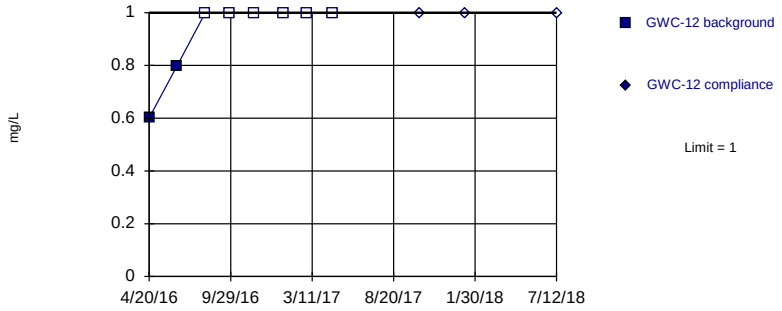
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

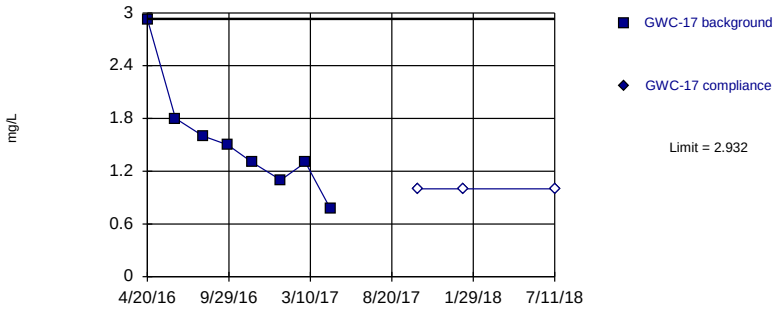
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.538, Std. Dev.=0.6444, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8722, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

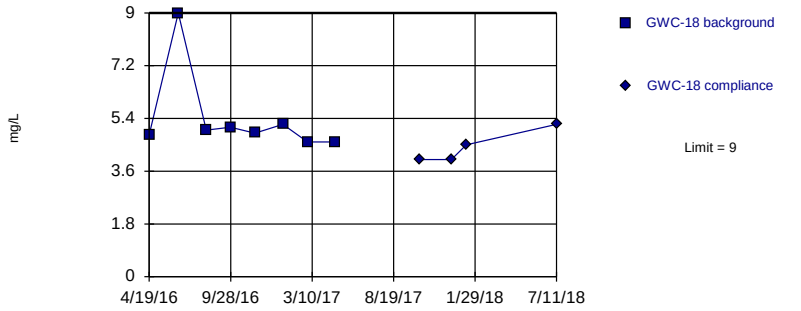
Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

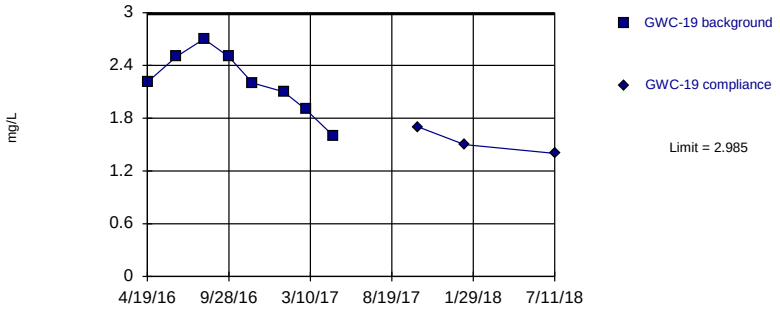
Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.214, Std. Dev.=0.3563, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9647, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

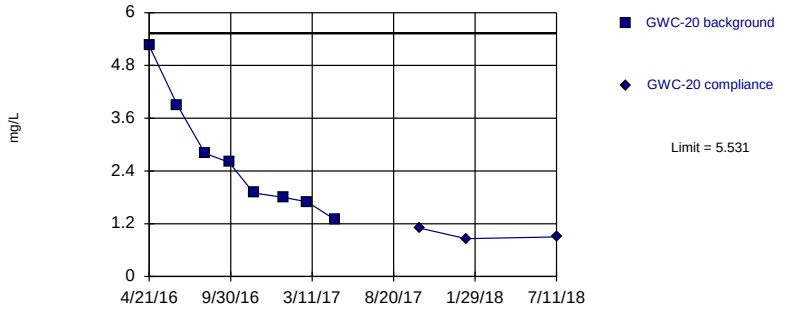
Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.656, Std. Dev.=1.329, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8814, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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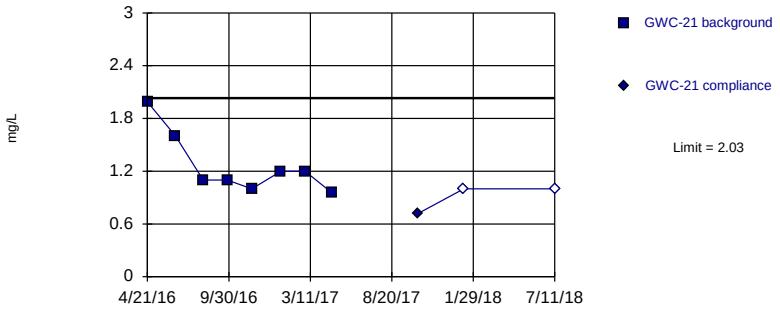
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.268, Std. Dev.=0.3526, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8153, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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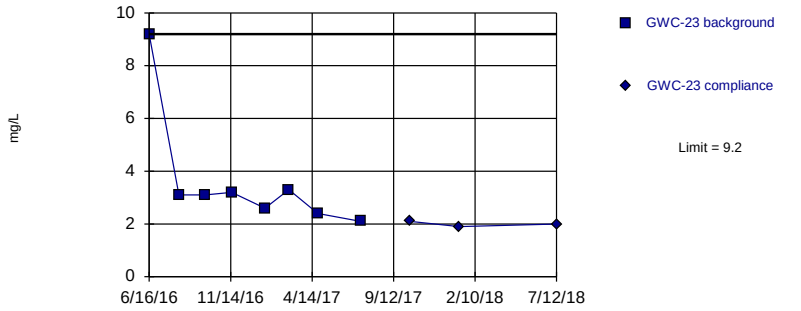
Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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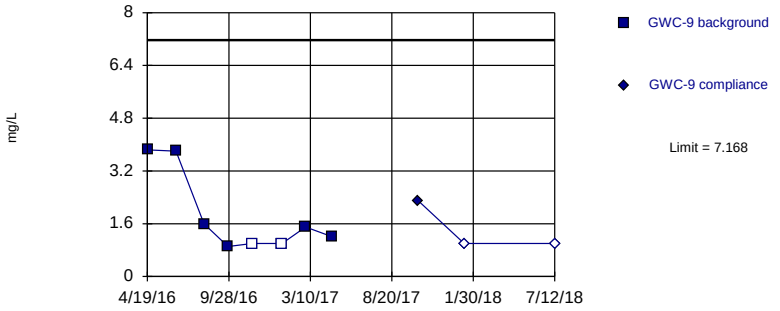
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation) (after Aitchison`s Adjustment): Mean=1.056, Std. Dev.=0.7492, n=8, 25% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7687, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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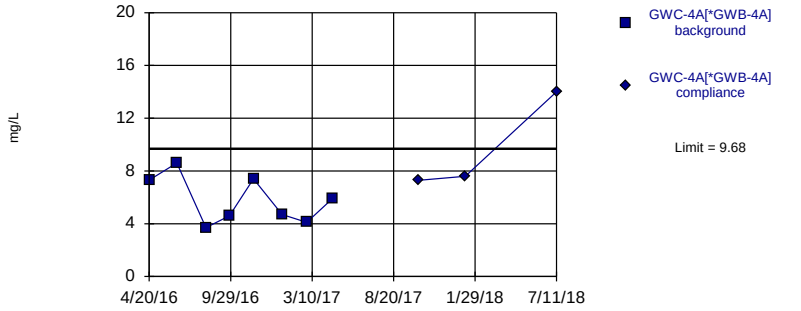
Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=5.789, Std. Dev.=1.798, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9142, critical = 0.749. Kappa = 2.164 (c=7, w=9, 1 of 3, event alpha = 0.05132). Report alpha = 0.0008358.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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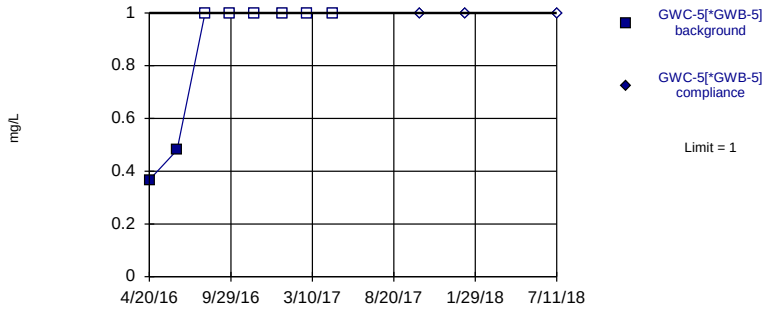
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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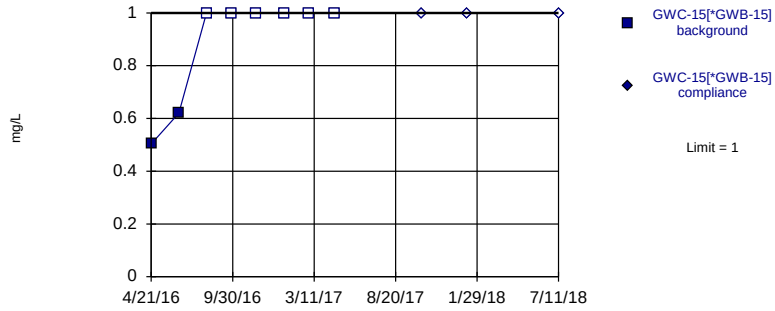
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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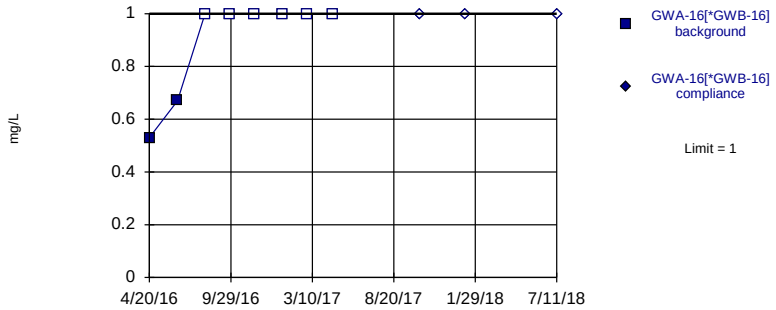
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 1/24/2019 11:09 AM
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Box & Whiskers Plot

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/23/2019, 2:43 PM

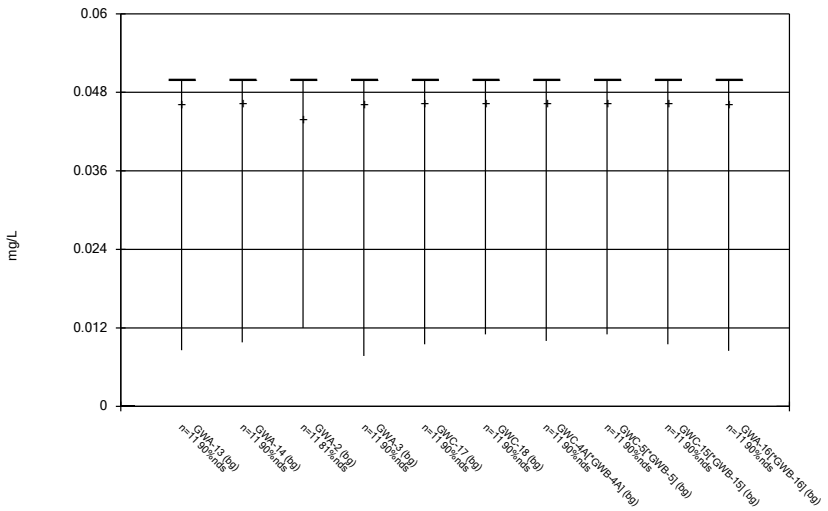
Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Boron (mg/L)	GWA-13 (bg)	11	0.04624	0.01248	0.003764	0.05	0.0086	0.05	90.91
Boron (mg/L)	GWA-14 (bg)	11	0.04635	0.01212	0.003655	0.05	0.0098	0.05	90.91
Boron (mg/L)	GWA-2 (bg)	11	0.044	0.01354	0.004081	0.05	0.012	0.05	81.82
Boron (mg/L)	GWA-3 (bg)	11	0.04615	0.01275	0.003845	0.05	0.0077	0.05	90.91
Boron (mg/L)	GWC-17 (bg)	11	0.04632	0.01221	0.003682	0.05	0.0095	0.05	90.91
Boron (mg/L)	GWC-18 (bg)	11	0.04645	0.01176	0.003545	0.05	0.011	0.05	90.91
Boron (mg/L)	GWC-4A[*GWB-4A] (bg)	11	0.04636	0.01206	0.003636	0.05	0.01	0.05	90.91
Boron (mg/L)	GWC-5[*GWB-5] (bg)	11	0.04645	0.01176	0.003545	0.05	0.011	0.05	90.91
Boron (mg/L)	GWC-15[*GWB-15] (bg)	11	0.04632	0.01221	0.003682	0.05	0.0095	0.05	90.91
Boron (mg/L)	GWA-16[*GWB-16] (bg)	11	0.04623	0.01251	0.003773	0.05	0.0085	0.05	90.91
Calcium (mg/L)	GWA-13 (bg)	11	0.2999	0.06959	0.02098	0.3	0.14	0.389	0
Calcium (mg/L)	GWA-14 (bg)	11	0.5115	0.07934	0.02392	0.5	0.39	0.686	0
Calcium (mg/L)	GWA-2 (bg)	11	0.5732	0.175	0.05277	0.54	0.24	0.91	0
Calcium (mg/L)	GWA-3 (bg)	11	0.8145	0.1371	0.04135	0.76	0.69	1.13	0
Calcium (mg/L)	GWC-17 (bg)	11	2.08	0.1732	0.05222	2.1	1.8	2.48	0
Calcium (mg/L)	GWC-18 (bg)	12	17.68	6.082	1.756	16.5	12	33.2	0
Calcium (mg/L)	GWC-4A[*GWB-4A] (bg)	11	1.529	0.9087	0.274	1.1	0.8	3.4	0
Calcium (mg/L)	GWC-5[*GWB-5] (bg)	11	2.89	0.6308	0.1902	2.8	2	4.39	0
Calcium (mg/L)	GWC-15[*GWB-15] (bg)	11	0.4315	0.1327	0.04001	0.41	0.21	0.686	0
Calcium (mg/L)	GWA-16[*GWB-16] (bg)	11	0.3902	0.0737	0.02222	0.4	0.19	0.472	0
Chloride (mg/L)	GWA-13 (bg)	11	3.535	0.1632	0.0492	3.49	3.4	3.8	0
Chloride (mg/L)	GWA-14 (bg)	11	4.241	0.2354	0.07097	4.3	3.9	4.55	0
Chloride (mg/L)	GWA-2 (bg)	11	4.883	0.2488	0.075	5	4.4	5.2	0
Chloride (mg/L)	GWA-3 (bg)	11	6.236	1.841	0.555	6.1	4.1	9.4	0
Chloride (mg/L)	GWC-17 (bg)	11	4.223	0.2042	0.06156	4.2	3.9	4.5	0
Chloride (mg/L)	GWC-18 (bg)	11	4.866	0.2783	0.08391	4.9	4.5	5.3	0
Chloride (mg/L)	GWC-4A[*GWB-4A] (bg)	11	3.439	0.3865	0.1165	3.4	2.9	4.2	0
Chloride (mg/L)	GWC-5[*GWB-5] (bg)	11	3.472	0.1943	0.05857	3.5	3.2	3.7	0
Chloride (mg/L)	GWC-15[*GWB-15] (bg)	11	3.699	0.2635	0.07943	3.8	3.3	4	0
Chloride (mg/L)	GWA-16[*GWB-16] (bg)	11	3.729	0.2119	0.0639	3.7	3.4	4	0
Fluoride (mg/L)	GWA-13 (bg)	11	0.1835	0.05488	0.01655	0.2	0.018	0.2	90.91
Fluoride (mg/L)	GWA-14 (bg)	11	0.1837	0.05397	0.01627	0.2	0.021	0.2	90.91
Fluoride (mg/L)	GWA-2 (bg)	11	0.1682	0.07083	0.02135	0.2	0.02	0.2	81.82
Fluoride (mg/L)	GWA-3 (bg)	11	0.1838	0.05367	0.01618	0.2	0.022	0.2	90.91
Fluoride (mg/L)	GWC-17 (bg)	11	0.1406	0.02871	0.008657	0.14	0.1	0.2	9.091
Fluoride (mg/L)	GWC-18 (bg)	12	0.6272	0.07347	0.02121	0.61	0.51	0.74	0
Fluoride (mg/L)	GWC-4A[*GWB-4A] (bg)	11	0.1844	0.05186	0.01564	0.2	0.028	0.2	90.91
Fluoride (mg/L)	GWC-5[*GWB-5] (bg)	11	0.1847	0.05065	0.01527	0.2	0.032	0.2	90.91
Fluoride (mg/L)	GWC-15[*GWB-15] (bg)	11	0.1835	0.05457	0.01645	0.2	0.019	0.2	90.91
Fluoride (mg/L)	GWA-16[*GWB-16] (bg)	11	0.1838	0.05367	0.01618	0.2	0.022	0.2	90.91
pH (S.U.)	GWA-13 (bg)	12	5.039	0.1451	0.04188	5.015	4.86	5.35	0
pH (S.U.)	GWA-14 (bg)	12	5.351	0.1421	0.04102	5.32	5.19	5.74	0
pH (S.U.)	GWA-2 (bg)	12	4.822	0.1326	0.03827	4.79	4.59	4.99	0
pH (S.U.)	GWA-3 (bg)	12	4.934	0.2619	0.07559	4.94	4.21	5.25	0
pH (S.U.)	GWC-17 (bg)	12	5.234	0.07525	0.02172	5.24	5.09	5.36	0
pH (S.U.)	GWC-18 (bg)	12	6.582	0.2449	0.0707	6.52	6.18	7.1	0
pH (S.U.)	GWC-4A[*GWB-4A] (bg)	12	5.268	0.4233	0.1222	5.325	4.53	5.94	0
pH (S.U.)	GWC-5[*GWB-5] (bg)	12	5.613	0.1458	0.04209	5.585	5.44	5.95	0
pH (S.U.)	GWC-15[*GWB-15] (bg)	12	5.112	0.1428	0.04121	5.085	4.95	5.47	0
pH (S.U.)	GWA-16[*GWB-16] (bg)	12	5.102	0.07481	0.0216	5.09	4.97	5.26	0

Box & Whiskers Plot

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/23/2019, 2:43 PM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Sulfate (mg/L)	GWA-13 (bg)	11	0.9196	0.1809	0.05455	1	0.496	1	81.82
Sulfate (mg/L)	GWA-14 (bg)	11	2.088	1.667	0.5027	1.4	0.82	5.85	27.27
Sulfate (mg/L)	GWA-2 (bg)	11	1.069	0.2324	0.07008	1	0.83	1.7	54.55
Sulfate (mg/L)	GWA-3 (bg)	11	1.019	0.09016	0.02718	1	0.88	1.2	45.45
Sulfate (mg/L)	GWC-17 (bg)	11	1.391	0.5947	0.1793	1.3	0.77	2.93	27.27
Sulfate (mg/L)	GWC-18 (bg)	12	5.078	1.301	0.3756	4.87	4	9	0
Sulfate (mg/L)	GWC-4A[*GWB-4A] (bg)	11	6.837	2.89	0.8714	7.3	3.7	14	0
Sulfate (mg/L)	GWC-5[*GWB-5] (bg)	11	0.8952	0.2346	0.07073	1	0.367	1	81.82
Sulfate (mg/L)	GWC-15[*GWB-15] (bg)	11	0.9203	0.1793	0.05406	1	0.503	1	81.82
Sulfate (mg/L)	GWA-16[*GWB-16] (bg)	11	0.9273	0.1648	0.04969	1	0.53	1	81.82
Total Dissolved Solids (mg/L)	GWA-13 (bg)	11	17.18	14.15	4.268	10	4	47	18.18
Total Dissolved Solids (mg/L)	GWA-14 (bg)	11	20.82	17.37	5.236	18	5	65	18.18
Total Dissolved Solids (mg/L)	GWA-2 (bg)	11	18.55	15.42	4.65	14	5	55	9.091
Total Dissolved Solids (mg/L)	GWA-3 (bg)	11	22.64	11.12	3.353	22	5	46	9.091
Total Dissolved Solids (mg/L)	GWC-17 (bg)	11	27.36	23.36	7.044	22	5	85	9.091
Total Dissolved Solids (mg/L)	GWC-18 (bg)	11	90.64	33.78	10.18	88	43	150	0
Total Dissolved Solids (mg/L)	GWC-4A[*GWB-4A] (bg)	11	27.09	19.56	5.898	24	5	67	27.27
Total Dissolved Solids (mg/L)	GWC-5[*GWB-5] (bg)	11	25.09	19.54	5.891	22	5	62	18.18
Total Dissolved Solids (mg/L)	GWC-15[*GWB-15] (bg)	11	19.27	19.84	5.982	10	4	58	18.18
Total Dissolved Solids (mg/L)	GWA-16[*GWB-16] (bg)	11	17.27	18.77	5.659	6	4	67	27.27

Box & Whiskers Plot



Constituent: Boron Analysis Run 1/23/2019 2:43 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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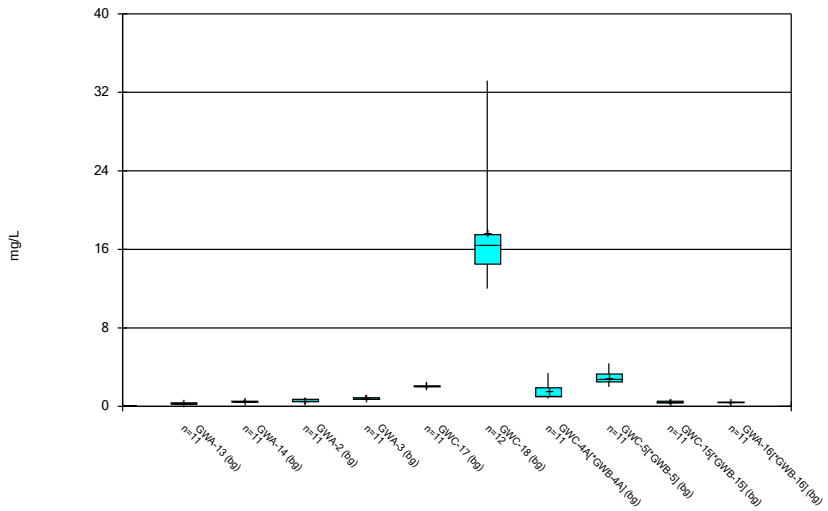
Box & Whiskers Plot



Constituent: Calcium Analysis Run 1/23/2019 2:43 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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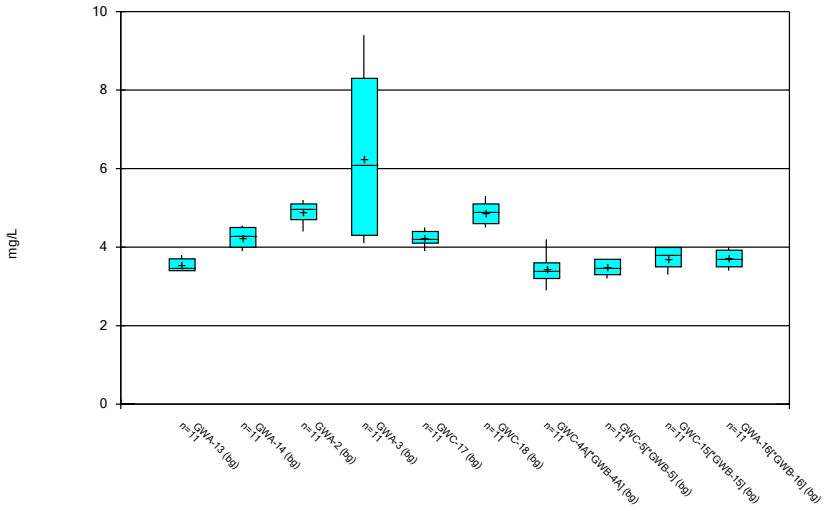
Box & Whiskers Plot



Constituent: Chloride Analysis Run 1/23/2019 2:43 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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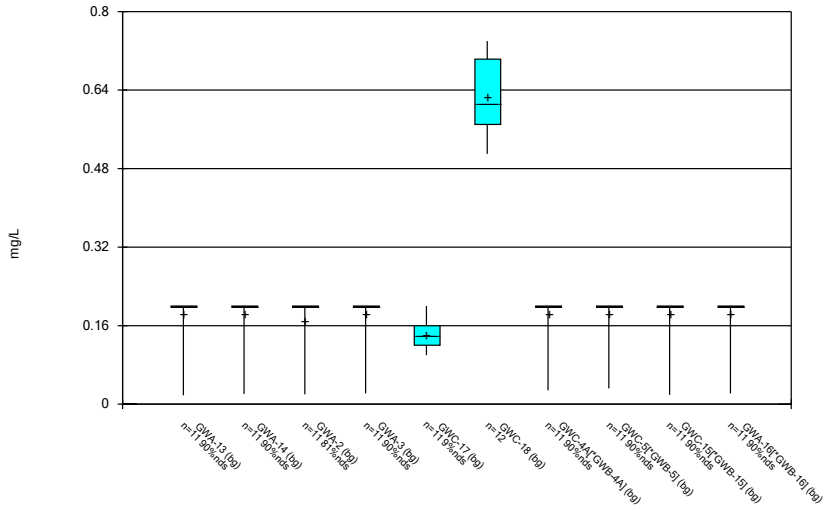
Box & Whiskers Plot



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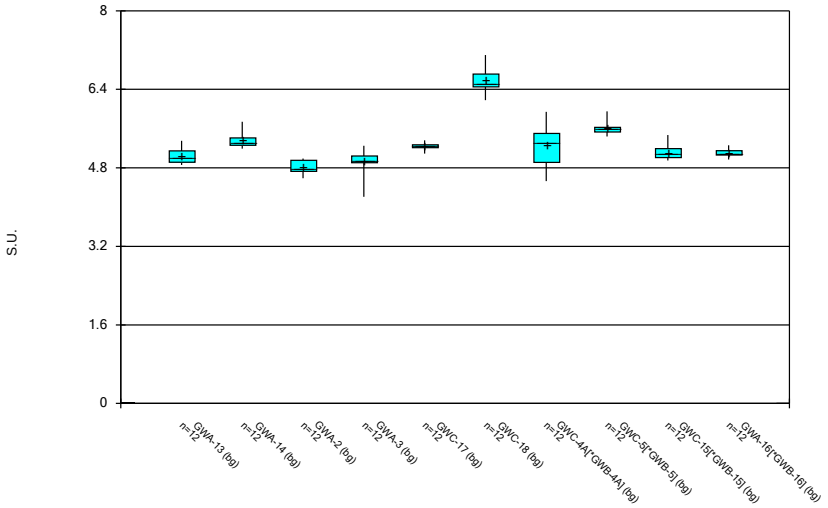
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Box & Whiskers Plot



Constituent: pH Analysis Run 1/23/2019 2:43 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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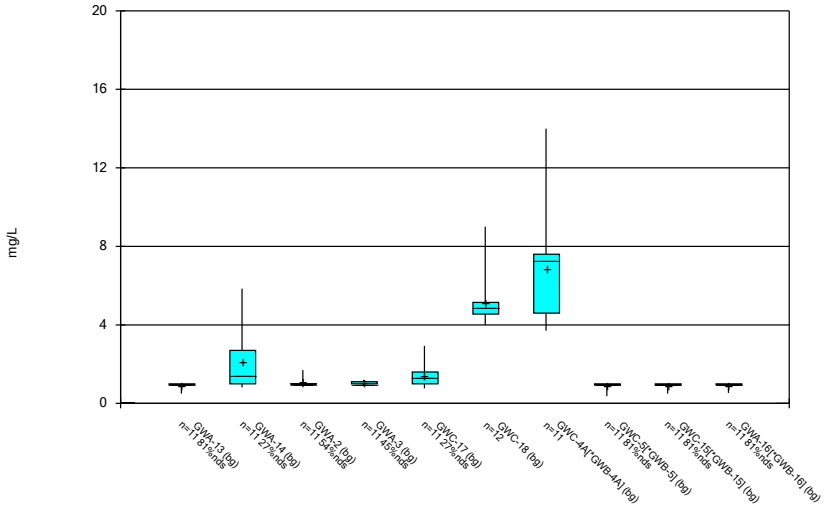
Box & Whiskers Plot



Constituent: Sulfate Analysis Run 1/23/2019 2:43 PM

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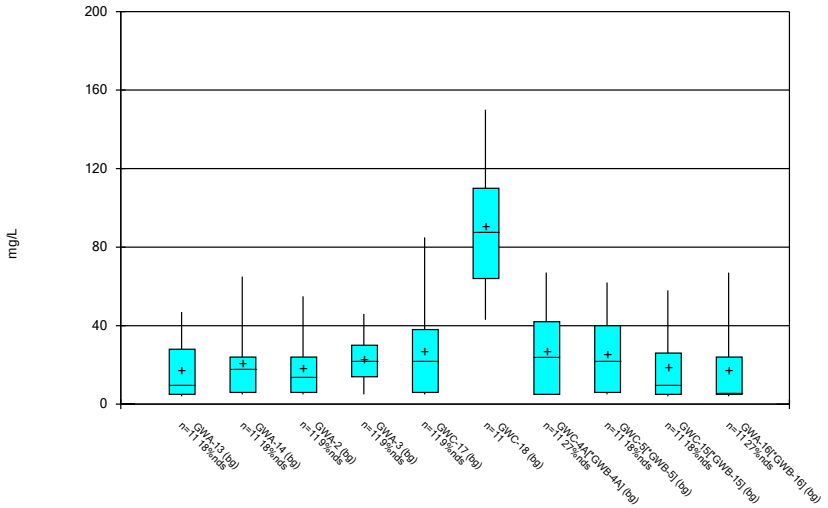
Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 1/23/2019 2:43 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Box & Whiskers Plot

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/23/2019, 2:42 PM

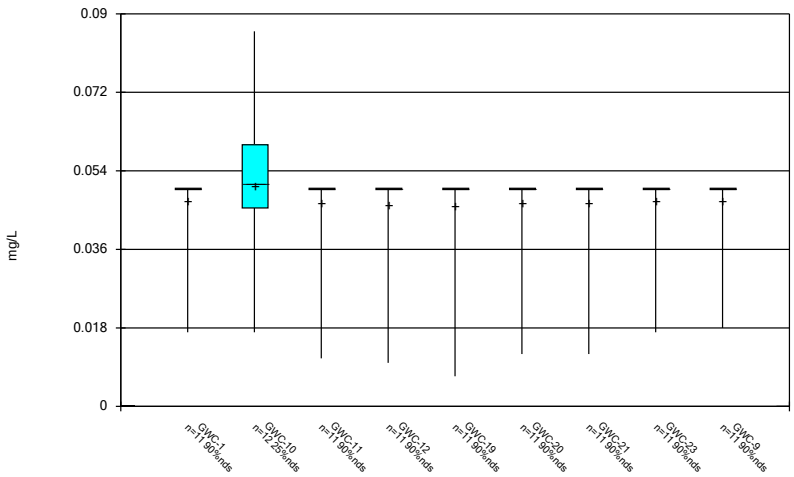
Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Boron (mg/L)	GWC-1	11	0.047	0.00995	0.003	0.05	0.017	0.05	90.91
Boron (mg/L)	GWC-10	12	0.05042	0.01839	0.005309	0.051	0.017	0.086	25
Boron (mg/L)	GWC-11	11	0.04645	0.01176	0.003545	0.05	0.011	0.05	90.91
Boron (mg/L)	GWC-12	11	0.04636	0.01206	0.003636	0.05	0.01	0.05	90.91
Boron (mg/L)	GWC-19	11	0.04608	0.013	0.003918	0.05	0.0069	0.05	90.91
Boron (mg/L)	GWC-20	11	0.04655	0.01146	0.003455	0.05	0.012	0.05	90.91
Boron (mg/L)	GWC-21	11	0.04655	0.01146	0.003455	0.05	0.012	0.05	90.91
Boron (mg/L)	GWC-23	11	0.047	0.00995	0.003	0.05	0.017	0.05	90.91
Boron (mg/L)	GWC-9	11	0.04709	0.009648	0.002909	0.05	0.018	0.05	90.91
Calcium (mg/L)	GWC-1	11	2.493	0.3922	0.1182	2.4	1.8	3.22	0
Calcium (mg/L)	GWC-10	12	16.4	4.399	1.27	14.5	13	27	0
Calcium (mg/L)	GWC-11	12	9.445	1.494	0.4312	8.92	7.6	13	0
Calcium (mg/L)	GWC-12	11	0.6473	0.08934	0.02694	0.65	0.45	0.78	0
Calcium (mg/L)	GWC-19	12	8.717	1.281	0.3697	8.8	6.7	10.4	0
Calcium (mg/L)	GWC-20	11	1.635	0.3837	0.1157	1.4	1.3	2.4	0
Calcium (mg/L)	GWC-21	11	1.391	0.7234	0.2181	1.1	0.93	2.9	0
Calcium (mg/L)	GWC-23	11	5.227	4.71	1.42	3	1.2	15.6	0
Calcium (mg/L)	GWC-9	11	0.3083	0.1088	0.03281	0.27	0.13	0.47	0
Chloride (mg/L)	GWC-1	11	6.98	0.3533	0.1065	7	6.4	7.5	0
Chloride (mg/L)	GWC-10	11	6.174	0.4633	0.1397	6.1	5.1	6.8	0
Chloride (mg/L)	GWC-11	11	4.645	0.2911	0.08776	4.6	4.3	5.1	0
Chloride (mg/L)	GWC-12	11	3.583	0.1835	0.05534	3.6	3.3	3.9	0
Chloride (mg/L)	GWC-19	11	7.709	1.256	0.3786	8.3	5.7	9.1	0
Chloride (mg/L)	GWC-20	12	9.192	1.033	0.2983	8.95	7.9	11.6	0
Chloride (mg/L)	GWC-21	11	6.144	0.2664	0.08031	6.1	5.8	6.5	0
Chloride (mg/L)	GWC-23	11	4.336	0.3557	0.1073	4.3	4	5.1	0
Chloride (mg/L)	GWC-9	13	10.85	1.648	0.4572	11	9	14.4	0
Fluoride (mg/L)	GWC-1	11	0.1855	0.04824	0.01455	0.2	0.04	0.2	90.91
Fluoride (mg/L)	GWC-10	11	0.1734	0.03658	0.01103	0.18	0.12	0.22	9.091
Fluoride (mg/L)	GWC-11	12	0.3594	0.08226	0.02375	0.3865	0.2	0.48	8.333
Fluoride (mg/L)	GWC-12	11	0.1842	0.05246	0.01582	0.2	0.026	0.2	90.91
Fluoride (mg/L)	GWC-19	11	0.1127	0.03537	0.01066	0.11	0.08	0.2	9.091
Fluoride (mg/L)	GWC-20	11	0.1766	0.05223	0.01575	0.2	0.06	0.2	81.82
Fluoride (mg/L)	GWC-21	11	0.1838	0.05367	0.01618	0.2	0.022	0.2	90.91
Fluoride (mg/L)	GWC-23	11	0.1663	0.05946	0.01793	0.2	0.04	0.2	72.73
Fluoride (mg/L)	GWC-9	11	0.1836	0.05427	0.01636	0.2	0.02	0.2	90.91
pH (S.U.)	GWC-1	12	5.192	0.1524	0.044	5.225	4.87	5.43	0
pH (S.U.)	GWC-10	12	6.3	0.2232	0.06444	6.25	6.11	6.8	0
pH (S.U.)	GWC-11	12	6.321	0.1488	0.04295	6.28	6.13	6.63	0
pH (S.U.)	GWC-12	12	5.114	0.04981	0.01438	5.125	5.03	5.19	0
pH (S.U.)	GWC-19	11	5.755	0.1509	0.04549	5.68	5.59	5.98	0
pH (S.U.)	GWC-20	12	4.975	0.151	0.0436	4.94	4.84	5.32	0
pH (S.U.)	GWC-21	12	5.192	0.3265	0.09425	5.035	4.89	5.84	0
pH (S.U.)	GWC-23	11	5.701	0.4098	0.1235	5.65	5.21	6.34	0
pH (S.U.)	GWC-9	12	4.912	0.1746	0.0504	4.84	4.7	5.28	0
Sulfate (mg/L)	GWC-1	11	1.406	0.4373	0.1319	1.3	0.75	2	0
Sulfate (mg/L)	GWC-10	11	3.212	0.8736	0.2634	3.2	1.93	5	0
Sulfate (mg/L)	GWC-11	11	4.579	0.6803	0.2051	4.5	3.5	5.9	0
Sulfate (mg/L)	GWC-12	11	0.9455	0.1291	0.03892	1	0.601	1	81.82
Sulfate (mg/L)	GWC-19	11	2.028	0.4411	0.133	2.1	1.4	2.7	0

Box & Whiskers Plot

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28 Printed 1/23/2019, 2:42 PM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Sulfate (mg/L)	GWC-20	11	2.192	1.368	0.4125	1.8	0.86	5.25	0
Sulfate (mg/L)	GWC-21	11	1.169	0.3473	0.1047	1.1	0.72	1.99	18.18
Sulfate (mg/L)	GWC-23	11	3.182	2.063	0.6221	2.6	1.9	9.2	0
Sulfate (mg/L)	GWC-9	11	1.741	1.105	0.3332	1.2	0.91	3.84	36.36
Total Dissolved Solids (mg/L)	GWC-1	11	38.45	26.49	7.988	32	5	100	9.091
Total Dissolved Solids (mg/L)	GWC-10	12	98	38.77	11.19	104.5	32	150	0
Total Dissolved Solids (mg/L)	GWC-11	12	63.58	24.35	7.03	66	10	94	0
Total Dissolved Solids (mg/L)	GWC-12	11	21.91	13.81	4.164	22	5	44	9.091
Total Dissolved Solids (mg/L)	GWC-19	11	43.64	22.97	6.926	38	12	81	0
Total Dissolved Solids (mg/L)	GWC-20	11	34.36	21.11	6.364	32	6	82	0
Total Dissolved Solids (mg/L)	GWC-21	11	25.64	18.03	5.438	20	5	58	18.18
Total Dissolved Solids (mg/L)	GWC-23	11	48	26.95	8.125	38	20	98	0
Total Dissolved Solids (mg/L)	GWC-9	11	40.45	20.35	6.135	44	5	84	9.091

Box & Whiskers Plot



Constituent: Boron Analysis Run 1/23/2019 2:42 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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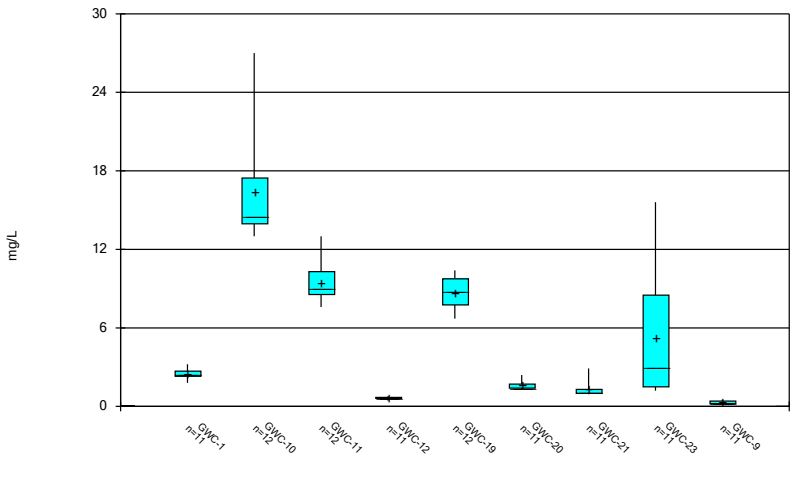
Box & Whiskers Plot



Constituent: Calcium Analysis Run 1/23/2019 2:42 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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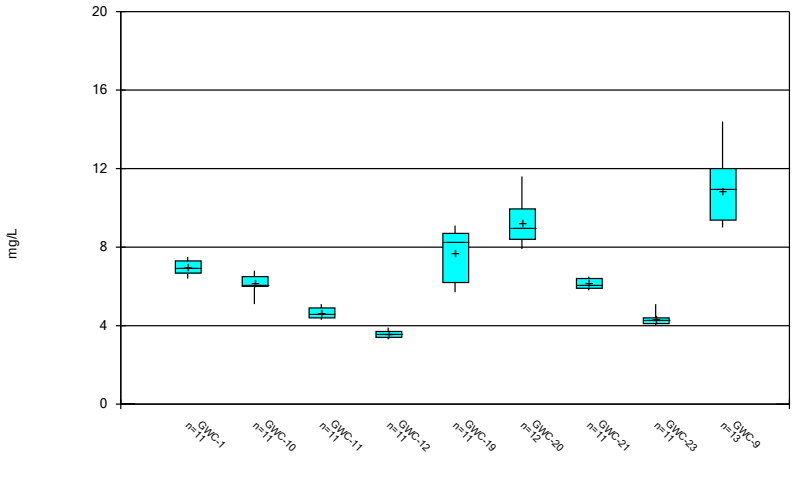
Box & Whiskers Plot



Constituent: Chloride Analysis Run 1/23/2019 2:42 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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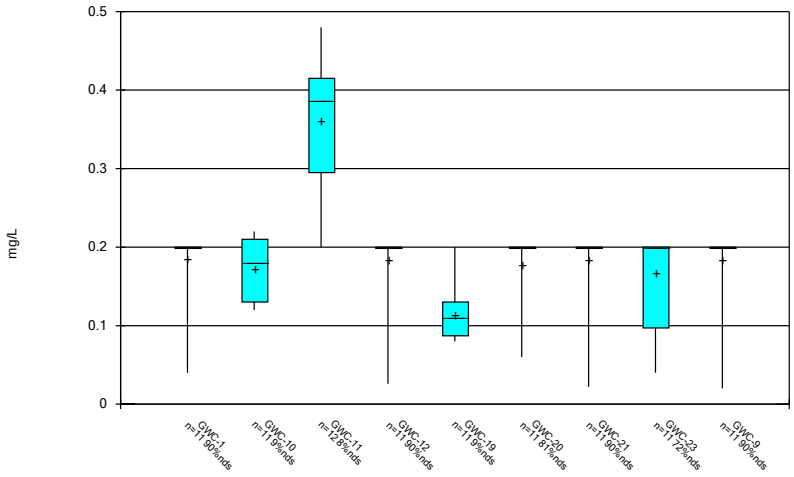
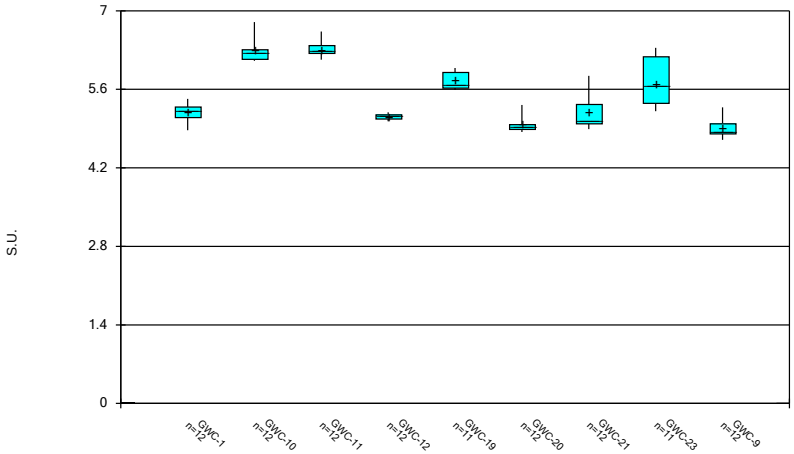
Box & Whiskers Plot



Constituent: Fluoride Analysis Run 1/23/2019 2:42 PM

Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

Box & Whiskers Plot



Constituent: pH Analysis Run 1/23/2019 2:42 PM
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28

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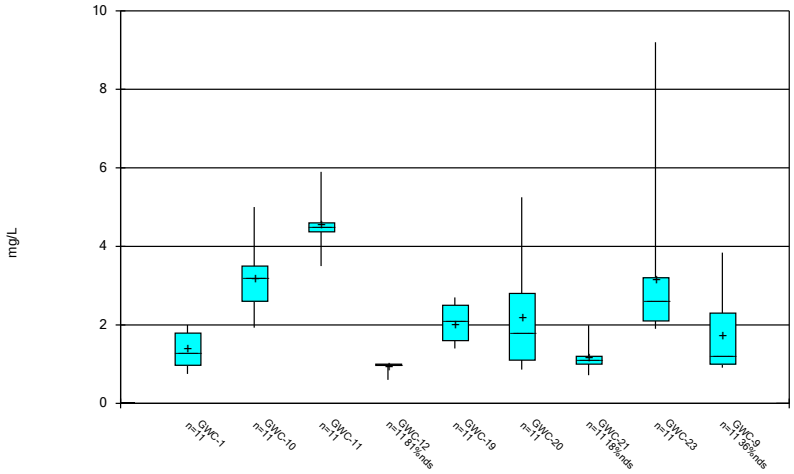
Box & Whiskers Plot



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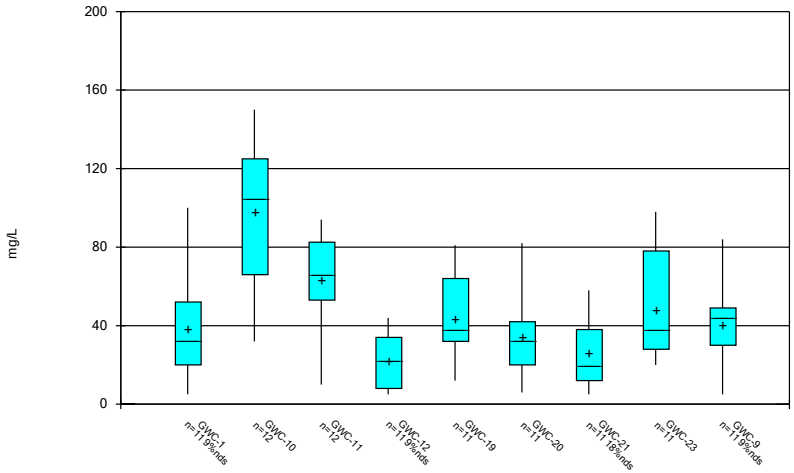

Constituent: Total Dissolved Solids Analysis Run 1/23/2019 2:42 PM
Plant McIntosh Client: GEI Data: McIntosh No 4 flat 3_28