

2020 Semiannual Groundwater Monitoring and Corrective Action Report

PLANT McMANUS Inactive Ash Pond 1 (AP-1)

Prepared for:

GEORGIA POWER COMPANY

Atlanta, Georgia



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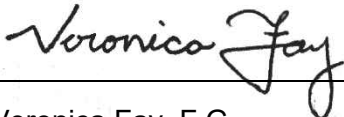
2020 Semiannual Groundwater Monitoring and Corrective Action Report

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Inactive Ash Pond 1 (AP-1)

February 26, 2021



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CERTIFICATION STATEMENT

This 2020 *Semiannual Groundwater Monitoring and Corrective Action Report, Georgia Power Company - Plant McManus- Inactive Ash Pond 1 (AP-1)* has been prepared in compliance 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 by a qualified groundwater scientist or engineer with Resolute Environmental & Water Resources Consulting, LLC (Resolute).

RESOLUTE ENVIRONMENTAL & WATER RESOURCES CONSULTING, LLC

Signature:

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Date:

2/25/2021

SUMMARY

This summary of the 2020 Semiannual Groundwater Monitoring and Corrective Action Report provides the status of groundwater monitoring and corrective action program through January 2021 at Georgia Power Company's (Georgia Power's) Former Ash Pond (AP) AP-1 at Plant McManus (the Site). This summary was prepared by Resolute Environmental and Water Resources Consulting, LLC. (Resolute) on behalf of Georgia Power to meet the requirements listed in Part A, Section 6¹ of the U.S. Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D).

Plant McManus is located at 1 Crispin Island Dr. in Glynn County, Georgia, approximately 5.37 miles northwest of the city of Brunswick. The plant property is bordered by the Turtle River to the west and by Burnett Creek to the north. The former AP-1 is located on the northeastern portion of the plant property (Figure 1). The former AP-1 was an approximately 80-acre ash pond that was built in the late 1950's. Ash sluicing operations at AP-1 commenced in 1959 and ceased in 1972. Closure of AP-1 commenced in 2016. As part of closure, AP-1 was dewatered sufficiently to remove the free liquids, and ash was removed and disposed of in an offsite, permitted landfill. A certification of removal report demonstrating completion of removal activities was submitted to EPD on November 27, 2019. Based on review of the report and an inspection of AP-1 on December 13, 2019, EPD acknowledged the completion of CCR removal on January 10, 2020.



Figure 1. Former Ash Pond (AP-1) and Site.

Groundwater at the Site is monitored using a multi-unit monitoring system comprised of 16 wells: 8 upgradient, 3 sidegradient, 4 downgradient, and 1 vertical extent, that meet federal and state monitoring requirements. Initial monitoring wells were installed between June and September 2016. Additional monitoring wells were installed in October 2019 and March 2020. Routine sampling and reporting began after the background groundwater conditions were established between August 2016 and May 2018. Based on groundwater conditions at the Site, an assessment monitoring program and assessment of corrective measures were established on August 2019 and July 2020, respectively. An *Assessment of Corrective Measures Report* was subsequently prepared for the former AP-1 (Arcadis, 2020b) and submitted to GA EPD in December 2020. During the 2020 semiannual reporting period, the Site remained in assessment monitoring as corrective measures were evaluated.

During the 2020 semiannual reporting period, Resolute conducted two groundwater sampling events in August and October 2020 as well as a resampling event in January 2021. Groundwater

¹ 80 FR 21468, Apr. 17, 2015, as amended at 81 FR 51807, Aug. 5, 2016; 83 FR 36452, July 30, 2018; 85 FR 53561, Aug. 28, 2020

samples were submitted to Pace Analytical Services, LLC, for analysis. Per the CCR rule, groundwater results were evaluated in accordance with the certified statistical methods. That evaluation showed statistically significant values of Appendix III² and Appendix IV³ parameters in wells provided in the table below.

Appendix III Parameter	October 2020
Boron	MCM-06, MCM-07, and MCM-17
Calcium	MCM-06, MCM-07
pH	MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, and MCM-17
TDS	MCM-06, MCM-07, and MCM-14
Appendix IV Parameter	October 2020
Arsenic	MCM-06
Lithium	MCM-06

Based on review of the Appendix III and Appendix IV statistical results, the Site will continue in assessment monitoring. Georgia Power will continue routine groundwater monitoring and reporting at the Site. Reports will be posted to the website and provided to EPD semiannually.

² Boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS)

³ Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium, and radium 226 + 228

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1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (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, this *2020 Semiannual Groundwater Monitoring and Corrective Action Report* has been prepared to document groundwater monitoring activities conducted at Georgia Power Company's (Georgia Power's) Plant McManus Inactive Ash Pond AP-1 (the Site) and satisfy the requirements of § 257.90(e). To specify groundwater monitoring requirements, Georgia EPD rule 391-3-4-.10(6)(a) incorporates by reference the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D; published in 80 FR 21302-21501, April 17, 2015). For ease of reference, the USEPA CCR rules are cited within this report.

Groundwater monitoring and reporting for the former AP-1 is performed in accordance with the monitoring requirements of 40 CFR 257.90 through 257.95 of the USEPA CCR rule, and Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6).

The former AP-1 ceased receiving waste prior to the effective date of the USEPA CCR rule promulgated in April 2015. A notification of intent to initiate closure of the inactive CCR ash pond was certified on December 7, 2015 and posted to Georgia Power's website. Therefore, groundwater monitoring and reporting for the former AP-1 are being completed in accordance with the alternate schedule in § 257.100(e)(5) of the revised USEPA CCR rule (August 5, 2016).

This report documents semiannual monitoring activities completed August 2020 through January 2021 (the reporting period) and includes the required report components in accordance with 40 CFR 257.90(e).

1.1 SITE LOCATION AND DESCRIPTION

The Site is located at 1 Crispen Island Dr. in Glynn County, Georgia, approximately 5.37 miles northwest of the city of Brunswick. The plant property is bordered by the Turtle River to the west and by Burnett Creek to the north. The former AP-1 is located on the northeastern portion of the plant property (Figure 1).

The former AP-1 was an approximately 80-acre ash pond that was built in the late 1950's. Ash sluicing operations at AP-1 commenced in 1959 and ceased in 1972. Closure of AP-1 commenced in 2016. As part of closure, AP-1 was dewatered sufficiently to remove the free liquids, and ash was removed and disposed of in an offsite, permitted landfill. A certification of removal report demonstrating completion of removal activities was submitted to EPD on November 27, 2019. Based on review of the report and an inspection of AP-1 on December 13, 2019, EPD acknowledged the completion of CCR removal on January 10, 2020.

1.1.1 Regional Geology

The Brunswick area is underlain by three regional aquifer systems which extend to depths exceeding 1,100 feet. The uppermost regional aquifer is the surficial aquifer. In the Brunswick area, this aquifer extends to a depth of approximately 180 feet. Although the surficial aquifer is defined on a regional scale as extending to approximately 180 feet below ground surface, Clarke and others (1990) acknowledge that localized lower permeability units can create confined or semi-confined conditions within limited areas of the surficial aquifer (ATC Associates Inc., 1997).

Regionally, the surficial aquifer is composed of geologic formations overlying the Hawthorn Formation. These formations include the Satilla, Charlton, and Raysor Formations, as well as undifferentiated Holocene, Pleistocene, Pliocene and late-Miocene deposits. In the Brunswick area, the Satilla is described as extending to approximately 28 feet below ground surface and the Cypresshead to approximately 50 feet below ground surface. Underlying the Satilla and Cypresshead Formations are sands, gravels, and clays which have been described by Weems and Edwards (2001) as two pairs of alternating confining units and water-bearing zones of the Ebenezer Formation. These alternating units of the Ebenezer Formation are described as an uppermost confining unit extending from approximately 50 to 75 feet below ground surface, followed by a water-bearing zone from approximately 75 to 110 feet below ground surface, another confining unit from approximately 110 to 15 feet below ground surface, and then another water-bearing zone from approximately 150 to 185 feet below ground surface. Depositionally, these sediments represent marginal to shallow marine beds, that are overlain by marine terrace deposits. Fluvial or residual deposits overlay the terrace deposits (Miller, 1986; Clarke et al, 1990).

The regional surficial aquifer is underlain by approximately 90 feet of lower-permeability portions (Miocene Unit A) of the Hawthorn Formation. This stratum forms the upper confining bed for the Brunswick aquifer system. The Brunswick aquifer system is composed of two confined aquifers (the Upper Brunswick aquifer and the Lower Brunswick aquifer) which are separated and confined above and below by less permeable units of the Hawthorn Formation. The Upper Brunswick aquifer extends from approximately 270 feet to 350 feet below ground surface, and the Lower Brunswick aquifer extends from approximately 400 feet to 470 feet below ground surface (Clarke et al, 1990).

1.1.2 Site Geology and Hydrogeology

Based on information collected during subsurface investigations, Plant McManus is underlain by very fine sands and clays from land surface (or beneath a shallow fill layer) to depths ranging from 33 to 43 feet below land surface. Very fine sands are predominant, but discontinuous clay layers of varying thickness were encountered during drilling activities. The clay layers varied from less than one inch to approximately ten feet in thickness. These very fine sands and discontinuous clay layers are interpreted to be the Upper Satilla Formation (ATC Associates, Inc., 1997).

Underlying the Upper Satilla Formation are fine to medium sands with greater silt content, and apparently lower permeability, than the sands of the Upper Satilla. These siltier sands, which were

interpreted to be the Lower Satilla Formation, were encountered at depths greater than 35 feet below ground surface during the Site investigation performed in the 1990s (ATC Associates Inc., 1997). These sands may also correspond to the Cypresshead Formation of Huddleston (1988). Sands and clays below the Cypresshead and above the confining unit of the Brunswick aquifer system have been described by Weems and Edwards (2001) as two pairs of alternating confining units and water-bearing zones of the Ebenezer Formation, extending from approximately 50 to 185 feet below ground surface in the Brunswick area.

The regional surficial aquifer that contains the Upper and Lower Satilla Formations is underlain by approximately 90 feet of lower-permeability portions (Miocene Unit A) of the Hawthorn Formation. This stratum forms the upper confining bed for the Brunswick aquifer system.

The surficial aquifer underlying the mainland, marsh, and island is composed of the very fine to fine grain sand with discontinuous clay layers of the Upper and Lower Satilla Formation. In the marsh, the groundwater elevation at low tide is below the top of the marsh surface. The upper portion of the aquifer in the marsh has been cut by tidal creeks, which meander through the marsh. In addition to current and historically recent (pre-ash pond construction) tidal channels, the marsh is also likely to have paleo (pre-historic) tidal channels present throughout the upper portion of the aquifer in the marsh area, which may provide zones of higher hydraulic conductivity or isolated pockets of groundwater. Vertically, the Satilla formation fines downward to a silty fine sand of the Lower Satilla Formation. The aquifer is generally unconfined, with localized clay layers. Groundwater flowing within the surficial aquifer is separated from deeper aquifers by approximately 90 feet of lower-permeability portions of the Hawthorn Formation (Miocene Unit A) that form the upper confining bed for the Brunswick aquifer system (Clarke et al, 1990).

Groundwater flows from two directions toward the former AP-1. One groundwater flow component originates on the mainland, northeast of the facility, and flows southwest, while the other flow component originates on Crispen Island and flows north and northeast (Figures 4 through 7). Groundwater elevations in the monitoring wells on the mainland (MCM-02, -15, and -16) and on the island (MCM-08, and -11) have consistently exhibited higher groundwater elevations than the monitoring wells and piezometers installed along the dikes (Table 4), with MCM-01 and -04 exhibiting intermediate elevations between the mainland and dike wells. The potentiometric surface of the surficial aquifer and the resultant groundwater flow direction in the vicinity of the former AP-1 is a reflection of the topography of the mainland, Crispen Island, and the tidal marsh surrounding the area.

1.2 GROUNDWATER MONITORING SYSTEM

Pursuant to § 257.91, Georgia Power installed a groundwater monitoring system within the uppermost aquifer around former AP-1. The monitoring system is designed to monitor groundwater passing the waste boundary of the former AP-1 within the uppermost aquifer. Wells were located to serve as piezometers, upgradient monitoring points, sidegradient monitoring points, or downgradient monitoring points based on groundwater flow direction (Tables 1 and 2, Figures 2 & 3). The compliance monitoring network for the former AP-1 currently consists of 15

monitoring wells. As part of the assessment monitoring program, deep piezometer DPZ-02 was reclassified as a delineation well during this 2020 semiannual monitoring period. Pursuant to § 257.195(g)(1)(iv), the wells, classified as “delineation wells”, are sampled in addition to the compliance monitoring wells as part of the ongoing assessment groundwater monitoring program.

2.0 GROUNDWATER AND SURFACE WATER MONITORING ACTIVITIES

As required by § 257.90(e), the following describes monitoring-related activities performed during the reporting period and discusses any change in status of the monitoring program.

2.1 MONITORING WELL INSTALLATION, MAINTENANCE, AND ABANDONMENTS

In summary, monitoring activities for this reporting period included:

- Visual inspection of well conditions prior to sampling, recording Site conditions, and performing exterior maintenance to perform sampling under safe and clean conditions;
- Redevelopment of older monitoring wells installed in 2016 as a part of scheduled maintenance; wells were redeveloped in August 2020 and included: MCM-01, -02, -04, -05, -06, -07, -11, -12, -14, -15, -16, and -17;
- Re-classifying deep piezometer DPZ-02 as a delineation well and incorporating it into the assessment monitoring well network in October 2020.

The August 2020 redevelopment logs for the selected monitoring wells are located in Appendix B. The location of the transitioned piezometer, DPZ-02, is shown on Figure 2. DPZ-02 is located adjacent to monitoring well MCM-06 on the northern dike and is screened at a depth of 35 to 40 feet below ground surface, placing it in the Cypresshead formation approximately 16 ft deeper than well MCM-06, which is screened from approximately 14 to 24 feet below ground surface.

2.2 ASSESSMENT MONITORING

Based on results of the August 2019 *Annual Groundwater and Corrective Action Monitoring Report*, assessment monitoring was initiated at the Site. Statistical analyses of the 2019 groundwater data identified SSLs of arsenic and lithium in well MCM-06 in excess of the federal and state groundwater protection standard (GWPS).

Pursuant to § 257.96, an Assessment of Corrective Measures Report (ACM) was initiated for the former AP-1 in July 9, 2020. An Alternative Source Demonstration (ASD) for lithium was prepared pursuant to regulations in § 257.95(g)(3)(ii) and described in Section 2.3 (Arcadis, 2020a). The ASD was submitted to GA EPD on November 17, 2020; a copy is also provided in Appendix D of this report for reference. An *Assessment of Corrective Measures Report* (ACM Report) was subsequently prepared for the former AP-1 (Arcadis, 2020b) and submitted to GA EPD in December 2020 and posted to the CCR compliance website in January 2021. In accordance with § 257.96(b), groundwater continues to be monitored at the former AP-1 under the assessment monitoring program while the ACM phase is implemented.

Pursuant to § 257.95(b), the 15 monitoring wells of the certified compliance monitoring network (Figure 2) were sampled for the full suite of Appendix IV constituents in August 2020 as the initial assessment monitoring event. Following receipt of the initial Appendix IV sample results, the October 2020 semiannual assessment monitoring event was conducted. In October 2020, DPZ-02 was sampled and included in the assessment monitoring event as a vertical delineation well to assess the extent of arsenic at former AP-1. Sixteen wells were sampled and analyzed for Appendix III constituents and the following Appendix IV constituents that were detected during the August 2020 event: arsenic, barium, beryllium, cobalt, lead, lithium, combined radium 226/228, and selenium. In addition, resampling of monitoring well MCM-05 was performed in January 2021. The sequence of monitoring events conducted at the former AP-1 in 2020 is summarized in Table 3. Details of these events and analytical results are discussed in Section 3, while the statistical results are discussed in Section 4.

2.3 ALTERNATE SOURCE DEMONSTRATION

In pursuant to regulations in § 257.95(g)(3)(ii), Arcadis U.S., Inc. (Arcadis) prepared an ASD for the SSLs of lithium reported for well MCM-06. The ASD presents multiple lines of evidence that indicate that the lithium observed at former AP-1 is due to a natural source – i.e., the influx of brackish surface water during dewatering activities. Lithium is a naturally occurring element in seawater and is present in the brackish water that is a mix of seawater and freshwater surrounding the site. The following analyses are presented to support this ASD:

1. Evaluation of lithium concentrations in surface waters. This evaluation demonstrates that the range of lithium concentrations observed in surface water is comparable to the range of lithium concentrations observed at MCM-06.
2. Comparison of geochemistry markers in surface waters and groundwater. This comparison demonstrates that the monitoring wells where lithium is present in groundwater yield similar geochemistry to each other and the surface water, while being distinct from groundwater in monitoring wells with low estimated or non-detect lithium.
3. Variation in hydraulic conductivity and response to tidal fluctuations. This data shows that locations such as MCM-06 are in hydraulic communication with the tidal marsh.
4. Evaluation of groundwater flow conditions and concentration trends during CCR removal. Dewatering associated with CCR removal resulted in a consistent inward lateral gradient during high and low tides. The dewatered inward flow conditions correlate with a shift in groundwater quality at several monitoring wells, including MCM-06, toward the geochemistry of the surface water.

Combined, these lines of evidence demonstrate that the former CCR unit is not the source of lithium SSLs observed in well MCM-06. The ASD was provided in Appendix D of this report for reference.

2.4 ADDITIONAL SAMPLING EVENTS

Additional groundwater and surface water sampling events were performed during the reporting period to supplement existing groundwater data collected through previous assessment events and to further investigate the nature and the extent of parameters detected on Site.

2.4.1 Surface Water Sampling

Due to the presence of surface water adjacent to MCM-06, installation of wells to horizontally characterize this area is infeasible. Georgia Power proactively collected surface water samples from along four transects (T1 through T4) in the tidal marsh adjacent to wells MCM-05, MCM-06, MCM-07, and MCM-14, respectively, in October and November 2020⁴ during both high (HT, HTS, HS, HB) and low tides (L, LT). In addition, samples from the surface water in the former ash pond were collected adjacent to MCM-05, MCM-06, MCM-07 and MCM-14. Samples were also collected from two background locations. One background surface water location sampled was the low tide background location, BG-1LT, in Cowpen Creek, north of its confluence with Burnett Creek. The other surface water sample was collected at high tide from background location 2, or BG-2HT, located in the Turtle River, north of its confluence with Gibson Creek. Samples were collected from locations shown in Figures 8-10. Surface water samples are collected in accordance with USEPA Region 4 *Science and Ecosystem Support Division (SESD), Operating Procedure, Surface Water Sampling* SESDPROC-201-R4 (December 16, 2016).

Surface water data will be collected for Appendix III parameters and arsenic semiannually with routine groundwater sampling and reported in semiannual and annual groundwater monitoring reports. Additional parameters were added during this reporting period to the surface water analyses to develop additional data for the ASD described in Section 2.3 and provided in Appendix D of this report for reference. The results for the October and November 2020 events are summarized in Table 5. The laboratory reports associated with the sampling event are provided in Appendix C. Georgia Power will continue collecting the surface water samples semiannually.

2.4.2 Additional Characterization of Groundwater Parameters on the Northern Dike

Additional groundwater sampling was performed in October 2020 along the northern dike to develop additional data in support of assessment of corrective measures (ACM). Samples were collected from monitoring wells, MCM-05, -06, -07, -14; deep piezometer DPZ-02; and the 10 former dewatering wells located on the northern dike (RW-1 through RW-10). Groundwater was analyzed for dissolved and total metals (arsenic, iron, and manganese), nitrate, sulfate, sulfide, TOC, BOD, orthophosphate, alkalinity (carbonate and bicarbonate), boron, TDS, cations (magnesium, calcium, sodium, and potassium), anions (chloride), and arsenic speciation (As [III], As [V], MMAs, DMAs, and sum of unknown arsenic species). The scope, sampling methodologies, and results of this event are presented in the Semi-Annual Remedy Selection and Design Progress Report prepared by Arcadis U.S., Inc. for Georgia Power in Appendix D.

⁴ A November 2020 resampling event was conducted to replace the samples that were lost due to the shipping mishap; the full parameter suite was resampled, including metals.

3.0 SAMPLE METHODOLOGY & ANALYSES

The following sections describe the methods used to conduct groundwater and surface water monitoring as well as the sampling results that were obtained from sampling events at the former AP-1 during August 2020 through January 2021.

3.1 GROUNDWATER ELEVATION MEASUREMENT

Prior to each sampling event, groundwater levels were recorded from piezometers and wells in the network at the former AP-1. Groundwater measurements were taken from transducers installed in 16 wells (MCM-01, -02, -04 through -07, -11, -12, -14 through -20, and DPZ-02) and 8 piezometers (MCM-03, -08, -13, DPZ-01, and DPZ-03 through -06). The remaining piezometers in the network were gauged by hand using a Heron water level indicator. Groundwater elevations calculated during the August and October 2020 monitoring events are summarized in Table 4. Groundwater elevation data were used to develop a high tide and low tide potentiometric surface elevation contour map for each event (Figures 4-7). Groundwater flow at the Site is discussed in Section 1.1.

3.2 GROUNDWATER GRADIENT AND HORIZONTAL FLOW VELOCITY

The horizontal groundwater flow velocity at the former AP-1 was calculated using a derivation of Darcy's Law. Specifically,

$$V = \frac{K * i}{\eta_e}$$

Where:

$$V = \text{Groundwater flow velocity } \left(\frac{\text{feet}}{\text{day}} \right)$$

$$K = \text{Average Hydraulic Conductivity } \left(\frac{\text{feet}}{\text{day}} \right)$$

$$i = \text{Horizontal hydraulic gradient } \left(\frac{\text{feet}}{\text{foot}} \right)$$

$$\eta_e = \text{Effective porosity}$$

Horizontal groundwater flow velocities were calculated for two well pairs at high and low tide using groundwater elevations collected from transducers on October 14, 2020. Groundwater flow velocities representing groundwater flowing from the mainland to former AP-1 (between MCM-02

and MCM-16) and from the island to former AP-1 (between MCM-11 and MCM-12) increased slightly during high tide compared to low tide (Table 6). Groundwater flow between MCM-02 and MCM-16 was 0.0606 ft/ day at low tide and 0.0610 ft/ day at high tide, while groundwater flow for MCM-11 and MCM-12 was 0.0506 ft/ day at low tide and 0.0527 ft/day at high tide. The groundwater direction during high tide was from the marsh to former AP-1 and at low tide from former AP-1 to the marsh. Average groundwater flow velocities were 0.057 ft/day or 20.74 feet per year (ft/year) at high tide and 0.056 ft/day or 20.30 ft/yr at low tide.

3.3 GROUNDWATER SAMPLING

Groundwater samples were collected from the compliance well network and select piezometers using low-flow sampling procedures in accordance with § 257.93(a). Purging and sampling was performed using a peristaltic pump with the intake tubing lowered to the midpoint of the well screen (or as appropriate determined by the water level). QED dedicated pumps are utilized in monitoring wells MCM-01, MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, MCM-15, MCM-16, and MCM-17. Non-disposable equipment was decontaminated before use and between well locations.

An AquaTroll (In-Situ field instrument) was used to monitor and record field water quality parameters (pH, conductivity, dissolved oxygen (DO), temperature, and oxidation reduction potential [ORP]) during well purging to verify stabilization prior to sampling. Turbidity was monitored using a LaMotte 2020we (or similar) 1970-USEPA and ISO Compliant Model turbidity meter.

Groundwater samples were collected when the following stabilization criteria were met:

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

Once stabilization was achieved, unfiltered samples were collected in appropriately preserved laboratory-supplied containers, placed in ice-packed coolers.

Upon completion of the sampling events, samples were submitted to Pace Analytical Services, LLC (Pace) following chain-of-custody protocol. The field sampling forms generated during the assessment monitoring events conducted during August through January 2021 are included in Appendix A.

3.4 LABORATORY ANALYSES

Laboratory analyses were performed by Pace, which is accredited by National Environmental Laboratory Accreditation Program (NELAP) and maintains a NELAP certification for all Appendix III and Appendix IV constituents analyzed for this project.

The groundwater analytical results from the initial assessment event conducted in August 2020, the semiannual assessment monitoring event conducted in October 2020, and the resample event conducted in January 2021 are summarized in Table 7. The Pace laboratory analytical reports are provided in Appendix A. The pH field measurements recorded during the sampling events are also provided in Table 7.

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 detection samples. QA/QC samples included field equipment rinsate blanks (EQBL), field blanks (FBL), and duplicate (DUP) samples. QA/QC sample data were evaluated during data validation (as described below) and are included in Appendix A and C.

Groundwater quality data for the assessment events were independently validated in accordance with USEPA guidance (USEPA, 2011) and the analytical methods. Data validation generally consisted of reviewing sample integrity, holding times, laboratory method blanks, laboratory control samples, matrix spikes/matrix spike duplicate recoveries and relative percent differences (RPDs), post digestion spikes, laboratory and field duplicate RPDs, field and equipment blanks, and reporting limits. Where appropriate, validation qualifiers and flags are applied to the data using USEPA procedures as guidance (USEPA, 2017). Based on the data validation reports, the data collected during August and October 2020 are acceptable for use in determining the compliance status of the Site. The associated data validation report is provided in Appendix A with the laboratory reports.

4.0 STATISTICAL ANALYSIS

Statistical analysis of the reporting period groundwater monitoring data was performed by Groundwater Stats Consulting, LLC (GSC), following the appropriate certified statistical methodology for the Site. The report generated from the statistical analysis is provided in Appendix F (GSC, 2020). A summary of methods and results are provided in the following sections.

4.1 METHODS

The statistical method used at the Site was developed by GSC using methodology presented in Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance, March 2009, US EPA 530/ R-09-007 (US EPA, 2009). To develop the statistical methods, analytical data collected during the background period were evaluated and used to develop statistical limits for each

Appendix III parameter and metals required by the existing EPD permit. Sanitas groundwater statistical software was used to screen the data and perform the statistical analyses. Sanitas is a decision support software package that incorporates the statistical tests required of Subtitle C and D facilities by US EPA regulations.

Appendix III statistical analysis was performed to determine if Appendix III constituents have returned to background levels. Appendix IV constituents were evaluated to determine if concentrations statistically exceeded the established state and federal GWPS. Detailed statistical methods used for Appendix III and Appendix IV constituents are discussed in statistical analysis package provided in Appendix F and summarized in Sections 4.1.1 and 4.1.2.

4.1.1 Appendix III Constituents

The statistical test used to evaluate the groundwater monitoring data was the interwell prediction limit (PL) method for Appendix III constituents (boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids [TDS]) combined with the option of a 1-of-2 verification resampling strategy. Interwell prediction limits, constructed from all available pooled upgradient well data were used to evaluate the most recent compliance sample from each downgradient well reported during the October 2020 sample event.

If data from a sampling event initially exceed 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. If the resample exceeds the PL, the initial exceedance is verified and an SSI is determined. When the resample result does not verify the initial result, there is no SSI. If resampling is not performed, the initial exceedance is a confirmed exceedance.

4.1.2 Appendix IV Constituents

Background limits were used when determining the Appendix IV GWPS under USEPA rule 40 CFR § 257.95(h) and GA EPD CCR Rule 391-3-4-.10(6)(a). Parametric tolerance limits were used to calculate background limits from pooled upgradient well data when data followed a normal or transformed-normal distribution for Appendix IV parameters with a target of 95% confidence and 95% coverage. When data contained greater than 50% non-detects or when the data distribution did not follow a normal or transformed-normal distribution, a nonparametric tolerance limit was used. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

USEPA revised the federal CCR Rule on July 30, 2018, updating GWPS for cobalt, lead, lithium, and molybdenum. As described in 40 CFR § 257.95(h)(1-3), the GWPS is:

- (1) The maximum contaminant level (MCL) established under 40 CFR §141.62 and 141.66.
- (2) Where an MCL has not been established:
 - (i) Cobalt 0.006 mg/L;
 - (ii) Lead 0.015 mg/L;
 - (iii) Lithium 0.040 mg/L; and

- (iv) Molybdenum 0.100 mg/L.
- (3) Background levels for constituents where the background level is higher than the MCL or rule-specified GWPS.

USEPA's updated GWPS have not yet been incorporated under GA EPD's CCR Rule. The GA EPD CCR Rule GWPS is:

- (1) The federally established MCL.
- (2) Where an MCL has not been established, the background concentration.
- (3) Background levels for constituents where the background level is higher than the MCL.

Following the above federal and state rule requirements, GWPS were established for statistical comparison of Appendix IV constituents and are presented in Tables 8 and 9.

4.2 STATISTICAL ANALYSES RESULTS

Based on review of the full Appendix III statistical analysis discussion presented in Appendix E, groundwater conditions have not returned to background and assessment monitoring should continue. Review of the Sanitas results indicates that using the GWPS established according to both 40 CFR §257.95(h) and 391-3-4-.10(6)(a), the following SSLs were identified:

- Arsenic: MCM-06
- Lithium: MCM-06

A groundwater exceedance notification has been placed in the operating record pursuant to 40 CFR § 257.95(g). The lithium SSL in MCM-06 in excess of the state and federal GWPS is addressed with the ASD included in Appendix D and was submitted to Georgia EPD on November 17, 2020.

4.2.1 Delineation Data

Delineation well, DPZ-02, installed to assess the extent of arsenic in groundwater at former AP-1, shows that arsenic is vertically delineated at MCM-06. As described in Section 2.3.1, due to the presence of a surface water feature in the downgradient direction of MCM-06, installation of wells to horizontally characterize this area is infeasible. Georgia Power proactively collected surface water samples from along four transects in the tidal marsh adjacent to wells MCM-05, MCM-06, MCM07, and MCM-14 of former AP-1. The surface water sample results for arsenic from the transects are below the Georgia instream water quality standard chronic standard for dissolved arsenic (0.036 mg/L) for marine estuary environments (Table 5). Based on arsenic results for data collected to date, no arsenic impacts to surface water have been detected.

5.0 MONITORING PROGRAM STATUS

5.1 ASSESSMENT MONITORING STATUS

Pursuant to 40 CFR 257.96(b), Georgia Power will continue to monitor the groundwater at the former AP-1 in accordance with the assessment monitoring program regulations of 40 CFR 257.95 while ACM efforts are implemented to evaluate SSL concentrations of arsenic. Pursuant to § 257.94(e)(1), Georgia Power will continue assessment monitoring in accordance with § 257.95. Pursuant to § 257.95(g)(1)(iv), the delineation wells will continue to be sampled as part of the ongoing semiannual assessment groundwater monitoring program.

5.2 ASSESSMENT OF CORRECTIVE MEASURES

An ACM was implemented on July 9, 2020 and submitted to EPD on December 4, 2020. The ACM efforts completed during the reporting period covered by this groundwater monitoring and corrective action report are presented in the *Semiannual Remedy Selection and Design Progress Report* provided in Appendix E. The Semiannual Progress Report summarizes:

- (i) the current conceptual site model applicable to evaluating groundwater corrective measures proposed in the ACM Report (Arcadis, 2020b);
- (ii) the analytical data obtained during supplemental ACM-specific field investigations;
- (iii) the status of evaluating applicable corrective measures; and
- (iv) the planned activities and anticipated schedule for the following semiannual reporting period.

Georgia Power will include future Semiannual Progress Reports with each groundwater monitoring and corrective action report.

6.0 CONCLUSIONS & FUTURE ACTIONS

This 2020 *Semiannual Groundwater Monitoring and Corrective Action Report for Georgia Power's Plant McManus Inactive Ash Pond AP-1* was prepared to fulfill the requirements of USEPA's CCR Rule and Georgia EPD rule 391-3-4-.10(6)(c). Statistical evaluations of the groundwater monitoring data from August 2020 through January 2021 at the former AP-1 identified the continued presence of an SSL of arsenic and lithium in monitoring well MCM-06. The lithium SSL in MCM-06 is addressed with an ASD prepared pursuant to regulations in § 257.95(g)(3)(ii) and submitted to Georgia EPD on November 17, 2020 (Arcadis, 2020a). The arsenic SSL in MCM-06 is vertically delineated below the state and federal GWPS by DPZ-02. Based on the surface water data collected to date, the arsenic SSL in MCM-06 does not show impacts in adjacent surface water. Surface water data will be collected semiannually with routine groundwater sampling and reported in semiannual and annual groundwater monitoring reports.

Georgia Power will continue to monitor groundwater in the vicinity of former AP-1 under the current assessment monitoring program and adaptively manage the Site as new data become available. Georgia Power will continue efforts to assess corrective measures as presented in the *Semiannual Remedy Selection and Design Progress Report* provided in Appendix E.

The 2nd semiannual assessment sampling event is planned for March 2021.

7.0 REFERENCES

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TABLES

Table 1
Monitoring Well Network Summary
Plant McManus
Brunswick, GA

Well ID	Well Function	Northing ¹ (ft)	Easting ¹ (ft)	Top of Casing Elevation ² (ft NAVD 88)	Ground Surface Elevation ^{2,3} (ft NAVD 88)	Total Depth ⁴ (ft BTOC)	Top of Screen Elevation ² (ft NAVD 88)	Bottom of Screen Elevation ² (ft NAVD 88)
MCM-01	Upgradient Monitoring	443727.31	852732.08	8.63	5.70	27.32	-7.93	-17.93
MCM-02	Upgradient Monitoring	444496.53	852663.64	11.25	8.25	27.35	-5.22	-15.22
MCM-04	Downgradient Monitoring	444804.73	851695.27	12.39	9.50	28.57	-5.18	-15.18
MCM-05	Downgradient Monitoring	444716.63	851309.91	10.04	7.80	28.05	-7.25	-17.25
MCM-06	Downgradient Monitoring	444407.22	850782.11	10.15	7.87	27.20	-6.27	-16.27
MCM-07	Downgradient Monitoring	444059.38	850195.96	10.20	7.52	23.75	-2.76	-12.76
MCM-11	Upgradient Monitoring	442429.80	851072.91	10.23	7.52	24.00	-3.34	-13.34
MCM-12	Sidegradient Monitoring	442821.17	851312.45	11.87	8.99	29.00	-6.12	-16.12
MCM-14	Sidegradient Monitoring	443358.82	852317.59	11.50	8.66	28.11	-6.23	-16.23
MCM-15	Upgradient Monitoring	444825.53	851949.02	12.84	10.18	26.60	-4.53	-14.53
MCM-16	Upgradient Monitoring	444551.32	852716.60	16.02	13.04	28.39	-1.72	-11.72
MCM-17	Sidegradient Monitoring	443074.41	851899.68	11.49	9.09	27.44	-4.81	-14.81
MCM-18	Upgradient Monitoring	442067.07	851698.41	9.00	6.01	27.86	-8.76	-18.76
MCM-19	Upgradient Monitoring	441157.82	852338.86	8.71	5.77	28.32	-9.53	-19.53
MCM-20	Upgradient Monitoring	440944.40	852185.15	10.07	7.07	23.05	-2.98	-12.98
DPZ-02	Vertical Delineation Well	444391.02	850757.94	9.54	7.34	43.46	-28.84	-33.84

Notes:

1. Georgia State Plane - NAD 83 East Zone.
 2. NAVD 88 - North American Vertical Datum of 1988
 3. Ground Surface measured at the mag nail in the concrete pad
 4. ft BTOC - feet below top of casing
- Updated by: VF 1/8/21
Checked by: KMS 1/11/21

Table 2
Piezometer Network Summary
Plant McManus
Brunswick, GA

Well ID	Well Function	Northing ¹ (ft)	Eastings ¹ (ft)	Top of Casing Elevation ² (ft NAVD 88)	Ground Surface Elevation ^{2,3} (ft NAVD 88)	Total Depth ⁴ (ft BTOC)	Top of Screen Elevation ² (ft NAVD 88)	Bottom of Screen Elevation ² (ft NAVD 88)	
MW-01R	Piezometer	443632.5586	852715.1308	12.61	NA	27.44	0.17	-14.83	
MW-02	Piezometer	443354.3859	852304.1959	11.10	NA	26.80	-0.70	-15.70	
MW-03	Piezometer	443081.3356	851904.8549	11.26	NA	27.00	-0.60	-15.60	
MW-04	Piezometer	442854.6307	851408.1446	9.20	NA	27.40	-3.00	-18.00	
MW-05	Piezometer	442578.1982	850752.3477	13.24	NA	27.60	0.90	-14.10	
MW-06R	Piezometer	442378.5335	850499.0375	13.25	NA	20.00	3.25	-6.75	
MW-07	Piezometer	442792.9894	850224.3520	9.94	NA	21.50	3.40	-11.60	
MW-08	Piezometer	443310.0596	849977.9965	8.95	NA	27.70	-3.70	-18.70	
MW-09	Piezometer	443736.7716	849920.8976	10.10	NA	24.20	0.80	-14.20	
MW-10	Piezometer	444045.1224	850181.4059	10.24	NA	27.10	-2.80	-17.80	
MW-11	Piezometer	444359.5263	850709.3205	10.42	NA	32.20	-8.20	-23.20	
MW-12	Piezometer	444667.3620	851186.9003	10.08	NA	32.30	-8.60	-23.60	
MCM-03	Piezometer	444414.8800	851984.6700	9.97	7.10	27.70	-7.73	-17.73	
MCM-08	Piezometer	443758.8000	849716.9600	9.42	6.55	28.29	-8.39	-18.39	
MCM-09	Piezometer	443252.1584	850147.7478	Abandoned					
MCM-10	Piezometer	442791.8800	850453.0500	11.75	8.61	23.96	-1.25	-11.25	
MCM-13	Piezometer	443030.2300	851826.1900	12.56	9.79	27.46	-4.90	-14.90	
PZ-1	Piezometer for Dewatering	444127.6813	850308.3200	Abandoned					
PZ-2	Piezometer for Dewatering	444196.6588	850423.4598	Abandoned					
PZ-3	Piezometer for Dewatering	444264.8108	850540.0935	Abandoned					
PZ-4	Piezometer for Dewatering	444335.4506	850656.4801	Abandoned					
PZ-5	Piezometer for Dewatering	444471.1060	850888.7994	Abandoned					
PZ-6	Piezometer for Dewatering	444538.4862	851005.4620	Abandoned					
PZ-7	Piezometer for Dewatering	444605.9569	851121.6527	Abandoned					
PZ-8	Piezometer for Dewatering	444674.4265	851238.6722	Abandoned					
PZ-09	Piezometer	444082.13	849471.64	9.41	6.57	24.05	-4.56	-14.56	
PZ-10	Piezometer	444949.09	851673.98	12.17	9.74	22.91	-0.66	-10.66	
PZ-11	Piezometer	443222.86	849280.51	9.37	6.57	19.08	-4.63	-9.63	
PZ-12	Piezometer	443593.34	849396.87	7.90	5.02	18.70	-5.72	-10.72	
DPZ-01	Piezometer	444695.71	851277.40	9.71	7.36	40.78	-25.99	-30.99	
DPZ-03	Piezometer	444073.16	850218.83	9.46	7.04	47.57	-33.03	-38.03	
DPZ-04	Piezometer	443062.60	851881.94	11.45	8.96	51.23	-34.70	-39.70	
DPZ-05	Piezometer	443376.32	852342.11	11.00	8.60	51.20	-35.12	-40.12	
DPZ-06	Piezometer	444614.79	851846.27	12.04	9.59	40.50	-23.38	-28.38	
RW-1	Dewatering for Construction	444094.0012	850251.1636	9.39	NA	26.42	-2.61	-12.61	
RW-2	Dewatering for Construction	444161.8377	850367.2034	9.96	NA	27.27	-2.83	-12.83	
RW-3	Dewatering for Construction	444228.4307	850479.7659	9.89	NA	32.29	-3.07	-13.07	
RW-4	Dewatering for Construction	444299.3305	850599.2604	9.49	NA	26.88	-2.97	-12.97	
RW-5	Dewatering for Construction	444369.6765	850714.2378	10.11	NA	37.22	-2.92	-22.92	
RW-6	Dewatering for Construction	444436.3732	850831.7225	10.25	NA	36.58	-2.67	-22.67	
RW-7	Dewatering for Construction	444504.5857	850949.3512	10.19	NA	38.17	-7.69	-22.69	
RW-8	Dewatering for Construction	444572.9068	851064.4671	10.22	NA	31.62	-2.80	-17.80	
RW-9	Dewatering for Construction	444641.6045	851181.2956	10.26	NA	37.71	-7.66	-22.66	
RW-10	Dewatering for Construction	444706.8701	851295.5011	10.56	NA	37.80	-7.54	-22.54	

Notes:

1. Georgia State Plane - NAD 83 East Zone.
 2. NAVD 88 - North American Vertical Datum of 1988
 3. Ground Surface measured at the mag nail in the concrete pad
 4. ft BTOC - feet below top of casing
 5. PZ- 1 through PZ-8 were abandoned in 2019
 6. MCM-09 was abandoned in 2020
- NA - Not Available
Updated by : VF 1/8/21
Checked by: KMS 1/11/21

Table 3
Groundwater Sampling Event Summary
Plant McManus
Brunswick, GA

Well ID	Hydraulic Location	August 2020	October 2020	January 2021	Status of Monitoring Well
Purpose of Sampling Event		Appendix IV Annual	Assessment	Resample	
MCM-01	Upgradient	X	X	--	Assessment
MCM-02	Upgradient	X	X	--	Assessment
MCM-04	Downgradient	X	X	--	Assessment
MCM-05	Downgradient	X	X	X	Assessment
MCM-06	Downgradient	X	X	--	Assessment
MCM-07	Downgradient	X	X	--	Assessment
MCM-11	Upgradient	X	X	--	Assessment
MCM-12	Sidegradient	X	X	--	Assessment
MCM-14	Sidegradient	X	X	--	Assessment
MCM-15	Upgradient	X	X	--	Assessment
MCM-16	Upgradient	X	X	--	Assessment
MCM-17	Sidegradient	X	X	--	Assessment
MCM-18	Upgradient	X	X	--	Assessment
MCM-19	Upgradient	X	X	--	Assessment
MCM-20	Upgradient	X	X	--	Assessment
DPZ-02	Vertical Delineation Well	--	X	--	Assessment

Notes:

X - Sampled

-- Not Sampled

Updated By: VF 1/4/21

Checked By: KMS 1/12/21

Table 4
Summary of Groundwater Elevations
Plant McManus
Brunswick, Georgia

					Collection Date	August 24, 2020	August 24, 2020	October 14, 2020	October 14, 2020
						14:28		7:38	
							7:47		13:32
					Start Collection	15:37	N/A	8:38	N/A
					Stop Collection	16:45	N/A	9:16	N/A
Well ID	Top of Casing Elevation (ft NAVD 88)	Top of Casing Elevation (April 16, 2020) [ft NAVD 88]	Difference Between Elevations (ft NAVD 88)	Well Bottom Elevation (ft NAVD 88)	High Tide GW Elevation (ft NAVD 88) ¹	Low Tide GW Elevation (ft NAVD 88) ¹	High Tide GW Elevation (ft NAVD 88) ¹	Low Tide GW Elevation (ft NAVD 88) ¹	
MCM-01	8.76	8.63	-0.13	-18.56	3.89	3.75	4.88	4.67	
MCM-02	10.58	11.25	0.67	-16.77	6.30	6.33	7.27	7.27	
MCM-03	10.00	9.97	-0.03	-17.70	2.37	2.39	3.45	3.44	
MCM-04	12.47	12.39	-0.08	-16.10	2.72	2.14	4.09	3.49	
MCM-05	10.09	10.04	-0.05	-17.96	2.43	1.10	3.33	1.92	
MCM-06	10.17	10.15	-0.02	-17.03	2.45	0.68	3.20	1.25	
MCM-07	10.22	10.20	-0.02	-13.53	2.58	1.89	3.03	2.03	
MCM-08	9.41	9.42	0.01	-18.88	3.35	3.41	3.66	3.66	
MCM-09					Abandoned				
MCM-10	11.77	11.75	-0.02	-12.19	NM	NM	6.43	NM	
MCM-11	10.37	10.23	-0.14	-13.63	5.68	5.62	5.78	5.77	
MCM-12	12.03	11.87	-0.16	-16.97	2.61	2.74	3.24	3.33	
MCM-13	12.67	12.56	-0.11	-14.79	2.29	2.16	2.83	2.69	
MCM-14	11.66	11.50	-0.16	-16.45	2.77	0.65	3.43	1.15	
MCM-15	12.87	12.84	-0.03	-13.73	3.47	3.32	4.68	4.49	
MCM-16	15.81	16.02	0.21	-12.58	6.53	6.54	7.76	7.75	
MCM-17	11.67	11.49	-0.18	-15.77	2.39	1.76	2.98	2.32	
MCM-18	9.00	9.00	0.00	-18.86	3.03	3.12	3.67	3.69	
MCM-19	8.71	8.71	0.00	-19.61	3.24	1.65	3.77	2.07	
MCM-20	10.07	10.07	0.00	-12.98	3.21	1.43	4.28	2.29	
MW-01R	12.61	NS	NS	-14.83	NM	NM	NM	NM	
MW-02	11.10	NS	NS	-15.28	2.97	NM	NM	NM	
MW-03	11.26	NS	NS	-15.34	2.95	NM	NM	NM	
MW-04	9.20	NS	NS	-17.85	2.75	NM	3.3	NM	
MW-05	13.24	NS	NS	-14.21	NM	NM	NM	NM	
MW-06					Abandoned				
MW-06R	13.31	NS	NS	-10.29	NM	NM	7.65	NM	
MW-07	9.94	NS	NS	-11.62	NM	NM	NM	NM	
MW-08					Abandoned				
MW-09	10.10	NS	NS	-14.05	4.42	NM	4.04	NM	
MW-10	10.24	NS	NS	-17.06	2.51	NM	3.14	NM	
MW-11	10.35	NS	NS	-23.05	2.33	NM	3.00	NM	
MW-12	10.08	NS	NS	-23.47	5.24	NM	3.35	NM	
PZ-1					Abandoned				
PZ-2					Abandoned				
PZ-3					Abandoned				
PZ-4					Abandoned				
PZ-5					Abandoned				
PZ-6					Abandoned				
PZ-7					Abandoned				
PZ-8					Abandoned				
PZ-9	9.41	9.41	0.00	-14.64	NM	NM	4.04	NM	
PZ-10	12.17	12.17	0.00	-10.74	NM	NM	4.37	NM	
PZ-11	9.37	9.37	0.00	-9.71	NM	NM	4.44	NM	
PZ-12	7.90	7.90	0.00	-10.80	NM	NM	3.23	NM	
DPZ-01	9.71	9.71	0.00	-8.99	2.52	0.86	3.51	1.73	
DPZ-02	9.54	9.54	0.00	-9.16	2.60	0.80	3.23	1.29	
DPZ-03	9.46	9.46	0.00	-9.24	2.65	1.29	3.27	1.86	
DPZ-04	11.45	11.45	0.00	-7.25	2.75	1.67	3.42	2.25	
DPZ-05	11.00	11.00	0.00	-7.70	3.25	1.73	4.00	2.43	
DPZ-06	12.04	12.04	0.00	-6.66	2.71	2.63	4.06	3.94	
RW-1	9.39	NS	NS	-17.03	NM	NM	2.64	NM	
RW-2	9.96	NS	NS	-17.31	NM	NM	2.51	NM	
RW-3	9.89	NS	NS	-22.40	NM	NM	3.31	NM	
RW-4	9.49	NS	NS	-17.39	NM	NM	2.82	NM	
RW-5	10.11	NS	NS	-27.11	NM	NM	3.05	NM	
RW-6	10.25	NS	NS	-26.34	NM	NM	3.38	NM	
RW-7	10.19	NS	NS	-27.99	NM	NM	3.27	NM	
RW-8	10.22	NS	NS	-21.40	NM	NM	3.38	NM	
RW-9	10.26	NS	NS	-27.45	NM	NM	3.16	NM	
RW-10	10.56	NS	NS	-27.24	NM	NM	3.20	NM	
TPZ-1	Transducer	NM	NM	NM	NM	NM	NM	NM	
TPZ-2	Transducer	NM	NM	NM	NM	NM	NM	NM	
TPZ-3	Transducer								
TPZ-4	Transducer								
TPZ-5	Transducer	Abandoned							
Staff Gauge	Direct Read	NM	NM	NM	NM	NM	NM	NM	
Tide Gauge	NOAA Report	NM	NM	NM	NM	NM	NM	NM	
AP Monitor	Transducer	NM	NM	NM	1.75	1.84	2.99	2.98	
Oil Dock Monitor	Transducer	NM	NM	NM	4.09	-4.81	4.21	-4.43	

Notes:
¹Values calculated using April 16, 2020 survey data;
 NS = Not Surveyed
 NM = Not Measured
 NA = Not Applicable
 Updated by VF 10/28/20; Checked by WL 11/3/20

Table 5
 Plant McManus
 Surface Water Analytical Results
 October and November 2020

Location	Date Sampled	pH	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Arsenic (mg/L)	Boron (mg/L)	Lithium (mg/L)	Bicarbonate (mg/L)	Carbonate (mg/L)	Total Alk (mg/L)	TDS (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)
Surface Water Samples																
Background Surface Water																
BG-1LT	11/18/2020	7.45	138	492	145	6810	0.0026 J	2.7	0.11	114	<5.0	114	27100	11500	<10.0	1530
BG-2HT	11/17/2020	7.49	154	553	161	7310	0.0033 J	2.9	0.11	116	<5.0	116	23800	12300	<10.0	1630
Surface Water Transects																
T1-1HT	10/28/2020	7.43	202	647	189	3070	0.0022 J	2.4	0.089	103	<5.0	103	21900	10300	<0.050	1460
T1-1LT	10/27/2020	7.48	180	562	169	2940	0.0024 J	2.2	0.075	99.2	<5.0	99.2	18900	9880	<0.050	1360
T1-2HT	10/28/2020	7.30	197	636	187	3500	0.0023 J	2.5	0.090	110	<5.0	110	21800	11700	<0.050	1620
T1-2HTS	10/28/2020	7.37	210	668	199	3990	0.0023 J	2.5	0.089	111	<5.0	111	20800	17100	<0.050	2480
T1-2LT	10/27/2020	7.51	182	560	175	3870	0.0026 J	2.3	0.083	102	<5.0	102	18700	14500	<0.050	2060
T1-3HT	10/28/2020	7.26	221	683	214	4000	0.0024 J	2.5	0.091	109	<5.0	109	21400	17300	<0.050	1410
T1-3HTS	10/28/2020	7.34	<1.9	<1.4	<60.8	<12.2	0.0023 J	2.5	0.096	107	<5.0	107	20600	15400	<0.050	2220
T1-3LT	10/27/2020	7.92	66.4	139	<60.8	1200	0.0024 J	0.78	0.027 J	48.6	<5.0	48.6	7400	2190	0.32	359
T1-4HT	10/28/2020	7.39	202	658	187	4340	0.0026 J	2.6	0.090	104	<5.0	104	19100	14700	<0.050	2120
T1-4HTS	10/28/2020	7.36	202	665	186	3540	0.0025 J	2.6	0.085	105	<5.0	105	19800	11200	<0.050	1540
T1-4LT	10/27/2020	7.34	203	671	188	4650	0.0026 J	2.5	0.090	104	<5.0	104	22300	12600	<0.050	1800
T2-1HT	10/28/2020	7.44	192	651	179	4450	0.0024 J	2.6	0.091	106	<5.0	106	19800	12800	<0.050	1820
T2-2HT	10/28/2020	7.30	207	690	193	3940	0.0024 J	2.5	0.093	108	<5.0	108	20800	11600	<0.050	1590
T2-2HTS	10/28/2020	7.38	192	639	179	3590	0.0025 J	2.6	0.091	105	<5.0	105	19400	11300	<0.050	1540
T2-2LT	10/27/2020	7.47	191	622	177	3910	0.0033 J	2.5	0.087	111	<5.0	111	20200	11000	<0.050	1560
T2-3HT	10/28/2020	7.26	206	669	193	3910	0.0024 J	2.4	0.093	106	<5.0	106	19700	11000	<0.050	1520
T2-3HTS	10/28/2020	7.37	199	660	187	4070	0.0024 J	2.5	0.092	104	<5.0	104	19800	12700	<0.050	1870
T2-3LT	10/27/2020	7.31	153	535	143	3120	0.0029 J	2.2	0.084	104	<5.0	104	19300	9330	<0.050	1260
T2-4HT	10/28/2020	7.33	205	654	202	4200	0.0026 J	2.4	0.092	105	<5.0	105	20600	9790	<0.050	1330
T2-4HTS	10/28/2020	7.35	198	635	195	5200	0.0025 J	2.6	0.093	106	<5.0	106	19900	13800	<0.050	2150
T2-4LT	10/27/2020	7.33	196	618	193	5270	0.0026 J	2.5	0.089	105	<5.0	105	19600	10300	<0.050	1430
T3-1HT	11/17/2020	7.43	17.5	57.4	17.4	6760	0.0019 J	2.4	0.093	110	<5.0	110	20900	10600	<0.050	1330
T3-2HT	11/17/2020	7.39	183	633	181	6800	0.0022 J	2.6	0.093	110	<5.0	110	20300	10900	<10.0	1400
T3-2HTS	11/17/2020	7.43	178	585	176	6900	0.0026 J	2.7	0.099	111	<5.0	111	22000	10800	<10.0	1370
T3-2LT	11/18/2020	7.60	157	545	158	6800	0.0023 J	2.5	0.095	112	<5.0	112	24000	11000	<10.0	1420
T3-3HT	11/17/2020	7.37	171	571	172	6800	0.0022 J	2.7	0.093	111	<5.0	111	21900	11200	<10.0	1430
T3-3HTS	11/17/2020	7.50	153	529	154	6710	0.0020 J	2.5	0.090	113	<5.0	113	20400	11000	<10.0	1400
T3-3LT	11/18/2020	7.58	154	514	157	6580	0.0020 J	2.4	0.093	110	<5.0	110	26100	11000	<10.0	1370
T3-4HT	11/17/2020	7.42	161	560	165	6850	0.0024 J	2.8	0.10	114	<5.0	114	22700	11300	<10.0	1480
T3-4HTS	11/17/2020	7.48	167	561	170	7080	0.0025 J	2.7	0.10	114	<5.0	114	21900	11500	<10.0	1500
T3-4LT	11/18/2020	7.54	156	524	160	6680	0.0026 J	2.7	0.099	112	<5.0	112	32200	11300	<10.0	1490
T4-1L	10/28/2020	7.66	199	667	193	5870	0.0037 J	2.6	0.10	110	<5.0	110	21000	11200	<0.050	1570
T4-2L	10/28/2020	7.49	196	662	193	5680	0.0034 J	2.5	0.098	114	<5.0	114	22200	13200	<0.050	1430
T4-3L	10/28/2020	7.49	206	668	205	5020	0.0037 J	2.7	0.10	114	<5.0	114	23800	13600	<0.050	1460
Notes:																
Results shown in milligrams per liter (mg/l)																
"<" - Not detected at the laboratory's Method Detection Limit (MDL) shown																
"J" - Estimated concentration greater than the laboratory's MDL, but less than the laboratory's Reporting Limit																

Updated By: VF 1/11/21
 Checked By: KMS 1/12/21

Table 6
 2020 Horizontal Groundwater Flow Velocity Calculations
 Plant McManus
 Brunswick, GA

Tide Level	10/14/2020		10/14/2020	
	Low	Low	High	High
Well 1	MCM-16	MCM-11	MCM-16	MCM-11
Well 2	MCM-02	MCM-12	MCM-02	MCM-12
Distance between	75.63	458.82	75.63	458.82
Head Well 1	7.75	5.77	7.76	5.78
Head Well 2	7.27	3.33	7.27	3.24
Hydraulic gradient i	0.00636	0.00531	0.00640	0.00553
K (cm/s site avg. from slug tests)	0.0012	0.0012	0.0012	0.0012
Ne (0.35 from HAR)	0.35	0.35	0.35	0.35
Velocity in cm/s	2.14E-05	1.79E-05	2.15E-05	1.86E-05
Velocity in ft/day	0.0606	0.0506	0.0610	0.0527
Velocity in ft/year	22.13	18.48	22.25	19.23
Average Velocity ft/day	0.056		0.057	
Average Velocity ft/year	20.30		20.74	

Low Tide Groundwater Elevations were measured from transducer 10/14/20

High Tide Groundwater Elevations were measured from transducer 10/14/20

Created By: KMS 1/11/21

Checked By: VF 1/12/21

Georgia Power Company
Plant McManus
Table 7
Groundwater Data Summary

WELL ID Sample Date	Appendix III							Appendix IV													
	Boron	Calcium	Chloride	Fluoride	Sulfate	TDS	pH	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Radium	Selenium	Thallium
DPZ-02																					
10/15/2020	2.1	225	8000	0.11	989	19300	7.08		0.021	0.071	<0.001			<0.001	<0.0015	0.093			6.65	<0.0012	
MCM-01																					
8/26/2020	<0.12	10.5	13.2	<0.05	32.9	82	5.79	<0.0025	0.0079	0.056	<0.001	<0.0012	<0.0099	<0.001	<0.0015	<0.0078	<0.12	<0.0022	0.491 U	<0.0012	<0.001
10/13/2020	<0.12	9.8	13.5	<0.05	32.3	113	5.69		0.0061	0.06	<0.001			<0.001	<0.0015	<0.0078			0.855 U	<0.0012	
MCM-02																					
8/26/2020	<0.12	4.6	26.7	<0.05	28	89	5.03	<0.0025	<0.0017	0.092	<0.001	<0.0012	<0.0099	<0.001	0.0018 J	<0.0078	<0.12	<0.0022	0.47 U	<0.0012	<0.001
10/13/2020	<0.12	3.8	25.7	<0.05	27.6	118	5.03		<0.0017	0.086	<0.001			<0.001	<0.0015	<0.0078			0.56 U	<0.0012	
MCM-04																					
8/26/2020	<0.12	20.6	42	<0.05	112	289	4.95	<0.0025	0.0059	0.086	<0.001	<0.0012	<0.0099	0.015	<0.0015	<0.0078	<0.12	<0.0022	5.28	<0.0012	<0.001
10/13/2020	<0.12	12.5	54.4	<0.05	92.3	<25	5.25		0.0022 J	0.055	<0.001			0.0063	<0.0015	<0.0078			3.71	<0.0012	
MCM-05																					
8/26/2020	0.43 J	21.5	558	0.39	61.9	1260	6.59	<0.0025	<0.0017	0.0065 J	<0.001	<0.0012	<0.0099	<0.001	<0.0015	0.018 J	<0.12	<0.0022	0.841 U	<0.0012	<0.001
10/15/2020	0.61	69.1	1660	0.22	147	5100	6.53		0.024	0.45	<0.001			0.0019 J	<0.0015	0.57			2.56	0.0028 J	
MCM-06																					
8/26/2020	1.6	254	6510	<0.05	514	14900	6.89	<0.0031	0.46	0.15 J	<0.0012	<0.0015	<0.012	<0.0012	<0.0019	0.096 J	<0.12	<0.0028	8.06	<0.0015	<0.0012
10/14/2020	1.5	245	6930	<0.05	552	15200	6.93		0.43	0.14	<0.001			<0.001	<0.0015	0.11			8.97	<0.0012	
MCM-07																					
8/26/2020	1.6	259	7330	<0.05	895	19200	6.32	<0.0025	0.019	0.22	<0.001	<0.0012	<0.0099	<0.001	0.014	0.045 J	<0.12	<0.0022	11.8	<0.0012	<0.001
10/14/2020	1.8	216	8170	<0.05	938	18400	6.32		0.013	0.19	<0.001			<0.001	<0.0015	0.039 J			13.1	<0.0012	
MCM-11																					
8/26/2020	<0.12	3.2	13.3	0.097 J	21.8	86	4.96	<0.0025	0.0044 J	0.041	<0.001	<0.0012	<0.0099	<0.001	<0.0015	<0.0078	<0.12	<0.0022	0.424 U	<0.0012	<0.001
10/12/2020	<0.12	2.8	13.9	<0.05	19.3	94	5		0.0047 J	0.039	<0.001			<0.001	<0.0015	<0.0078			2.7	<0.0012	
MCM-12																					
8/26/2020	1.4	7.5	529	1.2	<0.5	1700	6.32	<0.0025	<0.0017	0.1	0.001 J	<0.0012	<0.0099	<0.001	<0.0015	0.013 J	<0.12	<0.0022	2.14	<0.0012	<0.001
10/12/2020	1.3	6.1	552	1.2	<0.5	1560	6.35		<0.0017	0.1	0.001 J			<0.001	<0.0015	0.011 J			2.66	<0.0012	

Georgia Power Company
Plant McManus
Table 7
Groundwater Data Summary

WELL ID Sample Date	Appendix III							Appendix IV													
	Boron	Calcium	Chloride	Fluoride	Sulfate	TDS	pH	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Radium	Selenium	Thallium
MCM-14																					
8/26/2020	1.2	284	<0.6	<0.05	730	14700	6.62	<0.0025	<0.0017	0.12	<0.001	<0.0012	<0.0099	<0.001	<0.0015	0.054	<0.12	<0.0022	9.6	<0.0012	<0.001
10/13/2020	1.1	40.9	6230	<0.05	695	15600	6.56		<0.0017	0.14	<0.001			<0.001	<0.0015	0.046 J			7.43	<0.0012	
MCM-15																					
8/26/2020	<0.12	5.8	14.4	<0.05	14	101	5.33	<0.0025	0.0024 J	0.039	<0.001	<0.0012	<0.0099	<0.001	<0.0015	<0.0078	<0.12	<0.0022	1.29 U	<0.0012	<0.001
10/13/2020	<0.12	0.83	3.8	<0.05	7.6	63	5.02		0.0042 J	0.024	<0.001			<0.001	<0.0015	<0.0078			3.32	<0.0012	
MCM-16																					
8/26/2020	<0.12	5.6	22.2	<0.05	27.8	95	4.92	<0.0025	<0.0017	0.12	<0.001	<0.0012	<0.0099	<0.001	<0.0015	<0.0078	<0.12	<0.0022	0.643 U	<0.0012	<0.001
10/13/2020	<0.12	5.7	23.3	<0.05	26.8	115	5.17		<0.0017	0.11	<0.001			<0.001	<0.0015	<0.0078			1.71	<0.0012	
MCM-17																					
8/26/2020	1.8	146	<0.6	<0.05	341	8400	6.65	<0.0025	<0.0017	0.15	<0.001	<0.0012	<0.0099	<0.001	<0.0015	0.027 J	<0.12	<0.0022	8.51	<0.0012	<0.001
10/13/2020	1.8	86.4	3980	<0.05	378	8750	6.34		<0.0017	0.14	<0.001			<0.001	<0.0015	0.028 J			7.75	<0.0012	
MCM-18																					
8/26/2020	0.25 J	25.7	<0.6	0.096 J	170	2980	4.27	<0.0025	0.0019 J	0.095	0.0042	<0.0012	<0.0099	<0.001	0.0035 J	<0.0078	<0.12	<0.0022	10.5	0.0014 J	<0.001
10/12/2020	0.24 J	19.1	1340	0.34	191	2920	4.29		<0.0017	0.091	0.0041			<0.001	<0.0015	<0.0078			8.83	<0.0012	
MCM-19																					
8/26/2020	0.91	121	5390	<0.05	854	13300	5.25	<0.0025	0.012	0.11	0.011	<0.0012	<0.0099	<0.001	<0.0015	0.018 J	<0.12	<0.0022	22.6	0.006 J	<0.001
10/13/2020	0.73	125	5260	<0.05	609	6600	5.04		0.0089	0.12	0.015			<0.001	<0.0015	0.022 J			14.1	0.0076 J	
MCM-20																					
8/26/2020	1	110	5470	0.058 J	639	15100	3.78	<0.0025	0.018	0.12	0.018	<0.0012	<0.0099	0.034	<0.0015	0.026 J	<0.12	<0.0022	36.7	0.0052 J	<0.001
10/13/2020	1.1	128	5980	<0.05	638	13900	3.72		0.018	0.12	0.017			0.032	<0.0015	0.025 J			30.3	0.0056 J	

Notes:

1. Results for substances (except radium) are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L)²
2. < indicates the substance was not detected above the analytical Method Detection Limit (MDL)
3. J - Estimated value. Substance was detected above the MDL and below the laboratory's Reporting Limit (RL).
4. U - Estimated value for radium. Substance was detected below the Minimum Detection Concentration (MDC).
5. TDS - Total Dissolved Solids
6. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring
7. Blank values indicate the parameter was not analyzed
8. pH - Parameter measured in the field
9. pH results reported in standard units (SU)

Table 8
Federal Groundwater Protection Standards
Plant McManus
Brunswick, Georgia

MCMANUS ASH POND GWPS - FEDERAL				
Constituent Name	MCL	RSL	Background Limit	GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.031	0.031
Barium, Total (mg/L)	2		0.22	2
Beryllium, Total (mg/L)	0.004		0.021	0.021
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.011	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.036	0.036
Combined Radium, Total (pCi/L)	5		55.8	55.8
Fluoride, Total (mg/L)	4		1.5	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.015
Lithium, Total (mg/L)	n/a	0.04	0.03	0.04
Mercury, Total (mg/L)	0.002		0.0007	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.1
Selenium, Total (mg/L)	0.05		0.15	0.15
Thallium, Total (mg/L)	0.002		0.001	0.002

Groundwater Protection Standards from Appendix F- Groundwater Stats Consulting, February 2021

Notes:

mg/L = milligram per liter;
pCi/L = picocuries per liter;
n/a = Not Available;
MCL = Maximum Contaminant Level;
RSL = Rule Specified Limit (Not yet adopted by EPD)

[1] The background limits are used when determining the groundwater protection standard (GWPS) under 40 CFR § 257.95 (h) and Georgia Environmental Protection Division (EPD) Rule 391-3-4-.10(6)(a).

[2] Under 40 CFR § 257(h)(1-3) the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background levels for constituents where the background level is higher than the MCL or rule specified GWPS.

Table 9
 Georgia State Groundwater Protection Standards
 Plant McManus
 Brunswick, Georgia

MCMANUS ASH POND GWPS - STATE				
Constituent Name	MCL	RSL	Background Limit	GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006
Arsenic, Total (mg/L)	0.01		0.031	0.031
Barium, Total (mg/L)	2		0.22	2
Beryllium, Total (mg/L)	0.004		0.021	0.021
Cadmium, Total (mg/L)	0.005		0.0025	0.005
Chromium, Total (mg/L)	0.1		0.011	0.1
Cobalt, Total (mg/L)	n/a	0.006	0.036	0.036
Combined Radium, Total (pCi/L)	5		55.8	55.8
Fluoride, Total (mg/L)	4		1.5	4
Lead, Total (mg/L)	n/a	0.015	0.005	0.005
Lithium, Total (mg/L)	n/a	0.04	0.03	0.03
Mercury, Total (mg/L)	0.002		0.0007	0.002
Molybdenum, Total (mg/L)	n/a	0.1	0.01	0.01
Selenium, Total (mg/L)	0.05		0.15	0.15
Thallium, Total (mg/L)	0.002		0.001	0.002

Groundwater Protection Standards from Appendix F- Groundwater Stats Consulting, February 2021

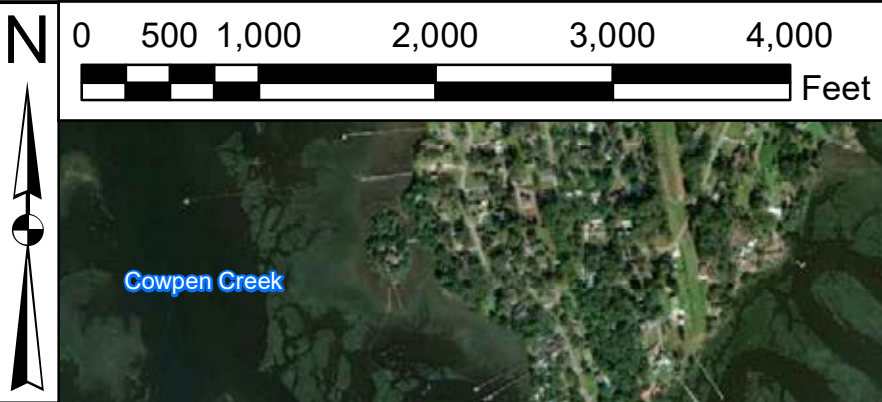
Notes:

- mg/L = milligram per liter;
- pCi/L = picocuries per liter;
- n/a = Not Available;
- MCL = Maximum Contaminant Level;
- RSL = Rule Specified Limit (Not yet adopted by EPD)

[1] The background limits are used when determining the groundwater protection standard (GWPS) under 40 CFR § 257.95 (h) and Georgia Environmental Protection Division (EPD) Rule 391-3-4-.10(6)(a).

[2] Under existing EPD rules, the GWPS is (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background levels for constituents where the background level is higher than the MCL.

FIGURES




Cowpen Creek

Burnett Creek

AP-1

Plant McManus

Turtle River

Legend
 CCR Permitted Boundary



**Plant McManus
Site Location Map**

**Figure
1**

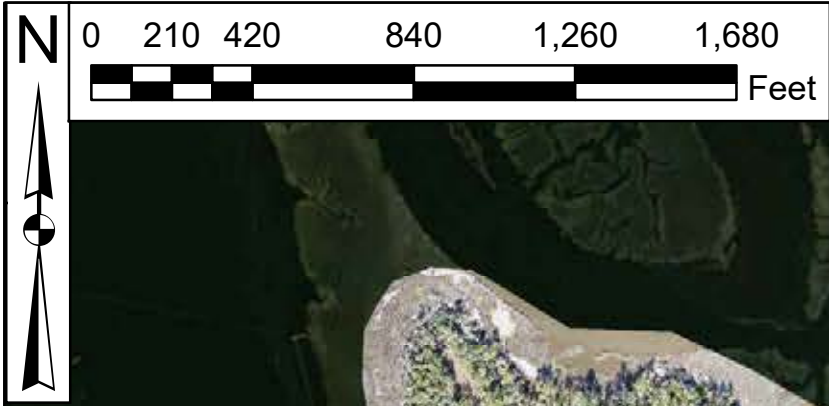
Woodstock, GA

February 2021

Brunswick, GA

X:\ArcGIS\McManus\2020\CCR\Annual Report

Document Path: C:\Users\resol\Resolute Environmental\RE_SP - Environmental\ArcGIS\McManus2020\CCR\Annual Report\Figure 2 - Site Plan and Well Locations Map.mxd



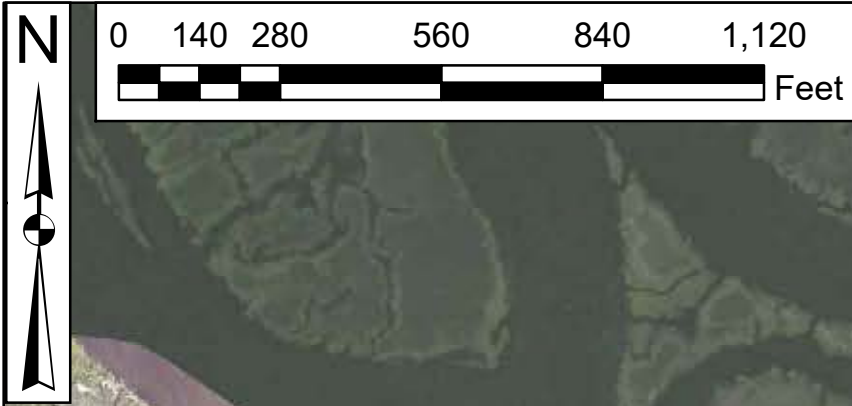
- Legend**
- Monitoring Well
 - Vertical Delineation Well
 - CCR Permitted Boundary

Resolute
Environmental & Water Resources Consulting

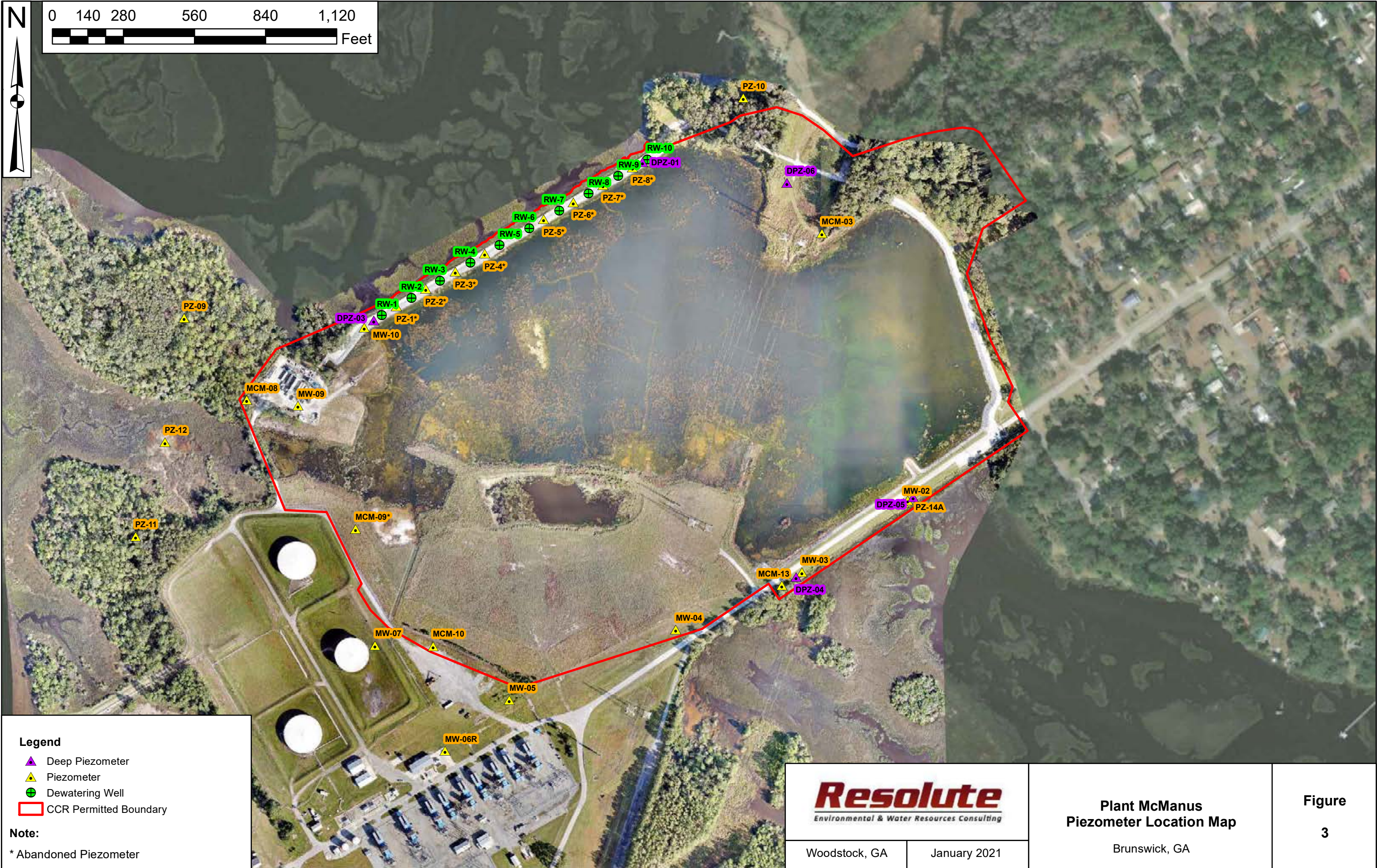
Woodstock, GA	June 2020
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Plant McManus
Site Plan and Monitoring Well
Location Map
Brunswick, GA

Figure
2



X:\ArcGIS\Manus2019\CCR\Hydro Geologic Report



Legend

- ▲ Deep Piezometer
- ▲ Piezometer
- ⊕ Dewatering Well
- CCR Permitted Boundary

Note:

* Abandoned Piezometer

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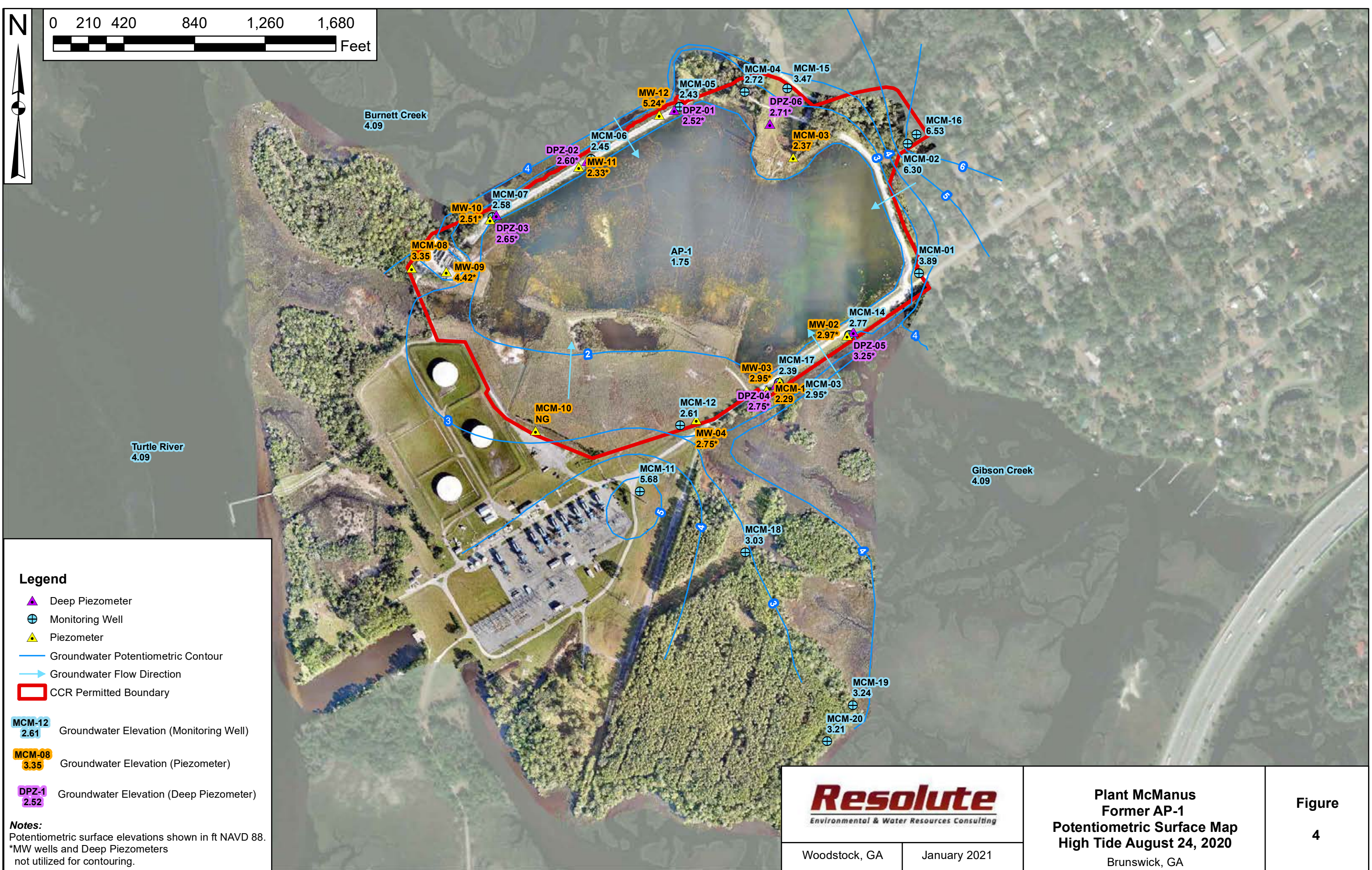
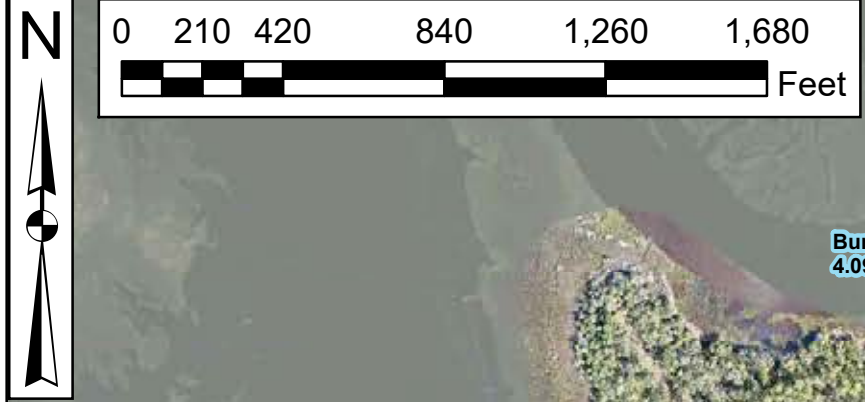
Woodstock, GA	January 2021
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**Plant McManus
Piezometer Location Map**

Brunswick, GA

**Figure
3**

Document Path: C:\Users\resol\Resolute Environmental\RE_SP - Environmental\ArcGIS\McManus\2020\CCR\Pot Maps\McManus Pot Map 8.24.20 HT.mxd



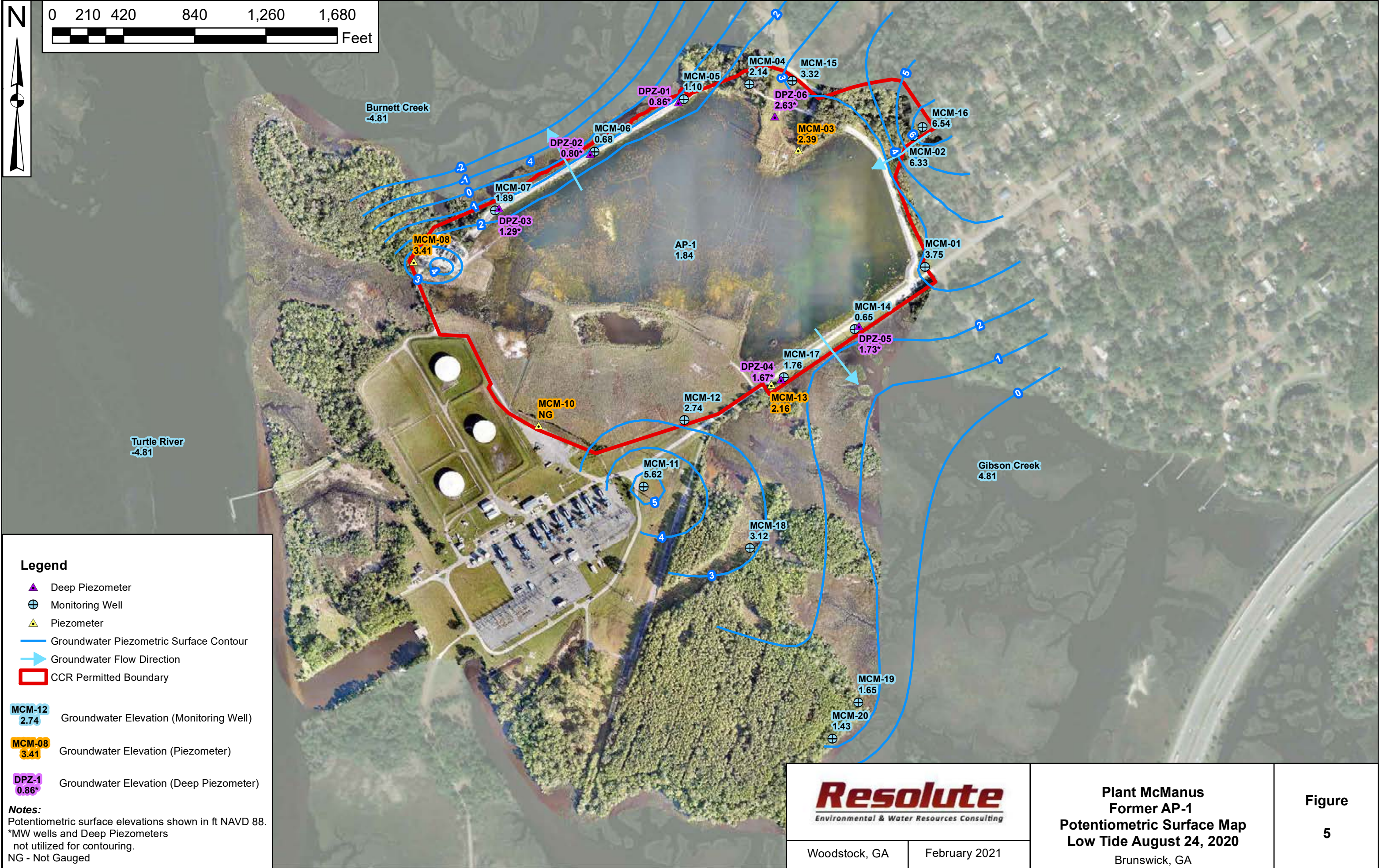
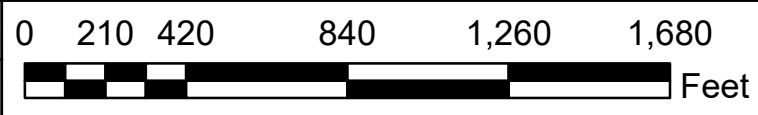
Legend

- Deep Piezometer
 - Monitoring Well
 - Piezometer
 - Groundwater Potentiometric Contour
 - Groundwater Flow Direction
 - CCR Permitted Boundary
-
- MCM-12 2.61 Groundwater Elevation (Monitoring Well)
 - MCM-08 3.35 Groundwater Elevation (Piezometer)
 - DPZ-1 2.52 Groundwater Elevation (Deep Piezometer)

Notes:
Potentiometric surface elevations shown in ft NAVD 88.
*MW wells and Deep Piezometers not utilized for contouring.

		Plant McManus Former AP-1 Potentiometric Surface Map High Tide August 24, 2020	Figure 4

Document Path: C:\Users\resol\Resolute Environmental\RE_SP - Environmental\ArcGIS\McManus\2020\CCR\Pot Maps\McManus Pot Map 8.24.20 LT.mxd



Legend

- Deep Piezometer
- Monitoring Well
- Piezometer
- Groundwater Piezometric Surface Contour
- Groundwater Flow Direction
- CCR Permitted Boundary

MCM-12
2.74 Groundwater Elevation (Monitoring Well)

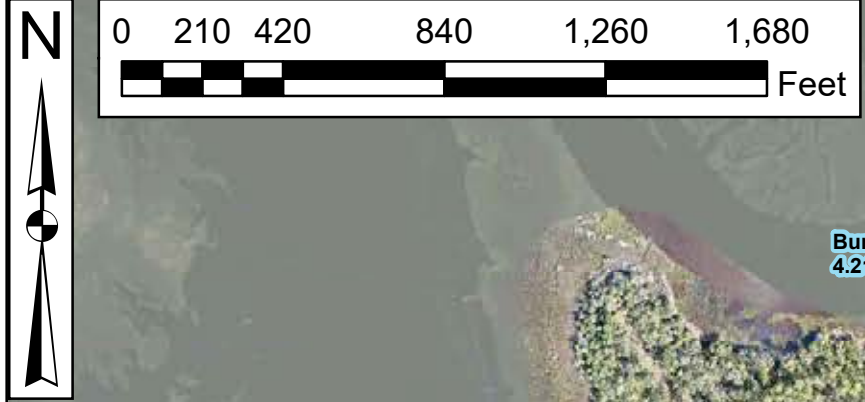
MCM-08
3.41 Groundwater Elevation (Piezometer)

DPZ-1
0.86* Groundwater Elevation (Deep Piezometer)

Notes:
Potentiometric surface elevations shown in ft NAVD 88.
*MW wells and Deep Piezometers not utilized for contouring.
NG - Not Gauged

		Plant McManus Former AP-1 Potentiometric Surface Map Low Tide August 24, 2020	Figure 5

Document Path: C:\Users\resol\Resolute Environmental\RE_SP - Environmental\ArcGIS\McManus\2020\CCR\Pot Maps\McManus Pot Map 10.14.20 HT.mxd



Legend

- Deep Piezometer
- Monitoring Well
- Piezometer
- Vertical Delineation Well
- Groundwater Potentiometric Contour
- Groundwater Flow Direction
- CCR Permitted Boundary

MCM-12 3.24 Groundwater Elevation (Monitoring Well)

MCM-08 3.66 Groundwater Elevation (Piezometer)

DPZ-01 3.51 Groundwater Elevation (Deep Piezometer)

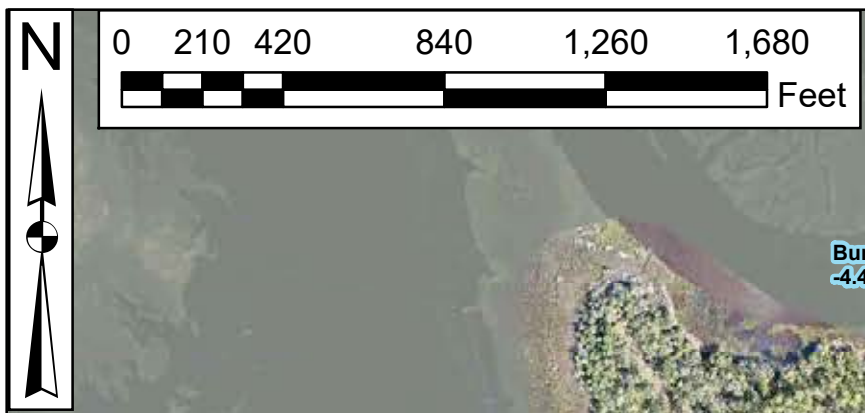
DPZ-02 3.23* Groundwater Elevation (Vertical Delineation Well)

Notes:
 Potentiometric surface elevations shown in ft NAVD 88.
 *Deep piezometers not utilized for contouring. DPZ-02 has been reclassified as a vertical delineation well.



		Plant McManus Former AP-1 Potentiometric Surface Map High Tide October 14, 2020		Figure 6
		Woodstock, GA	November 2020	

Document Path: C:\Users\resoll\Resolute Environmental\RE_SP - Environmental\ArcGIS\McManus\2020\CCR\Pot Maps\McManus Pot Map 10.14.20 LT.mxd



Legend

- Deep Piezometer
- Monitoring Well
- Piezometer
- Vertical Delineation Well
- Groundwater Potentiometric Surface Contour
- Groundwater Flow Direction

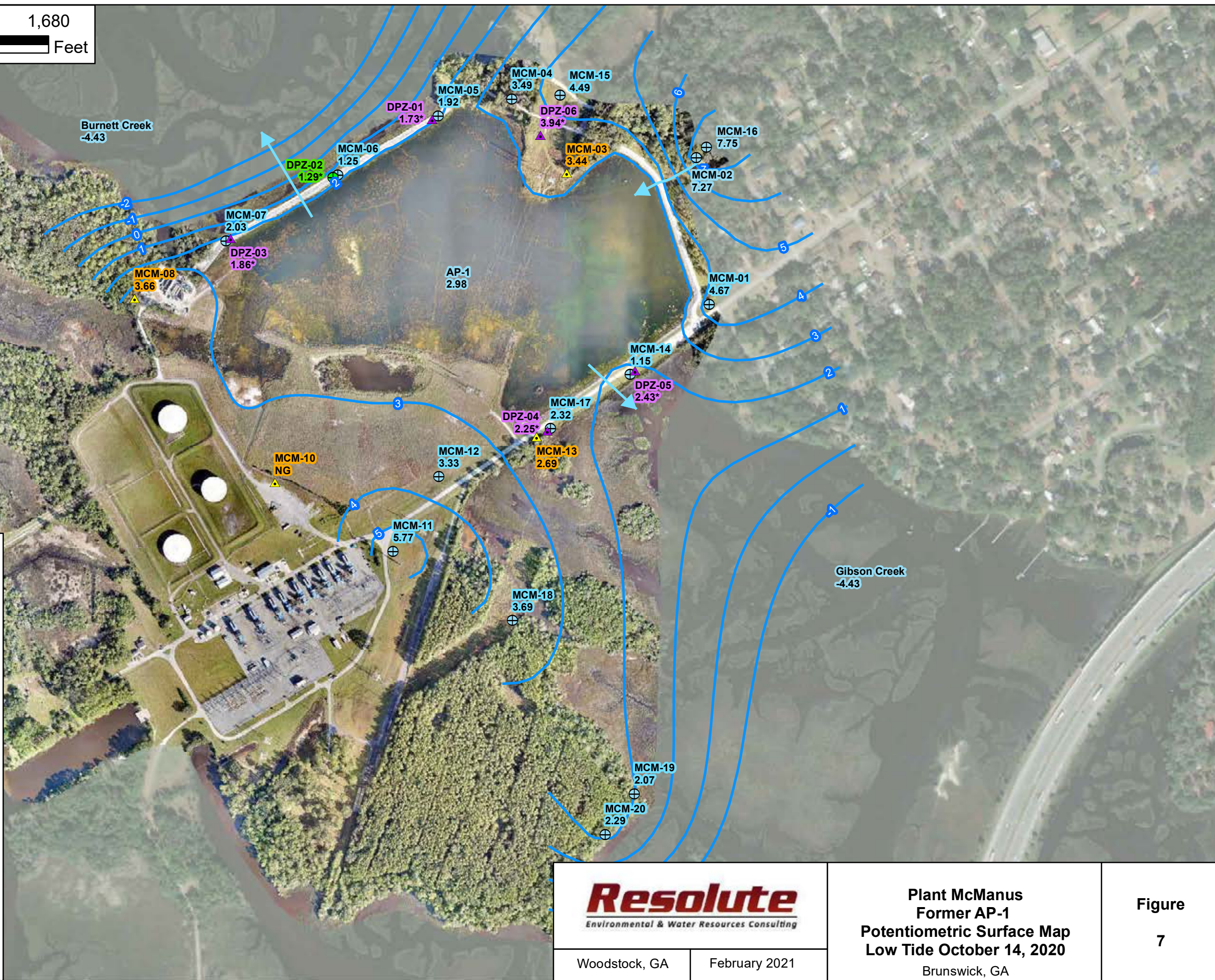
MCM-12 3.33 Groundwater Elevation (Monitoring Well)

MCM-08 3.66 Groundwater Elevation (Piezometer)

DPZ-01 1.73* Groundwater Elevation (Deep Piezometer)

DPZ-02 1.29* Groundwater Elevation (Vertical Delineation Well)

Notes:
 Potentiometric surface elevations shown in ft NAVD 88.
 *Deep piezometers not utilized for contouring. DPZ-02 has been reclassified as a vertical delineation well.
 NG - Not Gauged



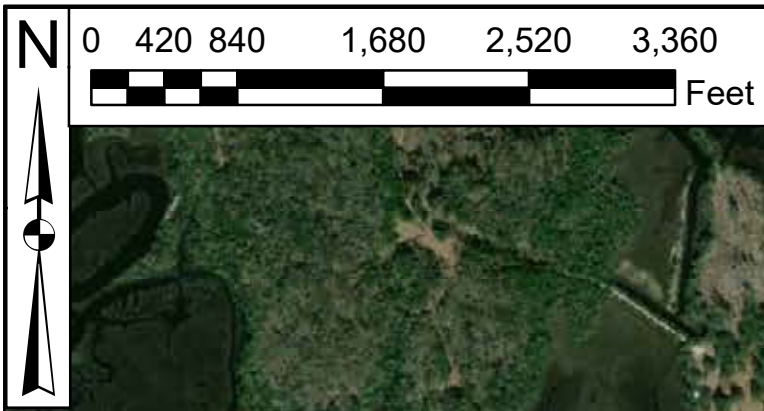
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Woodstock, GA February 2021

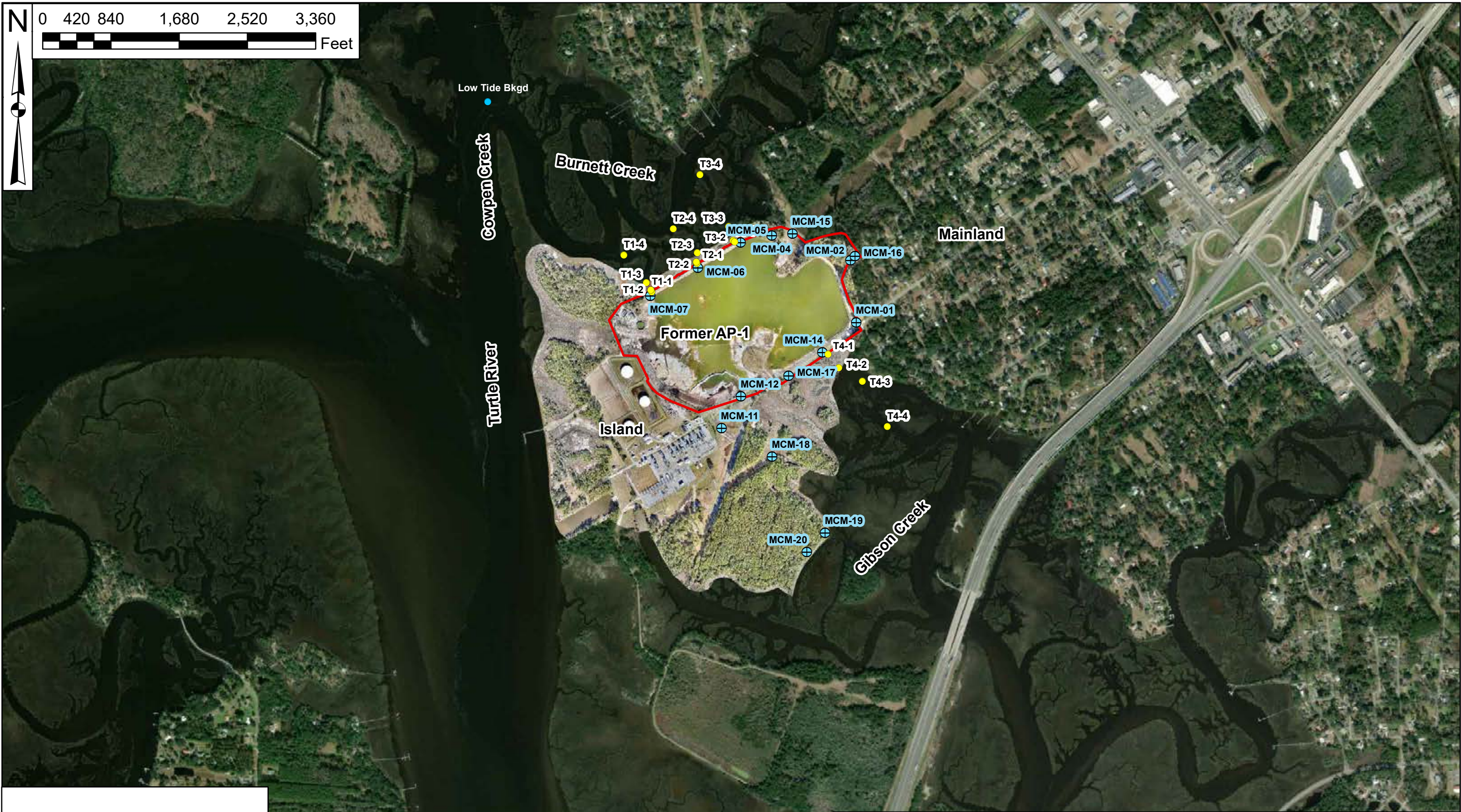
**Plant McManus
 Former AP-1
 Potentiometric Surface Map
 Low Tide October 14, 2020**

Brunswick, GA

**Figure
 7**



X:\ArcGIS\McManus\ASD2020\AlternateSourceDemonstration\SamplingLocations



Legend

- Surface Water
- Background Surface Water Sample
- CCR Permitted Boundary

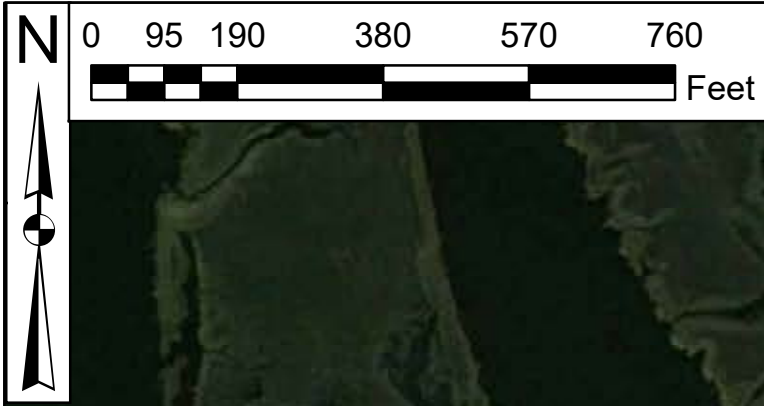
High Tide Bkgd ●

Resolute
Environmental & Water Resources Consulting

Woodstock, GA	February 2021
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**Plant McManus
Surface Water
Sample Collection Locations**
Brunswick, GA

**Figure
8**



X:\ArcGIS\McManus\ASD2020\AlternateSourceDemonstration\SamplingLocations

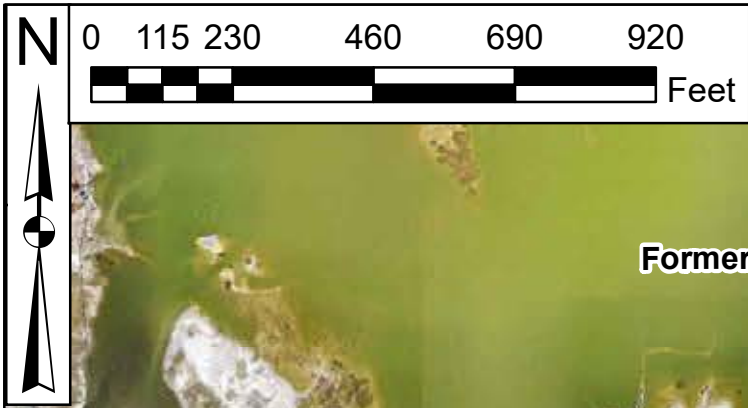


Legend	
●	Surface Water Sample
	CCR Permitted Boundary

Woodstock, GA	February 2021

Plant McManus
Surface Water Samples
Transects 1-3
 Brunswick, GA

Figure
9



Former AP-1

T4-1L
T4-1HB
T4-1HS

T4-2L
T4-2HB
T4-2HS

T4-3L
T4-3HB
T4-3HS

T4-4L
T4-4HB
T4-4HS

Transect 4

Gibson Creek

- Legend**
- Surface Water Sample
 - CCR Permitted Boundary



**Plant McManus
Surface Water Samples
Transect 4**
Brunswick, GA

**Figure
10**

Woodstock, GA February 2021

X:\ArcGIS\McManus\ASD2020\AlternateSourceDemonstration\SamplingLocations

APPENDIX A

Laboratory Analytical and Field Sampling Reports For Monitoring Events

Appendix A1: Laboratory Analytical Data Packages and Data Validation Reports

Appendix A2: Field Sampling Forms and Calibration Reports

APPENDIX A1

Laboratory Analytical Data Packages and Data Validation Reports

September 23, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

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

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

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SAMPLE SUMMARY

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92493014001	MCM-01	Water	08/26/20 13:38	08/28/20 11:35
92493014002	MCM-02	Water	08/26/20 14:25	08/28/20 11:35
92493014003	MCM-04	Water	08/26/20 11:58	08/28/20 11:35
92493014004	MCM-05	Water	08/26/20 12:47	08/28/20 11:35
92493014005	MCM-07	Water	08/26/20 11:21	08/28/20 11:35
92493014006	MCM-11	Water	08/26/20 10:26	08/28/20 11:35
92493014007	MCM-12	Water	08/26/20 10:29	08/28/20 11:35
92493014008	MCM-14	Water	08/26/20 11:48	08/28/20 11:35
92493014009	MCM-15	Water	08/26/20 14:49	08/28/20 11:35
92493014010	MCM-16	Water	08/26/20 16:52	08/28/20 11:35
92493014011	MCM-17	Water	08/26/20 15:56	08/28/20 11:35
92493014012	MCM-18	Water	08/26/20 11:58	08/28/20 11:35
92493014013	MCM-19	Water	08/26/20 14:30	08/28/20 11:35
92493014014	MCM-20	Water	08/26/20 15:48	08/28/20 11:35
92493014015	FBL082620	Water	08/26/20 16:49	08/28/20 11:35
92493014016	EQBL082620	Water	08/26/20 16:55	08/28/20 11:35
92493014017	DUP-1	Water	08/26/20 00:00	08/28/20 11:35
92493014018	DUP-2	Water	08/26/20 00:00	08/28/20 11:35
92493014019	MCM-06	Water	08/26/20 16:08	08/28/20 11:35

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SAMPLE ANALYTE COUNT

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92493014001	MCM-01	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92493014002	MCM-02	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92493014003	MCM-04	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92493014004	MCM-05	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92493014005	MCM-07	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92493014006	MCM-11	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92493014007	MCM-12	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92493014008	MCM-14	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A

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SAMPLE ANALYTE COUNT

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92493014009	MCM-15	EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
92493014010	MCM-16	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
92493014011	MCM-17	EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
92493014012	MCM-18	SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92493014013	MCM-19	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
92493014014	MCM-20	EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
92493014015	FBL082620	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A

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SAMPLE ANALYTE COUNT

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92493014016	EQBL082620	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
92493014017	DUP-1	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
92493014018	DUP-2	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	RED	1	PASI-A
92493014019	MCM-06	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	BG2, JOR	13	PASI-A
		EPA 7470A	SOO	1	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92493014001	MCM-01					
	pH	5.79	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	10.5	mg/L	0.10	09/01/20 23:02	
EPA 6020B	Arsenic	0.0079	mg/L	0.0050	09/16/20 17:53	
EPA 6020B	Barium	0.056	mg/L	0.010	09/16/20 17:53	
SM 2540C-2011	Total Dissolved Solids	82.0	mg/L	25.0	08/31/20 18:33	
EPA 300.0 Rev 2.1 1993	Chloride	13.2	mg/L	1.0	08/29/20 18:18	
EPA 300.0 Rev 2.1 1993	Sulfate	32.9	mg/L	1.0	08/29/20 18:18	
92493014002	MCM-02					
	pH	5.03	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	4.6	mg/L	0.10	09/02/20 22:37	
EPA 6020B	Barium	0.092	mg/L	0.010	09/16/20 18:16	
EPA 6020B	Lead	0.0018J	mg/L	0.0050	09/16/20 18:16	
SM 2540C-2011	Total Dissolved Solids	89.0	mg/L	25.0	08/31/20 18:33	
EPA 300.0 Rev 2.1 1993	Chloride	26.7	mg/L	1.0	08/29/20 18:31	
EPA 300.0 Rev 2.1 1993	Sulfate	28.0	mg/L	1.0	08/29/20 18:31	
92493014003	MCM-04					
	pH	4.95	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	20.6	mg/L	0.10	09/02/20 22:57	
EPA 6020B	Arsenic	0.0059	mg/L	0.0050	09/16/20 18:20	
EPA 6020B	Barium	0.086	mg/L	0.010	09/16/20 18:20	
EPA 6020B	Cobalt	0.015	mg/L	0.0050	09/16/20 18:20	
SM 2540C-2011	Total Dissolved Solids	289	mg/L	25.0	08/31/20 18:33	
EPA 300.0 Rev 2.1 1993	Chloride	42.0	mg/L	1.0	08/29/20 18:45	
EPA 300.0 Rev 2.1 1993	Sulfate	112	mg/L	3.0	08/30/20 01:05	
92493014004	MCM-05					
	pH	6.50	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	21.5	mg/L	0.10	09/02/20 23:00	
EPA 6020B	Barium	0.0065J	mg/L	0.010	09/16/20 18:35	
EPA 6020B	Boron	0.43J	mg/L	0.50	09/16/20 18:35	
EPA 6020B	Lithium	0.018J	mg/L	0.030	09/16/20 18:35	
SM 2540C-2011	Total Dissolved Solids	1260	mg/L	125	08/31/20 18:33	
EPA 300.0 Rev 2.1 1993	Chloride	558	mg/L	12.0	08/30/20 01:19	
EPA 300.0 Rev 2.1 1993	Fluoride	0.39	mg/L	0.10	08/29/20 18:58	
EPA 300.0 Rev 2.1 1993	Sulfate	61.9	mg/L	1.0	08/29/20 18:58	
92493014005	MCM-07					
	pH	6.32	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	259	mg/L	0.50	09/03/20 19:13	
EPA 6020B	Arsenic	0.019	mg/L	0.0050	09/16/20 18:51	
EPA 6020B	Barium	0.22	mg/L	0.010	09/16/20 18:51	
EPA 6020B	Boron	1.6	mg/L	0.50	09/16/20 18:51	
EPA 6020B	Lead	0.014	mg/L	0.0050	09/16/20 18:51	
EPA 6020B	Lithium	0.045J	mg/L	0.030	09/16/20 18:51	
SM 2540C-2011	Total Dissolved Solids	19200	mg/L	2500	09/01/20 13:15	
EPA 300.0 Rev 2.1 1993	Chloride	7330	mg/L	100	08/30/20 01:33	
EPA 300.0 Rev 2.1 1993	Sulfate	895	mg/L	100	08/30/20 01:33	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92493014006	MCM-11					
	pH	4.96	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	3.2	mg/L	0.10	09/02/20 23:07	
EPA 6020B	Arsenic	0.0044J	mg/L	0.0050	09/16/20 18:59	
EPA 6020B	Barium	0.041	mg/L	0.010	09/16/20 18:59	
SM 2540C-2011	Total Dissolved Solids	86.0	mg/L	25.0	09/01/20 13:15	
EPA 300.0 Rev 2.1 1993	Chloride	13.3	mg/L	1.0	08/29/20 19:52	
EPA 300.0 Rev 2.1 1993	Fluoride	0.097J	mg/L	0.10	08/29/20 19:52	M1
EPA 300.0 Rev 2.1 1993	Sulfate	21.8	mg/L	1.0	08/29/20 19:52	
92493014007	MCM-12					
	pH	6.32	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	7.5	mg/L	0.10	09/02/20 23:10	
EPA 6020B	Barium	0.10	mg/L	0.010	09/16/20 19:03	
EPA 6020B	Beryllium	0.0010J	mg/L	0.0030	09/16/20 19:03	
EPA 6020B	Boron	1.4	mg/L	0.50	09/16/20 19:03	
EPA 6020B	Lithium	0.013J	mg/L	0.030	09/16/20 19:03	
SM 2540C-2011	Total Dissolved Solids	1700	mg/L	250	09/01/20 13:15	
EPA 300.0 Rev 2.1 1993	Chloride	529	mg/L	12.0	08/30/20 01:48	
EPA 300.0 Rev 2.1 1993	Fluoride	1.2	mg/L	0.10	08/29/20 21:00	
92493014008	MCM-14					
	pH	6.62	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	284	mg/L	0.50	09/03/20 19:17	
EPA 6020B	Barium	0.12	mg/L	0.010	09/16/20 19:10	
EPA 6020B	Boron	1.2	mg/L	0.50	09/16/20 19:10	
EPA 6020B	Lithium	0.054	mg/L	0.030	09/16/20 19:10	
SM 2540C-2011	Total Dissolved Solids	14700	mg/L	2500	09/01/20 13:16	
EPA 300.0 Rev 2.1 1993	Sulfate	730	mg/L	100	08/30/20 02:29	
92493014009	MCM-15					
	pH	5.33	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	5.8	mg/L	0.10	09/02/20 23:17	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	09/16/20 19:18	
EPA 6020B	Barium	0.039	mg/L	0.010	09/16/20 19:18	
SM 2540C-2011	Total Dissolved Solids	101	mg/L	25.0	09/01/20 13:17	
EPA 300.0 Rev 2.1 1993	Chloride	14.4	mg/L	1.0	08/29/20 21:27	
EPA 300.0 Rev 2.1 1993	Sulfate	14.0	mg/L	1.0	08/29/20 21:27	
92493014010	MCM-16					
	pH	4.92	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	5.6	mg/L	0.10	09/02/20 23:20	
EPA 6020B	Barium	0.12	mg/L	0.010	09/16/20 19:22	
SM 2540C-2011	Total Dissolved Solids	95.0	mg/L	25.0	09/01/20 13:18	
EPA 300.0 Rev 2.1 1993	Chloride	22.2	mg/L	1.0	08/29/20 21:40	
EPA 300.0 Rev 2.1 1993	Sulfate	27.8	mg/L	1.0	08/29/20 21:40	
92493014011	MCM-17					
	pH	6.65	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	146	mg/L	0.50	09/03/20 19:20	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92493014011	MCM-17					
EPA 6020B	Barium	0.15	mg/L	0.010	09/16/20 19:26	
EPA 6020B	Boron	1.8	mg/L	0.50	09/16/20 19:26	
EPA 6020B	Lithium	0.027J	mg/L	0.030	09/16/20 19:26	
SM 2540C-2011	Total Dissolved Solids	8400	mg/L	1250	09/01/20 13:18	
EPA 300.0 Rev 2.1 1993	Sulfate	341	mg/L	100	08/30/20 02:43	
92493014012	MCM-18					
	pH	4.27	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	25.7	mg/L	0.10	09/02/20 23:40	
EPA 6020B	Arsenic	0.0019J	mg/L	0.0050	09/16/20 19:41	
EPA 6020B	Barium	0.095	mg/L	0.010	09/16/20 19:41	
EPA 6020B	Beryllium	0.0042	mg/L	0.0030	09/16/20 19:41	
EPA 6020B	Boron	0.25J	mg/L	0.50	09/16/20 19:41	
EPA 6020B	Lead	0.0035J	mg/L	0.0050	09/16/20 19:41	
EPA 6020B	Selenium	0.0014J	mg/L	0.010	09/16/20 19:41	
SM 2540C-2011	Total Dissolved Solids	2980	mg/L	500	09/01/20 13:18	
EPA 300.0 Rev 2.1 1993	Fluoride	0.096J	mg/L	0.10	08/29/20 22:07	
EPA 300.0 Rev 2.1 1993	Sulfate	170	mg/L	100	08/30/20 02:57	
92493014013	MCM-19					
	pH	5.25	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	121	mg/L	0.50	09/03/20 19:23	
EPA 6020B	Arsenic	0.012	mg/L	0.0050	09/16/20 19:57	
EPA 6020B	Barium	0.11	mg/L	0.010	09/16/20 19:57	
EPA 6020B	Beryllium	0.011	mg/L	0.0030	09/16/20 19:57	
EPA 6020B	Boron	0.91	mg/L	0.50	09/16/20 19:57	
EPA 6020B	Lithium	0.018J	mg/L	0.030	09/16/20 19:57	
EPA 6020B	Selenium	0.0060J	mg/L	0.010	09/16/20 19:57	
SM 2540C-2011	Total Dissolved Solids	13300	mg/L	2500	09/01/20 13:18	
EPA 300.0 Rev 2.1 1993	Chloride	5390	mg/L	100	08/31/20 00:04	
EPA 300.0 Rev 2.1 1993	Sulfate	854	mg/L	100	08/31/20 00:04	
92493014014	MCM-20					
	pH	3.78	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	110	mg/L	0.50	09/03/20 19:27	
EPA 6020B	Arsenic	0.018	mg/L	0.0050	09/16/20 20:04	
EPA 6020B	Barium	0.12	mg/L	0.010	09/16/20 20:04	
EPA 6020B	Beryllium	0.018	mg/L	0.0030	09/16/20 20:04	
EPA 6020B	Boron	1.0	mg/L	0.50	09/16/20 20:04	
EPA 6020B	Cobalt	0.034	mg/L	0.0050	09/16/20 20:04	
EPA 6020B	Lithium	0.026J	mg/L	0.030	09/16/20 20:04	
EPA 6020B	Selenium	0.0052J	mg/L	0.010	09/16/20 20:04	
SM 2540C-2011	Total Dissolved Solids	15100	mg/L	2500	09/01/20 13:19	
EPA 300.0 Rev 2.1 1993	Chloride	5470	mg/L	100	08/30/20 03:11	
EPA 300.0 Rev 2.1 1993	Fluoride	0.058J	mg/L	0.10	08/29/20 22:34	
EPA 300.0 Rev 2.1 1993	Sulfate	639	mg/L	100	08/30/20 03:11	
92493014015	FBL082620					
EPA 6020B	Barium	0.00044J	mg/L	0.010	09/17/20 00:03	

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SUMMARY OF DETECTION

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92493014016	EQBL082620					
EPA 6020B	Barium	0.00047J	mg/L	0.010	09/17/20 00:07	
92493014017	DUP-1					
EPA 6010D	Calcium	21.3	mg/L	0.10	09/02/20 23:56	
EPA 6020B	Arsenic	0.0056	mg/L	0.0050	09/16/20 20:20	
EPA 6020B	Barium	0.082	mg/L	0.010	09/16/20 20:20	
EPA 6020B	Cobalt	0.015	mg/L	0.0050	09/16/20 20:20	
SM 2540C-2011	Total Dissolved Solids	300	mg/L	25.0	09/01/20 13:19	
EPA 300.0 Rev 2.1 1993	Chloride	43.9	mg/L	1.0	08/30/20 00:22	
EPA 300.0 Rev 2.1 1993	Sulfate	113	mg/L	2.0	08/30/20 03:27	
92493014018	DUP-2					
EPA 6010D	Calcium	112	mg/L	0.50	09/03/20 19:30	
EPA 6020B	Arsenic	0.018	mg/L	0.0050	09/16/20 20:27	
EPA 6020B	Barium	0.12	mg/L	0.010	09/16/20 20:27	
EPA 6020B	Beryllium	0.019	mg/L	0.0030	09/16/20 20:27	
EPA 6020B	Boron	1.0	mg/L	0.50	09/16/20 20:27	
EPA 6020B	Cobalt	0.035	mg/L	0.0050	09/16/20 20:27	
EPA 6020B	Lithium	0.025J	mg/L	0.030	09/16/20 20:27	
EPA 6020B	Selenium	0.0054J	mg/L	0.010	09/16/20 20:27	
SM 2540C-2011	Total Dissolved Solids	12600	mg/L	1250	09/01/20 16:19	
EPA 300.0 Rev 2.1 1993	Chloride	5570	mg/L	100	08/30/20 03:41	
EPA 300.0 Rev 2.1 1993	Fluoride	0.079J	mg/L	0.10	08/30/20 00:36	
EPA 300.0 Rev 2.1 1993	Sulfate	670	mg/L	100	08/30/20 03:41	
92493014019	MCM-06					
	pH	6.88	Std. Units		09/10/20 09:31	
EPA 6010D	Calcium	254	mg/L	0.50	09/03/20 19:34	
EPA 6020B	Arsenic	0.46	mg/L	0.12	09/10/20 13:26	
EPA 6020B	Barium	0.15J	mg/L	0.25	09/10/20 13:26	
EPA 6020B	Boron	1.6	mg/L	1.2	09/09/20 14:13	
EPA 6020B	Lithium	0.096J	mg/L	0.75	09/10/20 13:26	
SM 2540C-2011	Total Dissolved Solids	14900	mg/L	2500	09/01/20 16:19	
EPA 300.0 Rev 2.1 1993	Chloride	6510	mg/L	100	08/30/20 03:55	
EPA 300.0 Rev 2.1 1993	Sulfate	514	mg/L	100	08/30/20 03:55	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-01		Lab ID: 92493014001		Collected: 08/26/20 13:38		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.79	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	10.5	mg/L	0.10	0.094	1	09/01/20 01:35	09/01/20 23:02	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 17:53	7440-36-0	
Arsenic	0.0079	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 17:53	7440-38-2	
Barium	0.056	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 17:53	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 17:53	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 17:53	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 17:53	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 17:53	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 17:53	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 17:53	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 17:53	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 17:53	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 17:53	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 17:53	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 14:49	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	82.0	mg/L	25.0	25.0	1		08/31/20 18:33		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	13.2	mg/L	1.0	0.60	1		08/29/20 18:18	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 18:18	16984-48-8	
Sulfate	32.9	mg/L	1.0	0.50	1		08/29/20 18:18	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

Sample: MCM-02		Lab ID: 92493014002		Collected: 08/26/20 14:25		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.03	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	4.6	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 22:37	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 18:16	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 18:16	7440-38-2	
Barium	0.092	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 18:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 18:16	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 18:16	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 18:16	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 18:16	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 18:16	7440-48-4	
Lead	0.0018J	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 18:16	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 18:16	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 18:16	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 18:16	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 18:16	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 14:56	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	89.0	mg/L	25.0	25.0	1		08/31/20 18:33		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	26.7	mg/L	1.0	0.60	1		08/29/20 18:31	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 18:31	16984-48-8	
Sulfate	28.0	mg/L	1.0	0.50	1		08/29/20 18:31	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-04		Lab ID: 92493014003		Collected: 08/26/20 11:58		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.95	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	20.6	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 22:57	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 18:20	7440-36-0	
Arsenic	0.0059	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 18:20	7440-38-2	
Barium	0.086	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 18:20	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 18:20	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 18:20	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 18:20	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 18:20	7440-47-3	
Cobalt	0.015	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 18:20	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 18:20	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 18:20	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 18:20	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 18:20	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 18:20	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 14:59	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	289	mg/L	25.0	25.0	1		08/31/20 18:33		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	42.0	mg/L	1.0	0.60	1		08/29/20 18:45	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 18:45	16984-48-8	
Sulfate	112	mg/L	3.0	1.5	3		08/30/20 01:05	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-05		Lab ID: 92493014004		Collected: 08/26/20 12:47		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.50	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	21.5	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 23:00	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 18:35	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 18:35	7440-38-2	
Barium	0.0065J	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 18:35	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 18:35	7440-41-7	
Boron	0.43J	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 18:35	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 18:35	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 18:35	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 18:35	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 18:35	7439-92-1	
Lithium	0.018J	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 18:35	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 18:35	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 18:35	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 18:35	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:01	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	1260	mg/L	125	125	1		08/31/20 18:33		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	558	mg/L	12.0	7.2	12		08/30/20 01:19	16887-00-6	
Fluoride	0.39	mg/L	0.10	0.050	1		08/29/20 18:58	16984-48-8	
Sulfate	61.9	mg/L	1.0	0.50	1		08/29/20 18:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-07		Lab ID: 92493014005		Collected: 08/26/20 11:21		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.32	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	259	mg/L	0.50	0.47	5	09/02/20 01:33	09/03/20 19:13	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 18:51	7440-36-0	
Arsenic	0.019	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 18:51	7440-38-2	
Barium	0.22	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 18:51	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 18:51	7440-41-7	
Boron	1.6	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 18:51	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 18:51	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 18:51	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 18:51	7440-48-4	
Lead	0.014	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 18:51	7439-92-1	
Lithium	0.045J	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 18:51	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 18:51	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 18:51	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 18:51	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:03	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	19200	mg/L	2500	2500	1		09/01/20 13:15		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	7330	mg/L	100	60.0	100		08/30/20 01:33	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 19:12	16984-48-8	
Sulfate	895	mg/L	100	50.0	100		08/30/20 01:33	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-11		Lab ID: 92493014006		Collected: 08/26/20 10:26		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.96	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	3.2	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 23:07	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 18:59	7440-36-0	
Arsenic	0.0044J	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 18:59	7440-38-2	
Barium	0.041	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 18:59	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 18:59	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 18:59	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 18:59	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 18:59	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 18:59	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 18:59	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 18:59	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 18:59	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 18:59	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 18:59	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:06	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	86.0	mg/L	25.0	25.0	1		09/01/20 13:15		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	13.3	mg/L	1.0	0.60	1		08/29/20 19:52	16887-00-6	
Fluoride	0.097J	mg/L	0.10	0.050	1		08/29/20 19:52	16984-48-8	M1
Sulfate	21.8	mg/L	1.0	0.50	1		08/29/20 19:52	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

Sample: MCM-12		Lab ID: 92493014007		Collected: 08/26/20 10:29		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.32	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	7.5	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 23:10	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 19:03	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 19:03	7440-38-2	
Barium	0.10	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 19:03	7440-39-3	
Beryllium	0.0010J	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 19:03	7440-41-7	
Boron	1.4	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 19:03	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 19:03	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 19:03	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 19:03	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 19:03	7439-92-1	
Lithium	0.013J	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 19:03	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 19:03	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 19:03	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 19:03	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:13	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	1700	mg/L	250	250	1		09/01/20 13:15		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	529	mg/L	12.0	7.2	12		08/30/20 01:48	16887-00-6	
Fluoride	1.2	mg/L	0.10	0.050	1		08/29/20 21:00	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		08/29/20 21:00	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-14		Lab ID: 92493014008		Collected: 08/26/20 11:48		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.62	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	284	mg/L	0.50	0.47	5	09/02/20 01:33	09/03/20 19:17	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 19:10	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 19:10	7440-38-2	
Barium	0.12	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 19:10	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 19:10	7440-41-7	
Boron	1.2	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 19:10	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 19:10	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 19:10	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 19:10	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 19:10	7439-92-1	
Lithium	0.054	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 19:10	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 19:10	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 19:10	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 19:10	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:15	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	14700	mg/L	2500	2500	1		09/01/20 13:16		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	ND	mg/L	1.0	0.60	1		08/29/20 21:13	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 21:13	16984-48-8	
Sulfate	730	mg/L	100	50.0	100		08/30/20 02:29	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

Sample: MCM-15		Lab ID: 92493014009		Collected: 08/26/20 14:49		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.33	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	5.8	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 23:17	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 19:18	7440-36-0	
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 19:18	7440-38-2	
Barium	0.039	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 19:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 19:18	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 19:18	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 19:18	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 19:18	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 19:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 19:18	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 19:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 19:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 19:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 19:18	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:18	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	101	mg/L	25.0	25.0	1		09/01/20 13:17		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	14.4	mg/L	1.0	0.60	1		08/29/20 21:27	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 21:27	16984-48-8	
Sulfate	14.0	mg/L	1.0	0.50	1		08/29/20 21:27	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-16 **Lab ID: 92493014010** Collected: 08/26/20 16:52 Received: 08/28/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.92	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	5.6	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 23:20	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 19:22	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 19:22	7440-38-2	
Barium	0.12	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 19:22	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 19:22	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 19:22	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 19:22	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 19:22	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 19:22	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 19:22	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 19:22	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 19:22	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 19:22	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 19:22	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:20	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	95.0	mg/L	25.0	25.0	1		09/01/20 13:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	22.2	mg/L	1.0	0.60	1		08/29/20 21:40	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 21:40	16984-48-8	
Sulfate	27.8	mg/L	1.0	0.50	1		08/29/20 21:40	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-17		Lab ID: 92493014011		Collected: 08/26/20 15:56		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.65	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	146	mg/L	0.50	0.47	5	09/02/20 01:33	09/03/20 19:20	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 19:26	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 19:26	7440-38-2	
Barium	0.15	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 19:26	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 19:26	7440-41-7	
Boron	1.8	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 19:26	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 19:26	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 19:26	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 19:26	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 19:26	7439-92-1	
Lithium	0.027J	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 19:26	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 19:26	7439-98-7	
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 19:26	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 19:26	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:22	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	8400	mg/L	1250	1250	1		09/01/20 13:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	ND	mg/L	1.0	0.60	1		08/29/20 21:54	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 21:54	16984-48-8	
Sulfate	341	mg/L	100	50.0	100		08/30/20 02:43	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-18		Lab ID: 92493014012		Collected: 08/26/20 11:58		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.27	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	25.7	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 23:40	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 19:41	7440-36-0	
Arsenic	0.0019J	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 19:41	7440-38-2	
Barium	0.095	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 19:41	7440-39-3	
Beryllium	0.0042	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 19:41	7440-41-7	
Boron	0.25J	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 19:41	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 19:41	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 19:41	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 19:41	7440-48-4	
Lead	0.0035J	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 19:41	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 19:41	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 19:41	7439-98-7	
Selenium	0.0014J	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 19:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 19:41	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:25	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	2980	mg/L	500	500	1		09/01/20 13:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	ND	mg/L	1.0	0.60	1		08/29/20 22:07	16887-00-6	
Fluoride	0.096J	mg/L	0.10	0.050	1		08/29/20 22:07	16984-48-8	
Sulfate	170	mg/L	100	50.0	100		08/30/20 02:57	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-19		Lab ID: 92493014013		Collected: 08/26/20 14:30		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.25	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	121	mg/L	0.50	0.47	5	09/02/20 01:33	09/03/20 19:23	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 19:57	7440-36-0	
Arsenic	0.012	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 19:57	7440-38-2	
Barium	0.11	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 19:57	7440-39-3	
Beryllium	0.011	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 19:57	7440-41-7	
Boron	0.91	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 19:57	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 19:57	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 19:57	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 19:57	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 19:57	7439-92-1	
Lithium	0.018J	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 19:57	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 19:57	7439-98-7	
Selenium	0.0060J	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 19:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 19:57	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:27	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	13300	mg/L	2500	2500	1		09/01/20 13:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	5390	mg/L	100	60.0	100		08/31/20 00:04	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 22:21	16984-48-8	
Sulfate	854	mg/L	100	50.0	100		08/31/20 00:04	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

Sample: MCM-20		Lab ID: 92493014014		Collected: 08/26/20 15:48		Received: 08/28/20 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	3.78	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	110	mg/L	0.50	0.47	5	09/02/20 01:33	09/03/20 19:27	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 20:04	7440-36-0	
Arsenic	0.018	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 20:04	7440-38-2	
Barium	0.12	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 20:04	7440-39-3	
Beryllium	0.018	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 20:04	7440-41-7	
Boron	1.0	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 20:04	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 20:04	7440-43-9	
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 20:04	7440-47-3	
Cobalt	0.034	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 20:04	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 20:04	7439-92-1	
Lithium	0.026J	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 20:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 20:04	7439-98-7	
Selenium	0.0052J	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 20:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 20:04	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:30	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	15100	mg/L	2500	2500	1		09/01/20 13:19		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	5470	mg/L	100	60.0	100		08/30/20 03:11	16887-00-6	
Fluoride	0.058J	mg/L	0.10	0.050	1		08/29/20 22:34	16984-48-8	
Sulfate	639	mg/L	100	50.0	100		08/30/20 03:11	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: FBL082620 **Lab ID: 92493014015** Collected: 08/26/20 16:49 Received: 08/28/20 11:35 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	ND	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 23:50	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.0030	0.00012	1	09/16/20 01:12	09/17/20 00:03	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.000087	1	09/16/20 01:12	09/17/20 00:03	7440-38-2	
Barium	0.00044J	mg/L	0.010	0.00021	1	09/16/20 01:12	09/17/20 00:03	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	09/16/20 01:12	09/17/20 00:03	7440-41-7	
Boron	ND	mg/L	0.025	0.0062	1	09/16/20 01:12	09/17/20 00:03	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.000060	1	09/16/20 01:12	09/17/20 00:03	7440-43-9	
Chromium	ND	mg/L	0.010	0.00050	1	09/16/20 01:12	09/17/20 00:03	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.000050	1	09/16/20 01:12	09/17/20 00:03	7440-48-4	
Lead	ND	mg/L	0.0050	0.000077	1	09/16/20 01:12	09/17/20 00:03	7439-92-1	
Lithium	ND	mg/L	0.030	0.00039	1	09/16/20 01:12	09/17/20 00:03	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00011	1	09/16/20 01:12	09/17/20 00:03	7439-98-7	
Selenium	ND	mg/L	0.010	0.000061	1	09/16/20 01:12	09/17/20 00:03	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000050	1	09/16/20 01:12	09/17/20 00:03	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:32	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		09/01/20 13:19		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	ND	mg/L	1.0	0.60	1		08/30/20 23:50	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/30/20 23:50	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		08/30/20 23:50	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: EQBL082620		Lab ID: 92493014016		Collected: 08/26/20 16:55	Received: 08/28/20 11:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Calcium	ND	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 23:53	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	mg/L	0.0030	0.00012	1	09/16/20 01:12	09/17/20 00:07	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.000087	1	09/16/20 01:12	09/17/20 00:07	7440-38-2		
Barium	0.00047J	mg/L	0.010	0.00021	1	09/16/20 01:12	09/17/20 00:07	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	09/16/20 01:12	09/17/20 00:07	7440-41-7		
Boron	ND	mg/L	0.025	0.0062	1	09/16/20 01:12	09/17/20 00:07	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.000060	1	09/16/20 01:12	09/17/20 00:07	7440-43-9		
Chromium	ND	mg/L	0.010	0.00050	1	09/16/20 01:12	09/17/20 00:07	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.000050	1	09/16/20 01:12	09/17/20 00:07	7440-48-4		
Lead	ND	mg/L	0.0050	0.000077	1	09/16/20 01:12	09/17/20 00:07	7439-92-1		
Lithium	ND	mg/L	0.030	0.00039	1	09/16/20 01:12	09/17/20 00:07	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00011	1	09/16/20 01:12	09/17/20 00:07	7439-98-7		
Selenium	ND	mg/L	0.010	0.000061	1	09/16/20 01:12	09/17/20 00:07	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000050	1	09/16/20 01:12	09/17/20 00:07	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 15:34	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville								
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		09/01/20 13:19			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		08/29/20 23:42	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 23:42	16984-48-8	M1, R1	
Sulfate	ND	mg/L	1.0	0.50	1		08/29/20 23:42	14808-79-8		

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: DUP-1		Lab ID: 92493014017		Collected: 08/26/20 00:00	Received: 08/28/20 11:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Calcium	21.3	mg/L	0.10	0.094	1	09/02/20 01:33	09/02/20 23:56	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 20:20	7440-36-0		
Arsenic	0.0056	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 20:20	7440-38-2		
Barium	0.082	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 20:20	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 20:20	7440-41-7		
Boron	ND	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 20:20	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 20:20	7440-43-9		
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 20:20	7440-47-3		
Cobalt	0.015	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 20:20	7440-48-4		
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 20:20	7439-92-1		
Lithium	ND	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 20:20	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 20:20	7439-98-7		
Selenium	ND	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 20:20	7782-49-2		
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 20:20	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 13:45	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville								
Total Dissolved Solids	300	mg/L	25.0	25.0	1		09/01/20 13:19			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	43.9	mg/L	1.0	0.60	1		08/30/20 00:22	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		08/30/20 00:22	16984-48-8		
Sulfate	113	mg/L	2.0	1.0	2		08/30/20 03:27	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: DUP-2		Lab ID: 92493014018		Collected: 08/26/20 00:00	Received: 08/28/20 11:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Calcium	112	mg/L	0.50	0.47	5	09/02/20 01:33	09/03/20 19:30	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Antimony	ND	mg/L	0.0030	0.0025	20	09/16/20 01:12	09/16/20 20:27	7440-36-0		
Arsenic	0.018	mg/L	0.0050	0.0017	20	09/16/20 01:12	09/16/20 20:27	7440-38-2		
Barium	0.12	mg/L	0.010	0.0043	20	09/16/20 01:12	09/16/20 20:27	7440-39-3		
Beryllium	0.019	mg/L	0.0030	0.0010	20	09/16/20 01:12	09/16/20 20:27	7440-41-7		
Boron	1.0	mg/L	0.50	0.12	20	09/16/20 01:12	09/16/20 20:27	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.0012	20	09/16/20 01:12	09/16/20 20:27	7440-43-9		
Chromium	ND	mg/L	0.010	0.0099	20	09/16/20 01:12	09/16/20 20:27	7440-47-3		
Cobalt	0.035	mg/L	0.0050	0.0010	20	09/16/20 01:12	09/16/20 20:27	7440-48-4		
Lead	ND	mg/L	0.0050	0.0015	20	09/16/20 01:12	09/16/20 20:27	7439-92-1		
Lithium	0.025J	mg/L	0.030	0.0078	20	09/16/20 01:12	09/16/20 20:27	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0022	20	09/16/20 01:12	09/16/20 20:27	7439-98-7		
Selenium	0.0054J	mg/L	0.010	0.0012	20	09/16/20 01:12	09/16/20 20:27	7782-49-2		
Thallium	ND	mg/L	0.0010	0.0010	20	09/16/20 01:12	09/16/20 20:27	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Asheville								
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 13:47	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville								
Total Dissolved Solids	12600	mg/L	1250	1250	1		09/01/20 16:19			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	5570	mg/L	100	60.0	100		08/30/20 03:41	16887-00-6		
Fluoride	0.079J	mg/L	0.10	0.050	1		08/30/20 00:36	16984-48-8		
Sulfate	670	mg/L	100	50.0	100		08/30/20 03:41	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Sample: MCM-06 **Lab ID: 92493014019** Collected: 08/26/20 16:08 Received: 08/28/20 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.88	Std. Units			1		09/10/20 09:31		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	254	mg/L	0.50	0.47	5	09/02/20 01:33	09/03/20 19:34	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Antimony	ND	mg/L	0.075	0.0031	25	09/02/20 01:04	09/10/20 13:26	7440-36-0	
Arsenic	0.46	mg/L	0.12	0.0022	25	09/02/20 01:04	09/10/20 13:26	7440-38-2	
Barium	0.15J	mg/L	0.25	0.0054	25	09/02/20 01:04	09/10/20 13:26	7440-39-3	
Beryllium	ND	mg/L	0.075	0.0012	25	09/02/20 01:04	09/10/20 13:26	7440-41-7	
Boron	1.6	mg/L	1.2	0.31	50	09/02/20 01:04	09/09/20 14:13	7440-42-8	
Cadmium	ND	mg/L	0.062	0.0015	25	09/02/20 01:04	09/10/20 13:26	7440-43-9	
Chromium	ND	mg/L	0.25	0.012	25	09/02/20 01:04	09/10/20 13:26	7440-47-3	
Cobalt	ND	mg/L	0.12	0.0012	25	09/02/20 01:04	09/10/20 13:26	7440-48-4	
Lead	ND	mg/L	0.12	0.0019	25	09/02/20 01:04	09/10/20 13:26	7439-92-1	
Lithium	0.096J	mg/L	0.75	0.0098	25	09/02/20 01:04	09/10/20 13:26	7439-93-2	
Molybdenum	ND	mg/L	0.25	0.0028	25	09/02/20 01:04	09/10/20 13:26	7439-98-7	
Selenium	ND	mg/L	0.25	0.0015	25	09/02/20 01:04	09/10/20 13:26	7782-49-2	
Thallium	ND	mg/L	0.025	0.0012	25	09/02/20 01:04	09/10/20 13:26	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Asheville									
Mercury	ND	ug/L	0.50	0.12	1	09/01/20 20:08	09/02/20 13:50	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	14900	mg/L	2500	2500	1		09/01/20 16:19		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	6510	mg/L	100	60.0	100		08/30/20 03:55	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		08/30/20 00:49	16984-48-8	
Sulfate	514	mg/L	100	50.0	100		08/30/20 03:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

QC Batch:	563861	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Asheville
Associated Lab Samples:	92493014001, 92493014002, 92493014003, 92493014004, 92493014005, 92493014006, 92493014007, 92493014008, 92493014009, 92493014010, 92493014011, 92493014012, 92493014013, 92493014014, 92493014015, 92493014016, 92493014017, 92493014018, 92493014019		

METHOD BLANK:	2989211	Matrix:	Water
Associated Lab Samples:	92493014001, 92493014002, 92493014003, 92493014004, 92493014005, 92493014006, 92493014007, 92493014008, 92493014009, 92493014010, 92493014011, 92493014012, 92493014013, 92493014014, 92493014015, 92493014016, 92493014017, 92493014018, 92493014019		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.50	0.12	09/02/20 14:45	

LABORATORY CONTROL SAMPLE:	2989212					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.7	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	2989213			2989214								
Parameter	Units	92493014001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.7	2.6	105	104	75-125	1	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

QC Batch: 563604 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92493014001

METHOD BLANK: 2988233 Matrix: Water
Associated Lab Samples: 92493014001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	09/01/20 21:24	

LABORATORY CONTROL SAMPLE: 2988234

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	4.8	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988235 2988236

Parameter	Units	2988235		2988236		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	2540 ug/L	5	5	7.5	7.5	99	98	75-125	1	20

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

QC Batch:	563907	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92493014002, 92493014003, 92493014004, 92493014005, 92493014006, 92493014007, 92493014008, 92493014009, 92493014010, 92493014011, 92493014012, 92493014013, 92493014014, 92493014015, 92493014016, 92493014017, 92493014018, 92493014019

METHOD BLANK: 2989431 Matrix: Water
Associated Lab Samples: 92493014002, 92493014003, 92493014004, 92493014005, 92493014006, 92493014007, 92493014008, 92493014009, 92493014010, 92493014011, 92493014012, 92493014013, 92493014014, 92493014015, 92493014016, 92493014017, 92493014018, 92493014019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	09/02/20 22:31	

LABORATORY CONTROL SAMPLE: 2989432

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2989433 2989434

Parameter	Units	92493014002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	4.6	5	5	9.9	9.7	106	102	75-125	2	20	

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

QC Batch: 563910

Analysis Method: EPA 6020B

QC Batch Method: EPA 3010A

Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92493014019

METHOD BLANK: 2989443

Matrix: Water

Associated Lab Samples: 92493014019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00012	09/07/20 21:42	
Arsenic	mg/L	ND	0.0050	0.000087	09/07/20 21:42	
Barium	mg/L	ND	0.010	0.00021	09/07/20 21:42	
Beryllium	mg/L	ND	0.0030	0.000050	09/07/20 21:42	
Boron	mg/L	ND	0.025	0.0062	09/07/20 21:42	
Cadmium	mg/L	ND	0.0025	0.000060	09/07/20 21:42	
Chromium	mg/L	ND	0.010	0.00050	09/07/20 21:42	
Cobalt	mg/L	ND	0.0050	0.000050	09/07/20 21:42	
Lead	mg/L	ND	0.0050	0.000077	09/07/20 21:42	
Lithium	mg/L	ND	0.030	0.00039	09/07/20 21:42	
Molybdenum	mg/L	ND	0.010	0.00011	09/07/20 21:42	
Selenium	mg/L	ND	0.010	0.000061	09/07/20 21:42	
Thallium	mg/L	ND	0.0010	0.000050	09/07/20 21:42	

LABORATORY CONTROL SAMPLE: 2989444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.05	0.052	104	80-120	
Arsenic	mg/L	0.01	0.010	103	80-120	
Barium	mg/L	0.05	0.051	102	80-120	
Beryllium	mg/L	0.01	0.0099	99	80-120	
Boron	mg/L	0.05	0.050	100	80-120	
Cadmium	mg/L	0.01	0.010	103	80-120	
Chromium	mg/L	0.05	0.052	103	80-120	
Cobalt	mg/L	0.01	0.010	103	80-120	
Lead	mg/L	0.05	0.051	102	80-120	
Lithium	mg/L	0.05	0.050	100	80-120	
Molybdenum	mg/L	0.05	0.052	103	80-120	
Selenium	mg/L	0.05	0.051	102	80-120	
Thallium	mg/L	0.01	0.010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2989445 2989446

Parameter	Units	92493089001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.05	0.05	0.052	0.053	104	105	75-125	1	20	
Arsenic	mg/L	0.19 ug/L	0.01	0.01	0.010	0.010	99	101	75-125	2	20	

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Parameter	Units	2989445		2989446		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92493089001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	216 ug/L	0.05	0.05	0.27	0.27	109	113	75-125	1	20	E	
Beryllium	mg/L	ND	0.01	0.01	0.0098	0.0098	98	97	75-125	1	20		
Boron	mg/L	32.5 ug/L	0.05	0.05	0.079	0.084	93	104	75-125	7	20	E	
Cadmium	mg/L	ND	0.01	0.01	0.010	0.010	100	101	75-125	1	20		
Chromium	mg/L	0.60 ug/L	0.05	0.05	0.052	0.052	102	103	75-125	1	20		
Cobalt	mg/L	10.5 ug/L	0.01	0.01	0.022	0.023	117	123	75-125	3	20		
Lead	mg/L	0.17 ug/L	0.05	0.05	0.050	0.051	99	101	75-125	2	20		
Lithium	mg/L	0.50J ug/L	0.05	0.05	0.050	0.049	99	97	75-125	2	20		
Molybdenum	mg/L	ND	0.05	0.05	0.050	0.051	101	102	75-125	1	20		
Selenium	mg/L	0.091J ug/L	0.05	0.05	0.050	0.050	100	100	75-125	0	20		
Thallium	mg/L	ND	0.01	0.01	0.010	0.010	100	102	75-125	2	20		

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

QC Batch:	566587	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3010A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92493014001, 92493014002, 92493014003, 92493014004, 92493014005, 92493014006, 92493014007, 92493014008, 92493014009, 92493014010, 92493014011, 92493014012, 92493014013, 92493014014, 92493014015, 92493014016, 92493014017, 92493014018

METHOD BLANK: 3002724 Matrix: Water

Associated Lab Samples: 92493014001, 92493014002, 92493014003, 92493014004, 92493014005, 92493014006, 92493014007, 92493014008, 92493014009, 92493014010, 92493014011, 92493014012, 92493014013, 92493014014, 92493014015, 92493014016, 92493014017, 92493014018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00012	09/16/20 17:45	
Arsenic	mg/L	ND	0.0050	0.000087	09/16/20 17:45	
Barium	mg/L	ND	0.010	0.00021	09/16/20 17:45	
Beryllium	mg/L	ND	0.0030	0.000050	09/16/20 17:45	
Boron	mg/L	ND	0.025	0.0062	09/16/20 17:45	
Cadmium	mg/L	ND	0.0025	0.000060	09/16/20 17:45	
Chromium	mg/L	ND	0.010	0.00050	09/16/20 17:45	
Cobalt	mg/L	ND	0.0050	0.000050	09/16/20 17:45	
Lead	mg/L	ND	0.0050	0.000077	09/16/20 17:45	
Lithium	mg/L	ND	0.030	0.00039	09/16/20 17:45	
Molybdenum	mg/L	ND	0.010	0.00011	09/16/20 17:45	
Selenium	mg/L	ND	0.010	0.000061	09/16/20 17:45	
Thallium	mg/L	ND	0.0010	0.000050	09/16/20 17:45	

LABORATORY CONTROL SAMPLE: 3002725

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.05	0.052	104	80-120	
Arsenic	mg/L	0.01	0.010	102	80-120	
Barium	mg/L	0.05	0.052	105	80-120	
Beryllium	mg/L	0.01	0.010	101	80-120	
Boron	mg/L	0.05	0.053	106	80-120	
Cadmium	mg/L	0.01	0.010	105	80-120	
Chromium	mg/L	0.05	0.052	104	80-120	
Cobalt	mg/L	0.01	0.010	104	80-120	
Lead	mg/L	0.05	0.052	104	80-120	
Lithium	mg/L	0.05	0.051	101	80-120	
Molybdenum	mg/L	0.05	0.052	105	80-120	
Selenium	mg/L	0.05	0.051	101	80-120	
Thallium	mg/L	0.01	0.010	104	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Parameter	Units	3002726		3002727		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92493014001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Antimony	mg/L	ND	0.05	0.05	0.052	0.052	102	102	75-125	0	20		
Arsenic	mg/L	0.0079	0.01	0.01	0.018	0.018	98	99	75-125	1	20		
Barium	mg/L	0.056	0.05	0.05	0.11	0.11	99	101	75-125	1	20		
Beryllium	mg/L	ND	0.01	0.01	0.010	0.010	99	102	75-125	3	20		
Boron	mg/L	ND	0.05	0.05	ND	ND	81	78	75-125		20		
Cadmium	mg/L	ND	0.01	0.01	0.011	0.010	105	103	75-125	2	20		
Chromium	mg/L	ND	0.05	0.05	0.051	0.050	102	101	75-125	1	20		
Cobalt	mg/L	ND	0.01	0.01	0.010	0.010	103	103	75-125	0	20		
Lead	mg/L	ND	0.05	0.05	0.052	0.052	102	103	75-125	0	20		
Lithium	mg/L	ND	0.05	0.05	0.051	0.052	99	101	75-125	2	20		
Molybdenum	mg/L	ND	0.05	0.05	0.052	0.052	102	103	75-125	1	20		
Selenium	mg/L	ND	0.05	0.05	0.050	0.051	101	102	75-125	1	20		
Thallium	mg/L	ND	0.01	0.01	0.010	0.010	100	101	75-125	1	20		

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

QC Batch: 563524 Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92493014001, 92493014002, 92493014003, 92493014004

METHOD BLANK: 2987922 Matrix: Water
Associated Lab Samples: 92493014001, 92493014002, 92493014003, 92493014004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	08/31/20 18:31	

LABORATORY CONTROL SAMPLE: 2987923

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	251	242	97	90-110	

SAMPLE DUPLICATE: 2987924

Parameter	Units	92492931002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	690	668	3	25	

SAMPLE DUPLICATE: 2988155

Parameter	Units	92493054001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	91.0	93.0	2	25	

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

QC Batch: 563688 Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92493014005, 92493014006, 92493014007, 92493014008, 92493014009, 92493014010, 92493014011, 92493014012, 92493014013, 92493014014, 92493014015, 92493014016, 92493014017

METHOD BLANK: 2988407 Matrix: Water
Associated Lab Samples: 92493014005, 92493014006, 92493014007, 92493014008, 92493014009, 92493014010, 92493014011, 92493014012, 92493014013, 92493014014, 92493014015, 92493014016, 92493014017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	09/01/20 13:12	

LABORATORY CONTROL SAMPLE: 2988408

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	251	246	98	90-110	

SAMPLE DUPLICATE: 2988409

Parameter	Units	92492906001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	232000 ug/L	226	3	25	

SAMPLE DUPLICATE: 2988410

Parameter	Units	92493014008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	14700	16200	10	25	

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

QC Batch: 563802 Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92493014018, 92493014019

METHOD BLANK: 2988946 Matrix: Water
Associated Lab Samples: 92493014018, 92493014019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	09/01/20 16:19	

LABORATORY CONTROL SAMPLE: 2988947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	251	232	93	90-110	

SAMPLE DUPLICATE: 2988948

Parameter	Units	92493014018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	12600	12900	2	25	

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

QC Batch: 563275 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Asheville
 Associated Lab Samples: 92493014001, 92493014002, 92493014003, 92493014004, 92493014005

METHOD BLANK: 2986725 Matrix: Water
 Associated Lab Samples: 92493014001, 92493014002, 92493014003, 92493014004, 92493014005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	08/29/20 12:40	
Fluoride	mg/L	ND	0.10	0.050	08/29/20 12:40	
Sulfate	mg/L	ND	1.0	0.50	08/29/20 12:40	

LABORATORY CONTROL SAMPLE: 2986726

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.8	98	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	49.0	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986727 2986728

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92492795001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	3.8	50	50	52.8	54.0	98	100	90-110	2	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.6	99	102	90-110	3	10		
Sulfate	mg/L	1.7	50	50	50.9	52.0	98	101	90-110	2	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986729 2986730

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92492903002	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	ND	50	50	49.6	50.3	99	101	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.4	2.4	98	96	90-110	2	10		
Sulfate	mg/L	ND	50	50	49.6	50.1	99	100	90-110	1	10		

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QUALITY CONTROL DATA

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

QC Batch: 563276 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92493014006, 92493014007, 92493014008, 92493014009, 92493014010, 92493014011, 92493014012, 92493014013, 92493014014, 92493014015, 92493014016, 92493014017, 92493014018, 92493014019

METHOD BLANK: 2986731 Matrix: Water
Associated Lab Samples: 92493014006, 92493014007, 92493014008, 92493014009, 92493014010, 92493014011, 92493014012, 92493014013, 92493014014, 92493014015, 92493014016, 92493014017, 92493014018, 92493014019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	08/30/20 23:37	
Fluoride	mg/L	ND	0.10	0.050	08/30/20 23:37	
Sulfate	mg/L	ND	1.0	0.50	08/30/20 23:37	

LABORATORY CONTROL SAMPLE: 2986732

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.2	100	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	50	50.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986733 2986734

Parameter	Units	2986733		2986734		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	13.3	50	50	62.7	63.8	99	101	90-110	2	10
Fluoride	mg/L	0.097J	2.5	2.5	3.4	3.4	133	133	90-110	0	10 M1
Sulfate	mg/L	21.8	50	50	71.5	72.2	99	101	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986735 2986736

Parameter	Units	2986735		2986736		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	ND	50	50	49.6	50.1	99	100	90-110	1	10
Fluoride	mg/L	ND	2.5	2.5	3.1	2.6	122	103	90-110	17	10 M1,R1
Sulfate	mg/L	ND	50	50	49.4	49.9	99	100	90-110	1	10

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

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

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS ASH POND SCAN

Pace Project No.: 92493014

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92493014001	MCM-01				
92493014002	MCM-02				
92493014003	MCM-04				
92493014004	MCM-05				
92493014005	MCM-07				
92493014006	MCM-11				
92493014007	MCM-12				
92493014008	MCM-14				
92493014009	MCM-15				
92493014010	MCM-16				
92493014011	MCM-17				
92493014012	MCM-18				
92493014013	MCM-19				
92493014014	MCM-20				
92493014019	MCM-06				
92493014001	MCM-01	EPA 3010A	563604	EPA 6010D	563623
92493014002	MCM-02	EPA 3010A	563907	EPA 6010D	563931
92493014003	MCM-04	EPA 3010A	563907	EPA 6010D	563931
92493014004	MCM-05	EPA 3010A	563907	EPA 6010D	563931
92493014005	MCM-07	EPA 3010A	563907	EPA 6010D	563931
92493014006	MCM-11	EPA 3010A	563907	EPA 6010D	563931
92493014007	MCM-12	EPA 3010A	563907	EPA 6010D	563931
92493014008	MCM-14	EPA 3010A	563907	EPA 6010D	563931
92493014009	MCM-15	EPA 3010A	563907	EPA 6010D	563931
92493014010	MCM-16	EPA 3010A	563907	EPA 6010D	563931
92493014011	MCM-17	EPA 3010A	563907	EPA 6010D	563931
92493014012	MCM-18	EPA 3010A	563907	EPA 6010D	563931
92493014013	MCM-19	EPA 3010A	563907	EPA 6010D	563931
92493014014	MCM-20	EPA 3010A	563907	EPA 6010D	563931
92493014015	FBL082620	EPA 3010A	563907	EPA 6010D	563931
92493014016	EQBL082620	EPA 3010A	563907	EPA 6010D	563931
92493014017	DUP-1	EPA 3010A	563907	EPA 6010D	563931
92493014018	DUP-2	EPA 3010A	563907	EPA 6010D	563931
92493014019	MCM-06	EPA 3010A	563907	EPA 6010D	563931
92493014001	MCM-01	EPA 3010A	566587	EPA 6020B	566664
92493014002	MCM-02	EPA 3010A	566587	EPA 6020B	566664
92493014003	MCM-04	EPA 3010A	566587	EPA 6020B	566664
92493014004	MCM-05	EPA 3010A	566587	EPA 6020B	566664
92493014005	MCM-07	EPA 3010A	566587	EPA 6020B	566664
92493014006	MCM-11	EPA 3010A	566587	EPA 6020B	566664
92493014007	MCM-12	EPA 3010A	566587	EPA 6020B	566664
92493014008	MCM-14	EPA 3010A	566587	EPA 6020B	566664
92493014009	MCM-15	EPA 3010A	566587	EPA 6020B	566664
92493014010	MCM-16	EPA 3010A	566587	EPA 6020B	566664
92493014011	MCM-17	EPA 3010A	566587	EPA 6020B	566664
92493014012	MCM-18	EPA 3010A	566587	EPA 6020B	566664
92493014013	MCM-19	EPA 3010A	566587	EPA 6020B	566664

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92493014014	MCM-20	EPA 3010A	566587	EPA 6020B	566664
92493014015	FBL082620	EPA 3010A	566587	EPA 6020B	566664
92493014016	EQBL082620	EPA 3010A	566587	EPA 6020B	566664
92493014017	DUP-1	EPA 3010A	566587	EPA 6020B	566664
92493014018	DUP-2	EPA 3010A	566587	EPA 6020B	566664
92493014019	MCM-06	EPA 3010A	563910	EPA 6020B	563924
92493014001	MCM-01	EPA 7470A	563861	EPA 7470A	563890
92493014002	MCM-02	EPA 7470A	563861	EPA 7470A	563890
92493014003	MCM-04	EPA 7470A	563861	EPA 7470A	563890
92493014004	MCM-05	EPA 7470A	563861	EPA 7470A	563890
92493014005	MCM-07	EPA 7470A	563861	EPA 7470A	563890
92493014006	MCM-11	EPA 7470A	563861	EPA 7470A	563890
92493014007	MCM-12	EPA 7470A	563861	EPA 7470A	563890
92493014008	MCM-14	EPA 7470A	563861	EPA 7470A	563890
92493014009	MCM-15	EPA 7470A	563861	EPA 7470A	563890
92493014010	MCM-16	EPA 7470A	563861	EPA 7470A	563890
92493014011	MCM-17	EPA 7470A	563861	EPA 7470A	563890
92493014012	MCM-18	EPA 7470A	563861	EPA 7470A	563890
92493014013	MCM-19	EPA 7470A	563861	EPA 7470A	563890
92493014014	MCM-20	EPA 7470A	563861	EPA 7470A	563890
92493014015	FBL082620	EPA 7470A	563861	EPA 7470A	563890
92493014016	EQBL082620	EPA 7470A	563861	EPA 7470A	563890
92493014017	DUP-1	EPA 7470A	563861	EPA 7470A	563890
92493014018	DUP-2	EPA 7470A	563861	EPA 7470A	563890
92493014019	MCM-06	EPA 7470A	563861	EPA 7470A	563890
92493014001	MCM-01	SM 2540C-2011	563524		
92493014002	MCM-02	SM 2540C-2011	563524		
92493014003	MCM-04	SM 2540C-2011	563524		
92493014004	MCM-05	SM 2540C-2011	563524		
92493014005	MCM-07	SM 2540C-2011	563688		
92493014006	MCM-11	SM 2540C-2011	563688		
92493014007	MCM-12	SM 2540C-2011	563688		
92493014008	MCM-14	SM 2540C-2011	563688		
92493014009	MCM-15	SM 2540C-2011	563688		
92493014010	MCM-16	SM 2540C-2011	563688		
92493014011	MCM-17	SM 2540C-2011	563688		
92493014012	MCM-18	SM 2540C-2011	563688		
92493014013	MCM-19	SM 2540C-2011	563688		
92493014014	MCM-20	SM 2540C-2011	563688		
92493014015	FBL082620	SM 2540C-2011	563688		
92493014016	EQBL082620	SM 2540C-2011	563688		
92493014017	DUP-1	SM 2540C-2011	563688		
92493014018	DUP-2	SM 2540C-2011	563802		
92493014019	MCM-06	SM 2540C-2011	563802		
92493014001	MCM-01	EPA 300.0 Rev 2.1 1993	563275		
92493014002	MCM-02	EPA 300.0 Rev 2.1 1993	563275		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS ASH POND SCAN
Pace Project No.: 92493014

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92493014003	MCM-04	EPA 300.0 Rev 2.1 1993	563275		
92493014004	MCM-05	EPA 300.0 Rev 2.1 1993	563275		
92493014005	MCM-07	EPA 300.0 Rev 2.1 1993	563275		
92493014006	MCM-11	EPA 300.0 Rev 2.1 1993	563276		
92493014007	MCM-12	EPA 300.0 Rev 2.1 1993	563276		
92493014008	MCM-14	EPA 300.0 Rev 2.1 1993	563276		
92493014009	MCM-15	EPA 300.0 Rev 2.1 1993	563276		
92493014010	MCM-16	EPA 300.0 Rev 2.1 1993	563276		
92493014011	MCM-17	EPA 300.0 Rev 2.1 1993	563276		
92493014012	MCM-18	EPA 300.0 Rev 2.1 1993	563276		
92493014013	MCM-19	EPA 300.0 Rev 2.1 1993	563276		
92493014014	MCM-20	EPA 300.0 Rev 2.1 1993	563276		
92493014015	FBL082620	EPA 300.0 Rev 2.1 1993	563276		
92493014016	EQBL082620	EPA 300.0 Rev 2.1 1993	563276		
92493014017	DUP-1	EPA 300.0 Rev 2.1 1993	563276		
92493014018	DUP-2	EPA 300.0 Rev 2.1 1993	563276		
92493014019	MCM-06	EPA 300.0 Rev 2.1 1993	563276		

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Document Name:
Sample Condition Upon Receipt(SCUR)
Document No.:
F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
Page 1 of 2
Issuing Authority:
Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition Upon Receipt

Client Name:

Georgia Power

Project

WO#: 92493014

Courier:

Commercial

Fed Ex

Pace

UPS

USPS

Other: _____

Client



92493014

Date/Initials Person Examining Contents: 2-28-18/UA

Custody Seal Present?

Yes

No

Seals Intact?

Yes

No

Packing Material:

Bubble Wrap

Bubble Bags

None

Other

Biological Tissue Frozen?

Yes

No

N/A

Thermometer:

IR Gun ID: 93-7061

Type of Ice:

Wet

Blue

None

Cooler Temp (°C): 1.9, 0.9, 1.2, 1.4

Correction Factor: Add/Subtract (°C)

0

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.9, 0.9, 1.2, 1.4

USDA Regulated Soil N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Yes

No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

		Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix:	WT	
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____

Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



Document Name:
 Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, L/Hg

**Bottom half of box is to list number of bottle

Project #

WO# : 92493014

PM: KLH1

Due Date: 09/14/20

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (p9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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11	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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



Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: February 7, 2018 Page 1 of 2
Document No.: F-CAR-CS-033-Rev.06	Issuing Authority: Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project # **WO# : 92493014**

PM: KLH1 Due Date: 09/14/20

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

CLIENT: GA-GA Power

**Bottom half of box is to list number of bottle

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-S035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SPST-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
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Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A

Client Information:
 Name: Georgia Power
 Address: 1003 Weatherstone Parkway
 City: Marietta, GA 30067
 Phone: (404) 336-8400
 Fax: (404) 336-8400
 Email: veronica.bryant@ge.com

Section B

Required Project Information:
 Report To: Veronica Fay
 Copy To: STEVEN M. WILSON
 Project Name: MARIETTA Ash Pond Scan
 Project #: 10768

Section C

Invoice Information:
 Attention: Kevin Herring
 Company Name: Geo Analytical
 Address: 10768
 Project Manager: Kevin Herring
 Email: kevin.herring@ge.com
 Project Profile #: 10768

Regulatory Agency: State / Location: GA

ITEM #	SAMPLE ID One Character per box. 1A-Z, 0-9 / . -	MATRIX Empty Vial WVAC Waste Vial Product Sample WVAC WVAC WVAC WVAC WVAC WVAC	CODE DWC WVAC WVAC WVAC WVAC WVAC WVAC WVAC WVAC WVAC WVAC	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test	Y/N	Requested Analysis: Filtered (Y/N)	Residual Chlorine (Y/N)	SAMPLE CONDITIONS
				START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol					
1	MCM-01			WT G	8/26/20	13:56	5	2	3									5.79 PH
2	MCM-02			WT G	8/26/20	14:25	5	2	3									5.03 PH
3	MCM-04			WT G	8/26/20	11:56	5	2	3									4.95 PH
4	MCM-05			WT G	8/26/20	12:47	5	2	3									6.50 PH
5	MCM-07			WT G	8/26/20	11:21	5	2	3									6.32 PH
6	MCM-11			WT G	8/26/20	10:26	5	2	3									4.96 PH
7	MCM-12			WT G	8/26/20	10:29	5	2	3									6.32 PH
8	MCM-14			WT G	8/26/20	11:46	5	2	3									4.44 G.6.2 PH
9	MCM-15			WT G	8/26/20	14:49	5	2	3									5.33 PH
10	MCM-16			WT G	8/26/20	16:52	5	2	3									4.92 PH
11	MCM-17			WT G	8/26/20	15:56	5	2	3									6.65 PH
12	MCM-18			WT G	8/26/20	11:58	5	2	3									4.27 PH

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Ruth, Will Leaver, Kevin Stephenson, Veronica Fay

SIGNATURE of SAMPLER: *Joe Ruth, Will Leaver, Kevin Stephenson, Veronica Fay*

DATE Signed: 8/26/20

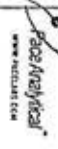
TEMP in C: 19, 12, 14

Received on Ice (Y/N): Y, Y, Y

Custody Sealed (Y/N): Y, Y, Y

Cooler (Y/N): Y, Y, Y

Samples Intact (Y/N): Y, Y, Y



www.veronics.com

CHAIN-OF-CUSTODY / Analytical Request Document

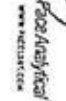
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 OF 2

Section A		Section B		Section C		Section D	
Client Information: Agency: Georgia Power Project: 1001 Weatherstone Parkway City: Woodstock, GA 30188 Contact: Veronica Ely@resolutions.com Phone: (404) 398-6169 Fax: Invoiced On Date:		Required Project Information: Report To: Veronica Ely Copy To: Site PM Purchase Order #: Mokuinus Ash Pond Scan Project Name: Mokuinus Ash Pond Scan Project #:		Invoice Information: Attention: Company Name: Address: Place Order: Paper Project Manager: Kevin.Herrington@gepower.com Paper Profile #: 10768		Regulatory Agency: State/Location: GA	

ITEM #	MATERIAL	COCKS	COLLECTED			DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES										ANALYSES TEST	Y/N	Requestor Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
			START	END								Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	RAD 9015/6320	Metals				
1	MCM-19	One Character Per Box. (Avg. 0.97% Sample Ids must be unique				8/26/20	1430			5	2									X	X	X	X		6243014
2	MCM-20					8/26/20	1548			5	2									X	X	X	X		5.25 PH
3	EQBL082620					8/26/20	1649			5	2									X	X	X	X		3.78 PH
4	EQBL082620					8/26/20	1655			5	2									X	X	X	X		
5	DVP-1					8/26/20				5	2									X	X	X	X		
6	DVP-2					8/26/20				5	2									X	X	X	X		
7-10																									

REQUISITIONED BY/AFFILIATION		DATE	TIME	ACCEPTED BY/AFFILIATION		DATE	TIME	TEMP IN C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
M. Elster		8/27/20	0930	A. Reber/PACE/AVL		8-25-20	1135	0.9	Y	Y	Y	Y
SAMPLER NAME AND SIGNATURE		PRINT NAME OF SAMPLER: Joe Raith, Will Lauer, Stephanie Stewenson, Veronica Ely		SIGNATURE OF SAMPLER: <i>Veronica Ely</i>		DATE SIGNED: 8/26/20						



Section A
 Required Client Information:

Company: Georgia Power
 Address: 1000 Weatherstone Parkway
 City: 320 Woodstock, GA 30188
 Phone: (404) 250-8469
 Email: wstonsa.ky@geoparalytical.com
 Fax: (404) 250-8469
 Project Name: Mckinnis Ash Pond Scan

Section B
 Required Project Information:

Report To: Veronica Fay
 Copy To: Site
 Project Number: 812120
 Purchase Order #: 0930
 Project #: 10786

Section C
 Invoice Information:

Company Name:
 Address:
 City:
 State:
 Zip:
 Project Manager: Kevin Hurling@paralytical.com
 Phone Profile #: 10786

CHAIN-OF-CUSTODY / Analytical Request Document

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

SAMPLE ID
 One Character per box.
 (A-Z, 0-9, /, .)

Matrix:
 Pressure Vessel
 Wastewater
 Water
 Solid
 Other

Code:
 DWG
 BNC
 WWS
 SLD
 OLC
 MFC
 ART
 OTT
 TS

ITEM #	COLLECTED					DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS			Preservatives								ANALYSES TEST	Y/N	Residual Chlorine (Y/N)	Temp in C	SAMPLE CONDITIONS				
	WT	G	START	TIME	END				DATE	TIME	UNPRESERVED	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	RAD 9315/9320					Metals	TDS	Cl, F, SO4	Received on Ice D (Y/N)	Custody Sealed C (Y/N)
1	MCH-06			8/26/20	1608		0930	5	2	3								X	X	X	X	6.88 PH	62463014	Y	Y	Y	Y	
2																												

ADDITIONAL COMMENTS:
 REQUISITIONED BY/ AFFILIATION: [Signature]
 DATE: 8/21/20

ACCEPTED BY/ AFFILIATION: A. RUCKER/ FCE/ NPL
 DATE: 8/26/20

SAMPLER NAME AND SIGNATURE:
 PRINT Name of SAMPLER: Joe Robin Will Love
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed: 8/26/20

September 22, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCMANUS ASH POND SCAN RADS
Pace Project No.: 92493016

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: MCMANUS ASH POND SCAN RADS
Pace Project No.: 92493016

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCMANUS ASH POND SCAN RADS
Pace Project No.: 92493016

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92493016001	MCM-01	Water	08/26/20 13:38	08/28/20 11:35
92493016002	MCM-02	Water	08/26/20 14:25	08/28/20 11:35
92493016003	MCM-04	Water	08/26/20 11:58	08/28/20 11:35
92493016004	MCM-05	Water	08/26/20 12:47	08/28/20 11:35
92493016005	MCM-07	Water	08/26/20 11:21	08/28/20 11:35
92493016006	MCM-11	Water	08/26/20 10:26	08/28/20 11:35
92493016007	MCM-12	Water	08/26/20 10:29	08/28/20 11:35
92493016008	MCM-14	Water	08/26/20 11:48	08/28/20 11:35
92493016009	MCM-15	Water	08/26/20 14:49	08/28/20 11:35
92493016010	MCM-16	Water	08/26/20 16:52	08/28/20 11:35
92493016011	MCM-17	Water	08/26/20 15:56	08/28/20 11:35
92493016012	MCM-18	Water	08/26/20 11:58	08/28/20 11:35
92493016013	MCM-19	Water	08/26/20 14:30	08/28/20 11:35
92493016014	MCM-20	Water	08/26/20 15:48	08/28/20 11:35
92493016015	FBL082620	Water	08/26/20 16:49	08/28/20 11:35
92493016016	EQBL082620	Water	08/26/20 16:55	08/28/20 11:35
92493016017	DUP-1	Water	08/26/20 00:00	08/28/20 11:35
92493016018	DUP-2	Water	08/26/20 00:00	08/28/20 11:35
92493016019	MCM-06	Water	08/26/20 16:08	08/28/20 11:35

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92493016001	MCM-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92493016002	MCM-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92493016003	MCM-04	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92493016004	MCM-05	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92493016005	MCM-07	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92493016006	MCM-11	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92493016007	MCM-12	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92493016008	MCM-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92493016009	MCM-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92493016010	MCM-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92493016011	MCM-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92493016012	MCM-18	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92493016013	MCM-19	EPA 9315	LAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92493016014	MCM-20	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
92493016015	FBL082620	Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92493016016	EQBL082620	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92493016017	DUP-1	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
92493016018	DUP-2	Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92493016019	MCM-06	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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SUMMARY OF DETECTION

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92493016001	MCM-01					
EPA 9315	Radium-226	0.491 ± 0.342 (0.598)	pCi/L		09/11/20 08:55	
EPA 9320	Radium-228	C:91% T:NA -0.676 ± 0.474 (1.19)	pCi/L		09/15/20 15:05	
Total Radium Calculation	Total Radium	C:60% T:88% 0.491 ± 0.816 (1.79)	pCi/L		09/16/20 10:12	
92493016002	MCM-02					
EPA 9315	Radium-226	0.470 ± 0.151 (0.169)	pCi/L		09/10/20 18:20	
EPA 9320	Radium-228	C:88% T:NA 0.00000000 000000044 5 ± 0.513 (1.18)	pCi/L		09/15/20 15:06	
Total Radium Calculation	Total Radium	C:67% T:76% 0.470 ± 0.664 (1.35)	pCi/L		09/16/20 10:12	
92493016003	MCM-04					
EPA 9315	Radium-226	3.63 ± 0.624 (0.268)	pCi/L		09/10/20 18:20	
EPA 9320	Radium-228	C:90% T:NA 1.65 ± 0.714 (1.19)	pCi/L		09/15/20 15:06	
Total Radium Calculation	Total Radium	C:64% T:73% 5.28 ± 1.34 (1.46)	pCi/L		09/16/20 10:12	
92493016004	MCM-05					
EPA 9315	Radium-226	0.690 ± 0.202 (0.201)	pCi/L		09/10/20 18:20	
EPA 9320	Radium-228	C:69% T:NA 0.151 ± 0.495 (1.11)	pCi/L		09/15/20 15:06	
Total Radium Calculation	Total Radium	C:65% T:83% 0.841 ± 0.697 (1.31)	pCi/L		09/16/20 10:12	

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SUMMARY OF DETECTION

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92493016005	MCM-07					
EPA 9315	Radium-226	5.35 ± 0.937 (0.255)	pCi/L		09/21/20 07:31	
EPA 9320	Radium-228	C:87% T:NA 6.49 ± 1.44 (1.05)	pCi/L		09/15/20 15:03	
Total Radium Calculation	Total Radium	C:66% T:81% 11.8 ± 2.38 (1.31)	pCi/L		09/21/20 10:18	
92493016006	MCM-11					
EPA 9315	Radium-226	0.424 ± 0.267 (0.371)	pCi/L		09/11/20 07:02	
EPA 9320	Radium-228	C:90% T:NA -0.184 ± 0.421 (1.00)	pCi/L		09/15/20 15:06	
Total Radium Calculation	Total Radium	C:65% T:90% 0.424 ± 0.688 (1.37)	pCi/L		09/16/20 10:12	
92493016007	MCM-12					
EPA 9315	Radium-226	1.11 ± 0.413 (0.390)	pCi/L		09/11/20 07:03	
EPA 9320	Radium-228	C:99% T:NA 1.03 ± 0.567 (1.03)	pCi/L		09/15/20 15:06	
Total Radium Calculation	Total Radium	C:62% T:82% 2.14 ± 0.980 (1.42)	pCi/L		09/16/20 10:12	
92493016008	MCM-14					
EPA 9315	Radium-226	3.76 ± 0.852 (0.356)	pCi/L		09/11/20 07:04	
EPA 9320	Radium-228	C:98% T:NA 5.84 ± 1.35 (1.08)	pCi/L		09/15/20 15:06	
Total Radium Calculation	Total Radium	C:66% T:78% 9.60 ± 2.20 (1.44)	pCi/L		09/16/20 10:12	
92493016009	MCM-15					
EPA 9315	Radium-226	0.865 ± 0.422 (0.607)	pCi/L		09/11/20 07:04	
		C:90% T:NA				

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SUMMARY OF DETECTION

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92493016009	MCM-15					
EPA 9320	Radium-228	0.425 ± 0.557 (1.19) C:62% T:80%	pCi/L		09/15/20 15:06	
Total Radium Calculation	Total Radium	1.29 ± 0.979 (1.80)	pCi/L		09/16/20 10:12	
92493016010	MCM-16					
EPA 9315	Radium-226	0.643 ± 0.320 (0.368) C:95% T:NA	pCi/L		09/11/20 07:04	
EPA 9320	Radium-228	-0.250 ± 0.434 (1.05) C:62% T:90%	pCi/L		09/15/20 15:06	
Total Radium Calculation	Total Radium	0.643 ± 0.754 (1.42)	pCi/L		09/17/20 14:22	
92493016011	MCM-17					
EPA 9315	Radium-226	4.39 ± 0.877 (0.277) C:82% T:NA	pCi/L		09/14/20 11:38	
EPA 9320	Radium-228	4.12 ± 1.01 (0.820) C:63% T:75%	pCi/L		09/16/20 11:37	
Total Radium Calculation	Total Radium	8.51 ± 1.89 (1.10)	pCi/L		09/17/20 14:22	
92493016012	MCM-18					
EPA 9315	Radium-226	4.73 ± 0.928 (0.315) C:85% T:NA	pCi/L		09/14/20 11:38	
EPA 9320	Radium-228	5.77 ± 1.29 (0.833) C:62% T:81%	pCi/L		09/16/20 11:37	
Total Radium Calculation	Total Radium	10.5 ± 2.22 (1.15)	pCi/L		09/17/20 14:22	
92493016013	MCM-19					
EPA 9315	Radium-226	5.81 ± 1.02 (0.209) C:84% T:NA	pCi/L		09/21/20 07:29	
EPA 9320	Radium-228	16.8 ± 3.23 (0.765) C:62% T:84%	pCi/L		09/16/20 11:37	

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SUMMARY OF DETECTION

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92493016013	MCM-19					
Total Radium Calculation	Total Radium	22.6 ± 4.25 (0.974)	pCi/L		09/21/20 10:18	
92493016014	MCM-20					
EPA 9315	Radium-226	6.00 ± 1.04 (0.193)	pCi/L		09/21/20 07:29	
EPA 9320	Radium-228	30.7 ± 5.71 (0.761) C:63% T:81%	pCi/L		09/16/20 11:37	
Total Radium Calculation	Total Radium	36.7 ± 6.75 (0.954)	pCi/L		09/21/20 10:18	
92493016015	FBL082620					
EPA 9315	Radium-226	0.0158 ± 0.121 (0.324) C:86% T:NA	pCi/L		09/14/20 07:28	
EPA 9320	Radium-228	1.09 ± 0.541 (0.913) C:57% T:75%	pCi/L		09/16/20 11:37	
Total Radium Calculation	Total Radium	1.11 ± 0.662 (1.24)	pCi/L		09/17/20 14:22	
92493016016	EQBL082620					
EPA 9315	Radium-226	0.108 ± 0.142 (0.294) C:86% T:NA	pCi/L		09/14/20 07:28	
EPA 9320	Radium-228	1.56 ± 0.640 (1.02) C:61% T:75%	pCi/L		09/16/20 11:37	
Total Radium Calculation	Total Radium	1.67 ± 0.782 (1.31)	pCi/L		09/17/20 14:22	
92493016017	DUP-1					
EPA 9315	Radium-226	3.74 ± 0.806 (0.445) C:80% T:NA	pCi/L		09/14/20 07:28	
EPA 9320	Radium-228	2.76 ± 0.795 (0.880) C:64% T:70%	pCi/L		09/16/20 11:37	
Total Radium Calculation	Total Radium	6.50 ± 1.60 (1.33)	pCi/L		09/17/20 14:22	

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SUMMARY OF DETECTION

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92493016018	DUP-2					
EPA 9315	Radium-226	6.17 ± 1.07 (0.262)	pCi/L		09/21/20 07:31	
EPA 9320	Radium-228	C:83% T:NA 33.9 ± 6.30 (0.840)	pCi/L		09/16/20 11:37	
		C:61% T:79%				
Total Radium Calculation	Total Radium	40.1 ± 7.37 (1.10)	pCi/L		09/21/20 10:18	
92493016019	MCM-06					
EPA 9315	Radium-226	4.83 ± 0.958 (0.337)	pCi/L		09/14/20 07:28	
EPA 9320	Radium-228	C:81% T:NA 3.23 ± 0.991 (1.24)	pCi/L		09/16/20 11:37	
		C:64% T:57%				
Total Radium Calculation	Total Radium	8.06 ± 1.95 (1.58)	pCi/L		09/17/20 14:22	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-01 **Lab ID: 92493016001** Collected: 08/26/20 13:38 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.491 ± 0.342 (0.598) C:91% T:NA	pCi/L	09/11/20 08:55	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.676 ± 0.474 (1.19) C:60% T:88%	pCi/L	09/15/20 15:05	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.491 ± 0.816 (1.79)	pCi/L	09/16/20 10:12	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-02 **Lab ID: 92493016002** Collected: 08/26/20 14:25 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.470 ± 0.151 (0.169) C:88% T:NA	pCi/L	09/10/20 18:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.0000000000000000445 ± 0.513 (1.18) C:67% T:76%	pCi/L	09/15/20 15:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.470 ± 0.664 (1.35)	pCi/L	09/16/20 10:12	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-04 **Lab ID: 92493016003** Collected: 08/26/20 11:58 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	3.63 ± 0.624 (0.268) C:90% T:NA	pCi/L	09/10/20 18:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.65 ± 0.714 (1.19) C:64% T:73%	pCi/L	09/15/20 15:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	5.28 ± 1.34 (1.46)	pCi/L	09/16/20 10:12	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-05 **Lab ID: 92493016004** Collected: 08/26/20 12:47 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.690 ± 0.202 (0.201) C:69% T:NA	pCi/L	09/10/20 18:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.151 ± 0.495 (1.11) C:65% T:83%	pCi/L	09/15/20 15:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.841 ± 0.697 (1.31)	pCi/L	09/16/20 10:12	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-07 **Lab ID: 92493016005** Collected: 08/26/20 11:21 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	5.35 ± 0.937 (0.255) C:87% T:NA	pCi/L	09/21/20 07:31	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	6.49 ± 1.44 (1.05) C:66% T:81%	pCi/L	09/15/20 15:03	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	11.8 ± 2.38 (1.31)	pCi/L	09/21/20 10:18	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-11 **Lab ID: 92493016006** Collected: 08/26/20 10:26 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.424 ± 0.267 (0.371) C:90% T:NA	pCi/L	09/11/20 07:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.184 ± 0.421 (1.00) C:65% T:90%	pCi/L	09/15/20 15:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.424 ± 0.688 (1.37)	pCi/L	09/16/20 10:12	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-12 **Lab ID: 92493016007** Collected: 08/26/20 10:29 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	1.11 ± 0.413 (0.390) C:99% T:NA	pCi/L	09/11/20 07:03	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.03 ± 0.567 (1.03) C:62% T:82%	pCi/L	09/15/20 15:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.14 ± 0.980 (1.42)	pCi/L	09/16/20 10:12	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-14 **Lab ID: 92493016008** Collected: 08/26/20 11:48 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	3.76 ± 0.852 (0.356) C:98% T:NA	pCi/L	09/11/20 07:04	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	5.84 ± 1.35 (1.08) C:66% T:78%	pCi/L	09/15/20 15:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	9.60 ± 2.20 (1.44)	pCi/L	09/16/20 10:12	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-15 **Lab ID: 92493016009** Collected: 08/26/20 14:49 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.865 ± 0.422 (0.607) C:90% T:NA	pCi/L	09/11/20 07:04	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.425 ± 0.557 (1.19) C:62% T:80%	pCi/L	09/15/20 15:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.29 ± 0.979 (1.80)	pCi/L	09/16/20 10:12	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-16 **Lab ID: 92493016010** Collected: 08/26/20 16:52 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.643 ± 0.320 (0.368) C:95% T:NA	pCi/L	09/11/20 07:04	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.250 ± 0.434 (1.05) C:62% T:90%	pCi/L	09/15/20 15:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.643 ± 0.754 (1.42)	pCi/L	09/17/20 14:22	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-17 **Lab ID: 92493016011** Collected: 08/26/20 15:56 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	4.39 ± 0.877 (0.277) C:82% T:NA	pCi/L	09/14/20 11:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	4.12 ± 1.01 (0.820) C:63% T:75%	pCi/L	09/16/20 11:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	8.51 ± 1.89 (1.10)	pCi/L	09/17/20 14:22	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-18 **Lab ID: 92493016012** Collected: 08/26/20 11:58 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	4.73 ± 0.928 (0.315) C:85% T:NA	pCi/L	09/14/20 11:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	5.77 ± 1.29 (0.833) C:62% T:81%	pCi/L	09/16/20 11:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	10.5 ± 2.22 (1.15)	pCi/L	09/17/20 14:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-19 **Lab ID: 92493016013** Collected: 08/26/20 14:30 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	5.81 ± 1.02 (0.209) C:84% T:NA	pCi/L	09/21/20 07:29	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	16.8 ± 3.23 (0.765) C:62% T:84%	pCi/L	09/16/20 11:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	22.6 ± 4.25 (0.974)	pCi/L	09/21/20 10:18	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-20 **Lab ID: 92493016014** Collected: 08/26/20 15:48 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	6.00 ± 1.04 (0.193) C:84% T:NA	pCi/L	09/21/20 07:29	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	30.7 ± 5.71 (0.761) C:63% T:81%	pCi/L	09/16/20 11:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	36.7 ± 6.75 (0.954)	pCi/L	09/21/20 10:18	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: FBL082620 **Lab ID: 92493016015** Collected: 08/26/20 16:49 Received: 08/28/20 11:35 Matrix: Water
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.0158 ± 0.121 (0.324) C:86% T:NA	pCi/L	09/14/20 07:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.09 ± 0.541 (0.913) C:57% T:75%	pCi/L	09/16/20 11:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.11 ± 0.662 (1.24)	pCi/L	09/17/20 14:22	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: EQBL082620 Lab ID: 92493016016 Collected: 08/26/20 16:55 Received: 08/28/20 11:35 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.108 ± 0.142 (0.294) C:86% T:NA	pCi/L	09/14/20 07:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.56 ± 0.640 (1.02) C:61% T:75%	pCi/L	09/16/20 11:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.67 ± 0.782 (1.31)	pCi/L	09/17/20 14:22	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: DUP-1 **Lab ID: 92493016017** Collected: 08/26/20 00:00 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	3.74 ± 0.806 (0.445) C:80% T:NA	pCi/L	09/14/20 07:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	2.76 ± 0.795 (0.880) C:64% T:70%	pCi/L	09/16/20 11:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	6.50 ± 1.60 (1.33)	pCi/L	09/17/20 14:22	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: DUP-2 **Lab ID: 92493016018** Collected: 08/26/20 00:00 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	6.17 ± 1.07 (0.262) C:83% T:NA	pCi/L	09/21/20 07:31	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	33.9 ± 6.30 (0.840) C:61% T:79%	pCi/L	09/16/20 11:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	40.1 ± 7.37 (1.10)	pCi/L	09/21/20 10:18	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Sample: MCM-06 **Lab ID: 92493016019** Collected: 08/26/20 16:08 Received: 08/28/20 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	4.83 ± 0.958 (0.337) C:81% T:NA	pCi/L	09/14/20 07:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	3.23 ± 0.991 (1.24) C:64% T:57%	pCi/L	09/16/20 11:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	8.06 ± 1.95 (1.58)	pCi/L	09/17/20 14:22	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS
Pace Project No.: 92493016

QC Batch:	412356	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg
Associated Lab Samples:	92493016011, 92493016012, 92493016013, 92493016014, 92493016015, 92493016016, 92493016017, 92493016018, 92493016019		

METHOD BLANK:	1994515	Matrix:	Water
Associated Lab Samples:	92493016011, 92493016012, 92493016013, 92493016014, 92493016015, 92493016016, 92493016017, 92493016018, 92493016019		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0596 ± 0.133 (0.265) C:74% T:NA	pCi/L	09/11/20 18:17	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

QC Batch:	412345	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92493016001, 92493016002, 92493016003, 92493016004, 92493016005, 92493016006, 92493016007, 92493016008, 92493016009, 92493016010

METHOD BLANK:	1994499	Matrix:	Water
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Associated Lab Samples: 92493016001, 92493016002, 92493016003, 92493016004, 92493016005, 92493016006, 92493016007, 92493016008, 92493016009, 92493016010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.357 ± 0.355 (0.727) C:71% T:84%	pCi/L	09/15/20 15:02	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS
Pace Project No.: 92493016

QC Batch:	412352	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92493016001, 92493016002, 92493016003, 92493016004, 92493016005, 92493016006, 92493016007, 92493016008, 92493016009, 92493016010

METHOD BLANK: 1994514 Matrix: Water

Associated Lab Samples: 92493016001, 92493016002, 92493016003, 92493016004, 92493016005, 92493016006, 92493016007, 92493016008, 92493016009, 92493016010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.206 ± 0.102 (0.149) C:95% T:NA	pCi/L	09/10/20 19:37	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

QC Batch:	412346	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg
Associated Lab Samples:	92493016011, 92493016012, 92493016013, 92493016014, 92493016015, 92493016016, 92493016017, 92493016018, 92493016019		

METHOD BLANK:	1994501	Matrix:	Water
Associated Lab Samples:	92493016011, 92493016012, 92493016013, 92493016014, 92493016015, 92493016016, 92493016017, 92493016018, 92493016019		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.749 ± 0.397 (0.699) C:71% T:81%	pCi/L	09/16/20 11:37	

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

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QUALIFIERS

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92493016001	MCM-01	EPA 9315	412352		
92493016002	MCM-02	EPA 9315	412352		
92493016003	MCM-04	EPA 9315	412352		
92493016004	MCM-05	EPA 9315	412352		
92493016005	MCM-07	EPA 9315	412352		
92493016006	MCM-11	EPA 9315	412352		
92493016007	MCM-12	EPA 9315	412352		
92493016008	MCM-14	EPA 9315	412352		
92493016009	MCM-15	EPA 9315	412352		
92493016010	MCM-16	EPA 9315	412352		
92493016011	MCM-17	EPA 9315	412356		
92493016012	MCM-18	EPA 9315	412356		
92493016013	MCM-19	EPA 9315	412356		
92493016014	MCM-20	EPA 9315	412356		
92493016015	FBL082620	EPA 9315	412356		
92493016016	EQBL082620	EPA 9315	412356		
92493016017	DUP-1	EPA 9315	412356		
92493016018	DUP-2	EPA 9315	412356		
92493016019	MCM-06	EPA 9315	412356		
92493016001	MCM-01	EPA 9320	412345		
92493016002	MCM-02	EPA 9320	412345		
92493016003	MCM-04	EPA 9320	412345		
92493016004	MCM-05	EPA 9320	412345		
92493016005	MCM-07	EPA 9320	412345		
92493016006	MCM-11	EPA 9320	412345		
92493016007	MCM-12	EPA 9320	412345		
92493016008	MCM-14	EPA 9320	412345		
92493016009	MCM-15	EPA 9320	412345		
92493016010	MCM-16	EPA 9320	412345		
92493016011	MCM-17	EPA 9320	412346		
92493016012	MCM-18	EPA 9320	412346		
92493016013	MCM-19	EPA 9320	412346		
92493016014	MCM-20	EPA 9320	412346		
92493016015	FBL082620	EPA 9320	412346		
92493016016	EQBL082620	EPA 9320	412346		
92493016017	DUP-1	EPA 9320	412346		
92493016018	DUP-2	EPA 9320	412346		
92493016019	MCM-06	EPA 9320	412346		
92493016001	MCM-01	Total Radium Calculation	414090		
92493016002	MCM-02	Total Radium Calculation	414090		
92493016003	MCM-04	Total Radium Calculation	414090		
92493016004	MCM-05	Total Radium Calculation	414090		
92493016005	MCM-07	Total Radium Calculation	414777		
92493016006	MCM-11	Total Radium Calculation	414090		
92493016007	MCM-12	Total Radium Calculation	414090		
92493016008	MCM-14	Total Radium Calculation	414090		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS ASH POND SCAN RADS

Pace Project No.: 92493016

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92493016009	MCM-15	Total Radium Calculation	414090		
92493016010	MCM-16	Total Radium Calculation	414422		
92493016011	MCM-17	Total Radium Calculation	414422		
92493016012	MCM-18	Total Radium Calculation	414422		
92493016013	MCM-19	Total Radium Calculation	414777		
92493016014	MCM-20	Total Radium Calculation	414777		
92493016015	FBL082620	Total Radium Calculation	414422		
92493016016	EQBL082620	Total Radium Calculation	414422		
92493016017	DUP-1	Total Radium Calculation	414422		
92493016018	DUP-2	Total Radium Calculation	414777		
92493016019	MCM-06	Total Radium Calculation	414422		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:
 Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition Upon Receipt

Client Name:
Georgia Power

Project # **WO#: 92493016**

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



Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *8-28-2018*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?
 Yes No N/A

Thermometer: IR Gun ID: *93-7061* Type of Ice: Wet Blue None

Cooler Temp (°C): *1.9, 0.9, 1.2, 1.4* Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): *1.9, 0.9, 1.2, 1.4*

USDA Regulated Soil N/A, water sample

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.	
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Includes Date/Time/ID/Analysis Matrix: <i>WT</i>			
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)
Document No.:
F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
Page 1 of 2
Issuing Authority:
Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottle

Project # **WO# : 92493016**

PM: KLH1

Due Date: 09/14/20

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN-Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5095 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP1U	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
3	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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9	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
11	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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



Document Name:
 Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottle

Project # **WO# : 92493016**

PM: KLH1

Due Date: 09/14/20

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-S035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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11	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Collform, TOC, Oil and Grease, DRO/8015 (water) DOC, LUHg

**Bottom half of box is to list number of bottle

Project # **WO# : 92493016**
 PM: KLH1 Due Date: 09/14/20
 CLIENT: GR-GR Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNC3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - 1bb)	SP2T-350 mL Sterile Plastic (N/A - 1bb)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1	/	/			/																								
2																													
3																													
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Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 2

Section A	Section B	Section C
Client Information:	Required Project Information:	Invoice Information:
Company: Georgia Power	Report To: Veronica Fay	Attention:
Address: 1000 Westmerstone Parkway W 230, Woodstock, GA 30188	Copy To: STEPHEN.WILLSON@ge.com	Company Name:
Phone: veronica.fay@ge.com	Project Name: Mokuauia Ash Pond Seam	Address:
Fax: (404)328-9400	Purchase Order #: 10768	Project Manager: Kevin Herring@ge.com
	Project #: 10768	Plant Profile #: 10768
		Requested Analysis Filtered (Y/N)
		Regulatory Agency: State / Location GA

ITEM	SAMPLE ID One Character per Box. (A-Z, 0-9, -)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Y/N	Residual Chlorine (Y/N)	SAMPLE CONDITIONS
				START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other				
1	MCM-01	NTG	G	8/26/20	13:30	5	2	3										5.79 PH
2	MCM-02	NTG	G	8/26/20	14:25	5	2	3										5.03 PH
3	MCM-04	NTG	G	8/26/20	1:58	5	2	3										4.95 PH
4	MCM-05	NTG	G	8/26/20	12:47	5	2	3										6.50 PH
5	MCM-07	NTG	G	8/26/20	11:21	5	2	3										6.32 PH
6	MCM-11	NTG	G	8/26/20	10:26	5	2	3										4.96 PH
7	MCM-12	NTG	G	8/26/20	10:29	5	2	3										6.32 PH
8	MCM-14	NTG	G	8/26/20	11:48	5	2	3										4.44-6.62 PH
9	MCM-15	NTG	G	8/26/20	14:49	5	2	3										5.33 PH
10	MCM-16	NTG	G	8/26/20	16:52	5	2	3										4.92 PH
11	MCM-17	NTG	G	8/26/20	15:56	5	2	3										6.65 PH
12	MCM-18	NTG	G	8/26/20	11:58	5	2	3										4.27 PH

RELEASING BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
<i>[Signature]</i>	8/27/20	0930	<i>[Signature]</i>	8-28-20	135
SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER: Joe South, Will Leaker, Kevin Stephenson, Veronica Fay			DATE Signed: 8/26/20		
SIGNATURE of SAMPLER: <i>[Signatures]</i>					
TEMP in C	Received on Ice (Y/N)	Casidy Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)	
12	Y	Y	Y	Y	
11	Y	Y	Y	Y	
10	Y	Y	Y	Y	
9	Y	Y	Y	Y	
8	Y	Y	Y	Y	
7	Y	Y	Y	Y	
6	Y	Y	Y	Y	
5	Y	Y	Y	Y	
4	Y	Y	Y	Y	
3	Y	Y	Y	Y	
2	Y	Y	Y	Y	
1	Y	Y	Y	Y	



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

Section A

Required Client Information:
 Agency: Georgia Power
 Project: 1003 Weststone Parkway
 to 220 Woodstock, GA 30188
 Email: veronica.fry@resolute.com
 Phone: (404) 358-4450 Fax:
 Requested Due Date:
 Project #:

Section B

Required Project Information:
 Report To: Veronica Fry
 Copy To: Site Pherma, 15001 G...
 Project Name: Nicholas Ash Pond Scan
 Purchase Order #:
 Project #:

Section C

Invoice Information:
 Attention:
 Company Name:
 Address:
 PO Box:
 PO Box Profile #: 10768
 Requested Analysis: Filtered (Y/N)
 Regulatory Agency:
 State / Location: GA

ITEM #	SAMPLE ID One Character per Box (A-Z, 0-9)	MATRIX CODE (See valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMPT COLLECTION	# OF CONTAINERS	PRESERVATIVES	Analysis Test	Residual Chlorine (Y/N)	
				START DATE TIME	END DATE TIME						
1	MCM-19			8/26/20	1430		5	2	3	X	5.25 PH 3.78 PH 62467016
2	MCM-20			8/26/20	1548		5	2	3	X	
3	FBLO82620			8/26/20	1649		5	2	3	X	
4	EQBL082620			8/26/20	1655		5	2	3	X	
5	DVP-1			8/26/20	—		5	2	3	X	
6	DVP-2			8/26/20	—		5	2	3	X	
7											
8											
9											
10											
11											
12											

ADDITIONAL COMMENTS		RELINQUISHED BY (REGULATION)		ACCEPTED BY (ASTMATION)		SAMPLER NAME AND SIGNATURE			TEMP in C	Received on IceD (Y/N)	Custody Sealed/ CoolerC (Y/N)	Samples Intact (Y/N)
		DATE	TIME	DATE	TIME	DATE	TIME					
		8/21/20	0930			8-25-20	1135		1.9	Y	Y	Y
									1.2	Y	Y	Y
									1.4	Y	Y	Y

PRINT Name of SAMPLER: Joe Roth, Will Leaver, Stephen Stevenson, Veronica Fry
 SIGNATURE of SAMPLER: *[Signatures]*
 DATE Signed: 8/26/20

SAMPLER NAME AND SIGNATURE
 DATE: 8/26/20
 TIME: 1135
 TEMPERATURE: 1.9
 Received on Ice: Y
 Custody Sealed/ Cooler: Y
 Samples Intact: Y

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



Section A
Client Information:
Company: Georgia Power
Address: 1000 Weatherstone Parkway
City: 16320 Woodstock, GA 30188
Phone: (404) 350-8469
Fax: (404) 350-8469
Email: wfonoma_dy@resourcernv.com
Web: www.gsp.com

Section B
Required Project Information:
Report To: Veronica Fay
Copy To: Site Technician
Purchase Order #: RA-2016-07-01-01
Project Name: Mathews Ash Pond Scan
Project #: 10765

Section C
Invoice Information:
Company Name: Georgia Power
Address: 1000 Weatherstone Parkway
City: 16320 Woodstock, GA 30188
Phone: (404) 350-8469
Fax: (404) 350-8469
Email: wfonoma_dy@resourcernv.com
Web: www.gsp.com

ITEM #	SAMPLE ID Other Character per box, (A-Z, 0-9 /) Sample IDs must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAV C-COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	Analytes Test RAD 9315/9320 Metals TDS Cl, F, SO4	Requested Analytic Filtered (Y/N)	Residual Chlorine (Y/N)
				START DATE	START TIME	END DATE	END TIME						
1	McM-06		WT G	8/24/16	0805			5					
2													

REQUISITIONED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
						TEMP IN C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
McM	8/27/16	0930	A. RICHMOND / GSP	8/29/16	1305	1.9	Y	Y	Y	Y
						1.2	Y	Y	Y	Y
						1.9	Y	Y	Y	Y

ADDITIONAL COMMENTS: _____
REQUISITIONED BY / AFFILIATION: _____
DATE: _____
TIME: _____
ACCEPTED BY / AFFILIATION: _____
DATE: _____
TIME: _____
SAMPLER NAME AND SIGNATURE: _____
PRINT Name of SAMPLER: Joe Smith, Will Lauer, Kevin Stephenson, Veronica Fay
SIGNATURE of SAMPLER: _____
DATE Signed: 8/26/16

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 9/10/2020
Worklist: 56959
Matrix: DW

Method Blank Assessment	MB Sample ID	MB Concentration	M/B Counting Uncertainty	MB MDC	MB Numerical Performance Indicator	MB Status vs Numerical Indicator	MB Status vs. MDC	See Comment*
	1994514	0.206	0.098	0.149	4.13	N/A		

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSS5959	LCSD5959
Count Date:	9/11/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.507	
Target Conc. (pCi/L, g, F):	4.740	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.372	
LCSD Counting Uncertainty (pCi/L, g, F):	0.792	
Numerical Performance Indicator:	-0.91	
Percent Recovery:	92.23%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Sample I.D.:	92492559006
Duplicate Sample I.D.:	92492559006DUP
Sample Result (pCi/L, g, F):	0.288
Sample Duplicate Result (pCi/L, g, F):	0.138
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.063
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.153
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	2.147
Duplicate RPD:	128.44%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail
% RPD Limit:	25%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

- Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

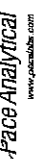
Comments:

This method blank result is below the reporting limit for this analysis and is acceptable.

***Batch must be re-prepped dup to unacceptable precision: N/A Wm 9/11/2020

Wm 9/11/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 9/10/2020
Worklist: 55959
Matrix: DW

Method Blank Assessment	
MB Sample ID	1994514
MB concentration:	0.206
M/B Counting Uncertainty:	0.098
MB MDC:	0.149
MB Numerical Performance Indicator:	4.13
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCS55959	LCS055959
Count Date:	9/11/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.045	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.507	
Target Conc. (pCi/L, g, F):	4.740	
Uncertainty (Calculated):	0.057	
Result (pCi/L, g, F):	4.372	
Uncertainty (pCi/L, g, F):	0.792	
Percent Recovery:	92.23%	
Status vs Numerical Indicator:	N/A	
Upper % Recovery Limits:	Pass	
Lower % Recovery Limits:	125%	
	75%	

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
	92492559007	92492559007DUP
Sample I.D.:	92492559007	
Duplicate Sample I.D.:	92492559007DUP	
Sample Result (pCi/L, g, F):	0.269	
Sample Duplicate Result (pCi/L, g, F):	0.118	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.234	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.201	
Are sample and/or duplicate results below RL?	See Below ##	
Duplicate Numerical Performance Indicator:	0.291	
Duplicate RPD:	13.77%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

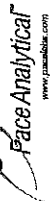
*The method blank result is below the reporting limit for this analysis and is acceptable.

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

AMA 9/11/2020

Quality Control Sample Performance Assessment



Analyst. Must Manually Enter All Fields. Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 9/11/2020
Worklist: 55960
Matrix: DW

Method Blank Assessment	
MB Sample ID	1904515
MB Concentration:	0.060
M/B Counting Uncertainty:	0.133
MB MDC:	0.265
MB Numerical Performance Indicator:	0.88
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCSD55960	LCSD55960
Count Date:	9/14/2020		
Spike I.D.:	19-033		
Decay Corrected Spike Concentration (pCi/mL):	24.044		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.505		
Target Conc. (pCi/L, g, F):	4.759		
Uncertainty (Calculated):	0.057		
Result (pCi/L, g, F):	5.322		
LCSD Counting Uncertainty (pCi/L, g, F):	0.689		
Numerical Performance Indicator:	1.60		
Percent Recovery:	111.84%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		
Upper % Recovery Limits:	125%		
Lower % Recovery Limits:	75%		

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCSD/LCSD in the space below:
Sample I.D.:	92493016012	92493016012
Duplicate Sample I.D.:	92493016012DUP	92493016012DUP
Sample Result (pCi/L, g, F):	4.731	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.626	
Sample Duplicate Result (pCi/L, g, F):	5.414	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.692	
Are sample and/or duplicate results below RL?	See Below #	
Duplicate Numerical Performance Indicator:	-1.435	
Duplicate RPD:	13.47%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	25%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Sample Spike Result Counting Uncertainty (pCi/L, g, F): Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Done 9/11/2020
van 9/14/2020

Quality Control Sample Performance Assessment



Analyst **Must Manually Enter All Fields Highlighted in Yellow.**

Test: Ra-226
Analyst: LAL
Date: 9/11/2020
Worklist: 55960
Matrix: DW

Method Blank Assessment	
MB Sample ID	1994515
MB concentration:	0.060
M/B Counting Uncertainty:	0.133
MB MDC:	0.265
MB Numerical Performance Indicator:	0.88
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/D (Y or N)?	N
Count Date:		9/14/2020	LCS/D55960
Spike I.D.:		19-033	
Decay Corrected Spike Concentration (pCi/mL):		24.044	
Volume Used (mL):		0.10	
Aliquot Volume (L, g, F):		0.505	
Target Conc. (pCi/L, g, F):		4.759	
Uncertainty (Calculated):		0.057	
Result (pCi/L, g, F):		5.322	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.589	
Numerical Performance Indicator:		1.60	
Percent Recovery:		111.84%	
Status vs Numerical Indicator:		N/A	
Status vs Recovery:		Pass	
Upper % Recovery Limits:		125%	
Lower % Recovery Limits:		75%	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
Sample I.D.:	92493016013	92493016013	
Duplicate Sample I.D.:	92493016013DUP		
Sample Result (pCi/L, g, F):	6.412		
Sample Duplicate Result (pCi/L, g, F):	0.759		
Sample Duplicate Result (pCi/L, g, F):	5.852		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.718		
Are sample and/or duplicate results below RL?		See Below #	
Duplicate Numerical Performance Indicator:	1.050		
Duplicate RPD:	9.13%		
Duplicate Status vs Numerical Indicator:	N/A		
Duplicate Status vs RPD:	Pass		
% RPD Limit:	25%		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

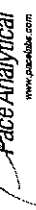
Comments:

Sample Matrix Spike Control Assessment		MS/MSD 1	MS/MSD 2
Sample Collection Date:			
Sample I.D.:			
Sample MS I.D.:			
Sample MSD I.D.:			
Spike I.D.:			
MS/MSD Decay Corrected Spike Concentration (pCi/mL):			
Spike Volume Used in MS (mL):			
Spike Volume Used in MSD (mL):			
MS Aliquot (L, g, F):			
MS Target Conc. (pCi/L, g, F):			
MSD Aliquot (L, g, F):			
MSD Target Conc. (pCi/L, g, F):			
MS Spike Uncertainty (calculated):			
MSD Spike Uncertainty (calculated):			
Sample Result:			
Sample Result Counting Uncertainty (pCi/L, g, F):			
Sample Matrix Spike Result:			
Sample Matrix Spike Duplicate Result:			
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):			
MS Numerical Performance Indicator:			
MSD Numerical Performance Indicator:			
MS Percent Recovery:			
MSD Percent Recovery:			
MS Status vs Numerical Indicator:			
MSD Status vs Numerical Indicator:			
MS Status vs Recovery:			
MSD Status vs Recovery:			
MS/MSD Upper % Recovery Limits:			
MS/MSD Lower % Recovery Limits:			

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	

Handwritten notes:
09/11/2020
LAL
9/14/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 9/9/2020
Worklist: 55954
Matrix: WT

Method Blank Assessment	
MB Sample ID	1994499
MB concentration:	0.357
MB 2 Sigma CSU:	0.355
MB MDC:	0.727
MB Numerical Performance Indicator:	1.97
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS55954	Y
Count Date:	9/15/2020	LCS55954
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.394	38.394
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.808	0.829
Target Conc. (pCi/L, g, F):	4.752	4.632
Uncertainty (Calculated):	0.233	0.227
Result (pCi/L, g, F):	5.042	4.838
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.200	1.149
Numerical Performance Indicator:	0.46	0.34
Percent Recovery:	106.10%	104.44%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	80%	80%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS55954
Duplicate Sample I.D.:	LCS55954
Sample Result (pCi/L, g, F):	5.042
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.200
Sample Duplicate Result (pCi/L, g, F):	4.838
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.149
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	0.241
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	1.57%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D.: Sample MS I.D.: Sample MSD I.D.: Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result: Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/ MSD Duplicate RPD: MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs RPD: % RPD Limit:

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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 9/10/2020
Worklist: 55955
Matrix: WT

Method Blank Assessment	
MB Sample ID	1994501
MB concentration:	0.749
MB 2 Sigma CSU:	0.397
MB MDC:	0.698
MB Numerical Performance Indicator:	3.70
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD55955	LCSD55955
Count Date:	9/16/2020	9/16/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.383	38.383
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.800	0.800
Target Conc. (pCi/L, g, F):	4.730	4.730
Uncertainty (Calculated):	0.232	0.235
Result (pCi/L, g, F):	5.530	6.376
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):	1.311	1.417
Numerical Performance Indicator:	1.18	2.16
Percent Recovery:	116.90%	132.93%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCSD55955
Duplicate Sample I.D.:	LCSD55955
Sample Result (pCi/L, g, F):	5.530
Sample Duplicate Result (pCi/L, g, F):	1.311
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	6.376
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.417
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.860
Duplicate Percent Recoveries:	12.84%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
MS/MSD Duplicate Status vs Numerical Indicator:
MS/MSD Duplicate Status vs RPD:
% RPD Limit:

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:
*The method blank result is below the reporting limit for this analysis and is acceptable.

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October 27, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCMANUS CCR
Pace Project No.: 92500314

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between October 14, 2020 and October 16, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCMANUS CCR

Pace Project No.: 92500314

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCMANUS CCR
Pace Project No.: 92500314

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92500314001	MCM-11	Water	10/12/20 15:15	10/14/20 09:20
92500314002	MCM-12	Water	10/12/20 15:46	10/14/20 09:20
92500314003	MCM-18	Water	10/12/20 15:40	10/14/20 09:20
92500314004	DUP-1	Water	10/12/20 00:00	10/14/20 09:20
92500314005	FBL101220	Water	10/12/20 16:39	10/14/20 09:20
92500314006	EQBL101220	Water	10/12/20 16:44	10/14/20 09:20
92500314007	MCM-01	Water	10/13/20 10:40	10/14/20 09:20
92500314008	MCM-02	Water	10/13/20 11:33	10/14/20 09:20
92500314009	MCM-04	Water	10/13/20 09:17	10/14/20 09:20
92500314010	MCM-14	Water	10/13/20 09:10	10/14/20 09:20
92500314011	MCM-15	Water	10/13/20 13:55	10/14/20 09:20
92500314012	MCM-16	Water	10/13/20 14:08	10/14/20 09:20
92500314013	MCM-17	Water	10/13/20 12:32	10/14/20 09:20
92500314014	MCM-19	Water	10/13/20 10:02	10/14/20 09:20
92500314015	MCM-20	Water	10/13/20 11:16	10/14/20 09:20
92500314016	DUP-2	Water	10/13/20 00:00	10/14/20 09:20
92500314017	FBL101320	Water	10/13/20 13:42	10/14/20 09:20
92500314018	EQBL101320	Water	10/13/20 13:50	10/14/20 09:20
92500314019	MCM-05	Water	10/15/20 13:48	10/16/20 10:30
92500314020	MCM-06	Water	10/14/20 16:52	10/16/20 10:30
92500314021	MCM-07	Water	10/14/20 14:42	10/16/20 10:30
92500314022	FBL101520	Water	10/15/20 17:14	10/16/20 10:30
92500314023	EQBL101520	Water	10/15/20 17:20	10/16/20 10:30
92500314024	DPZ-2	Water	10/15/20 16:00	10/16/20 10:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS CCR

Pace Project No.: 92500314

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92500314001	MCM-11	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314002	MCM-12	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314003	MCM-18	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314004	DUP-1	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314005	FBL101220	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314006	EQBL101220	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314007	MCM-01	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314008	MCM-02	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314009	MCM-04	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314010	MCM-14	EPA 6010D	DS	1	PASI-A

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS CCR

Pace Project No.: 92500314

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92500314011	MCM-15	EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
92500314012	MCM-16	SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
92500314013	MCM-17	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	RDT	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314014	MCM-19	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
92500314015	MCM-20	EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	RDT	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
92500314016	DUP-2	SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	RDT	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
92500314017	FBL101320	EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	RDT	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92500314018	EQBL101320	EPA 6010D	RDT	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
92500314019	MCM-05	EPA 6020B	JOR	8	PASI-A

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS CCR

Pace Project No.: 92500314

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92500314020	MCM-06	SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
92500314021	MCM-07	SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
92500314022	FBL101520	SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
92500314023	EQBL101520	SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
92500314024	DPZ-2	SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
		EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS CCR
Pace Project No.: 92500314

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500314001	MCM-11					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	5.0	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	2.8	mg/L	0.10	10/16/20 20:26	
EPA 6020B	Arsenic	0.0047J	mg/L	0.0050	10/15/20 15:04	
EPA 6020B	Barium	0.039	mg/L	0.010	10/15/20 15:04	
SM 2540C-2011	Total Dissolved Solids	94.0	mg/L	25.0	10/19/20 10:18	
EPA 300.0 Rev 2.1 1993	Chloride	13.9	mg/L	1.0	10/16/20 21:59	
EPA 300.0 Rev 2.1 1993	Sulfate	19.3	mg/L	1.0	10/16/20 21:59	
92500314002	MCM-12					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	6.35	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	6.1	mg/L	0.10	10/16/20 20:29	
EPA 6020B	Barium	0.10	mg/L	0.010	10/15/20 15:27	
EPA 6020B	Beryllium	0.0010J	mg/L	0.0030	10/15/20 15:27	
EPA 6020B	Boron	1.3	mg/L	0.50	10/15/20 15:27	
EPA 6020B	Lithium	0.011J	mg/L	0.030	10/15/20 15:27	
SM 2540C-2011	Total Dissolved Solids	1560	mg/L	125	10/19/20 10:18	
EPA 300.0 Rev 2.1 1993	Chloride	552	mg/L	12.0	10/17/20 16:09	
EPA 300.0 Rev 2.1 1993	Fluoride	1.2	mg/L	0.10	10/16/20 22:41	
92500314003	MCM-18					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	4.29	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	19.1	mg/L	0.10	10/16/20 20:33	
EPA 6020B	Barium	0.091	mg/L	0.010	10/15/20 15:31	
EPA 6020B	Beryllium	0.0041	mg/L	0.0030	10/15/20 15:31	
EPA 6020B	Boron	0.24J	mg/L	0.50	10/15/20 15:31	
SM 2540C-2011	Total Dissolved Solids	2920	mg/L	500	10/19/20 10:18	
EPA 300.0 Rev 2.1 1993	Chloride	1340	mg/L	20.0	10/17/20 16:23	
EPA 300.0 Rev 2.1 1993	Fluoride	0.34	mg/L	0.10	10/16/20 22:55	
EPA 300.0 Rev 2.1 1993	Sulfate	191	mg/L	20.0	10/17/20 16:23	
92500314004	DUP-1					
EPA 6010D	Calcium	2.8	mg/L	0.10	10/16/20 20:36	
EPA 6020B	Arsenic	0.0047J	mg/L	0.0050	10/15/20 15:35	
EPA 6020B	Barium	0.039	mg/L	0.010	10/15/20 15:35	
SM 2540C-2011	Total Dissolved Solids	106	mg/L	25.0	10/19/20 10:18	
EPA 300.0 Rev 2.1 1993	Chloride	14.1	mg/L	1.0	10/16/20 23:09	
EPA 300.0 Rev 2.1 1993	Sulfate	19.7	mg/L	1.0	10/16/20 23:09	
92500314007	MCM-01					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	5.69	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	9.8	mg/L	0.10	10/16/20 20:52	
EPA 6020B	Arsenic	0.0061	mg/L	0.0050	10/15/20 15:39	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS CCR

Pace Project No.: 92500314

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500314007	MCM-01					
EPA 6020B	Barium	0.060	mg/L	0.010	10/15/20 15:39	
SM 2540C-2011	Total Dissolved Solids	113	mg/L	25.0	10/19/20 18:28	
EPA 300.0 Rev 2.1 1993	Chloride	13.5	mg/L	1.0	10/17/20 00:19	
EPA 300.0 Rev 2.1 1993	Sulfate	32.3	mg/L	1.0	10/17/20 00:19	
92500314008	MCM-02					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	5.03	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	3.8	mg/L	0.10	10/16/20 20:56	
EPA 6020B	Barium	0.086	mg/L	0.010	10/15/20 15:46	
SM 2540C-2011	Total Dissolved Solids	118	mg/L	25.0	10/19/20 18:28	
EPA 300.0 Rev 2.1 1993	Chloride	25.7	mg/L	1.0	10/17/20 05:40	
EPA 300.0 Rev 2.1 1993	Sulfate	27.6	mg/L	1.0	10/17/20 05:40	
92500314009	MCM-04					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	5.25	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	12.5	mg/L	0.10	10/16/20 20:59	
EPA 6020B	Arsenic	0.0022J	mg/L	0.0050	10/15/20 15:50	
EPA 6020B	Barium	0.055	mg/L	0.010	10/15/20 15:50	
EPA 6020B	Cobalt	0.0063	mg/L	0.0050	10/15/20 15:50	
EPA 300.0 Rev 2.1 1993	Chloride	54.4	mg/L	1.0	10/17/20 05:53	
EPA 300.0 Rev 2.1 1993	Sulfate	92.3	mg/L	1.0	10/17/20 05:53	
92500314010	MCM-14					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	6.56	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	40.9	mg/L	0.10	10/18/20 05:38	
EPA 6020B	Barium	0.14	mg/L	0.010	10/15/20 15:54	
EPA 6020B	Boron	1.1	mg/L	0.50	10/15/20 15:54	
EPA 6020B	Lithium	0.046J	mg/L	0.030	10/15/20 15:54	
SM 2540C-2011	Total Dissolved Solids	15600	mg/L	2500	10/19/20 18:28	
EPA 300.0 Rev 2.1 1993	Chloride	6230	mg/L	90.0	10/17/20 16:37	
EPA 300.0 Rev 2.1 1993	Sulfate	695	mg/L	90.0	10/17/20 16:37	
92500314011	MCM-15					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	5.02	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	0.83	mg/L	0.10	10/16/20 21:05	
EPA 6020B	Arsenic	0.0042J	mg/L	0.0050	10/15/20 15:58	
EPA 6020B	Barium	0.024	mg/L	0.010	10/15/20 15:58	
SM 2540C-2011	Total Dissolved Solids	63.0	mg/L	25.0	10/19/20 18:28	
EPA 300.0 Rev 2.1 1993	Chloride	3.8	mg/L	1.0	10/17/20 06:21	
EPA 300.0 Rev 2.1 1993	Sulfate	7.6	mg/L	1.0	10/17/20 06:21	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS CCR

Pace Project No.: 92500314

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500314012	MCM-16					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	5.17	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	5.7	mg/L	0.10	10/16/20 21:09	
EPA 6020B	Barium	0.11	mg/L	0.010	10/15/20 16:02	
SM 2540C-2011	Total Dissolved Solids	115	mg/L	25.0	10/19/20 18:28	
EPA 300.0 Rev 2.1 1993	Chloride	23.3	mg/L	1.0	10/17/20 07:03	
EPA 300.0 Rev 2.1 1993	Sulfate	26.8	mg/L	1.0	10/17/20 07:03	
92500314013	MCM-17					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	6.34	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	86.4	mg/L	0.10	10/26/20 01:24	
EPA 6020B	Barium	0.14	mg/L	0.010	10/19/20 17:50	M6
EPA 6020B	Boron	1.8	mg/L	1.2	10/20/20 13:03	M6
EPA 6020B	Lithium	0.028J	mg/L	0.030	10/19/20 17:50	
SM 2540C-2011	Total Dissolved Solids	8750	mg/L	1250	10/19/20 18:31	
EPA 300.0 Rev 2.1 1993	Chloride	3980	mg/L	50.0	10/17/20 16:50	
EPA 300.0 Rev 2.1 1993	Sulfate	378	mg/L	50.0	10/17/20 16:50	
92500314014	MCM-19					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	5.04	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	125	mg/L	1.0	10/26/20 23:35	
EPA 6020B	Arsenic	0.0089	mg/L	0.0050	10/19/20 17:38	
EPA 6020B	Barium	0.12	mg/L	0.010	10/19/20 17:38	
EPA 6020B	Beryllium	0.015	mg/L	0.0030	10/19/20 17:38	
EPA 6020B	Boron	0.73	mg/L	0.50	10/20/20 13:07	
EPA 6020B	Lithium	0.022J	mg/L	0.030	10/19/20 17:38	
EPA 6020B	Selenium	0.0076J	mg/L	0.010	10/19/20 17:38	
SM 2540C-2011	Total Dissolved Solids	6600	mg/L	1250	10/19/20 18:31	
EPA 300.0 Rev 2.1 1993	Chloride	5260	mg/L	70.0	10/17/20 17:04	
EPA 300.0 Rev 2.1 1993	Sulfate	609	mg/L	70.0	10/17/20 17:04	
92500314015	MCM-20					
	Performed by	CUSTOME			10/27/20 13:56	
		R				
	pH	3.72	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	128	mg/L	1.0	10/26/20 23:45	
EPA 6020B	Arsenic	0.018	mg/L	0.0050	10/19/20 17:42	
EPA 6020B	Barium	0.12	mg/L	0.010	10/19/20 17:42	
EPA 6020B	Beryllium	0.017	mg/L	0.0030	10/19/20 17:42	
EPA 6020B	Boron	1.1	mg/L	0.50	10/20/20 13:11	
EPA 6020B	Cobalt	0.032	mg/L	0.0050	10/19/20 17:42	
EPA 6020B	Lithium	0.025J	mg/L	0.030	10/19/20 17:42	
EPA 6020B	Selenium	0.0056J	mg/L	0.010	10/19/20 17:42	
SM 2540C-2011	Total Dissolved Solids	13900	mg/L	2500	10/19/20 18:32	
EPA 300.0 Rev 2.1 1993	Chloride	5980	mg/L	100	10/17/20 17:18	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS CCR

Pace Project No.: 92500314

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92500314015	MCM-20					
EPA 300.0 Rev 2.1 1993	Sulfate	638	mg/L	100	10/17/20 17:18	
92500314016	DUP-2					
EPA 6010D	Calcium	5.7	mg/L	0.10	10/26/20 01:34	
EPA 6020B	Barium	0.11	mg/L	0.010	10/19/20 17:46	
SM 2540C-2011	Total Dissolved Solids	115	mg/L	25.0	10/19/20 18:32	
EPA 300.0 Rev 2.1 1993	Chloride	24.0	mg/L	1.0	10/17/20 09:08	
EPA 300.0 Rev 2.1 1993	Sulfate	27.4	mg/L	1.0	10/17/20 09:08	
92500314019	MCM-05					
	Performed by	CUSTOMER			10/27/20 13:56	
	pH	6.53	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	69.1	mg/L	2.0	10/20/20 08:01	
EPA 6020B	Arsenic	0.024	mg/L	0.0050	10/19/20 20:58	
EPA 6020B	Barium	0.45	mg/L	0.010	10/19/20 20:58	
EPA 6020B	Boron	0.61	mg/L	0.50	10/20/20 10:50	
EPA 6020B	Cobalt	0.0019J	mg/L	0.0050	10/19/20 20:58	
EPA 6020B	Lithium	0.57	mg/L	0.030	10/19/20 20:58	
EPA 6020B	Selenium	0.0028J	mg/L	0.010	10/19/20 20:58	
SM 2540C-2011	Total Dissolved Solids	5100	mg/L	2500	10/20/20 12:09	
EPA 300.0 Rev 2.1 1993	Chloride	1660	mg/L	100	10/21/20 11:22	
EPA 300.0 Rev 2.1 1993	Fluoride	0.22	mg/L	0.10	10/21/20 02:29	
EPA 300.0 Rev 2.1 1993	Sulfate	147	mg/L	100	10/21/20 11:22	
92500314020	MCM-06					
	Performed by	CUSTOMER			10/27/20 13:56	
	pH	6.93	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	245	mg/L	2.0	10/20/20 08:05	
EPA 6020B	Arsenic	0.43	mg/L	0.0050	10/21/20 13:06	
EPA 6020B	Barium	0.14	mg/L	0.010	10/19/20 21:02	
EPA 6020B	Boron	1.5	mg/L	0.75	10/20/20 11:27	
EPA 6020B	Lithium	0.11	mg/L	0.030	10/19/20 21:02	
SM 2540C-2011	Total Dissolved Solids	15200	mg/L	2500	10/20/20 12:08	
EPA 300.0 Rev 2.1 1993	Chloride	6630	mg/L	100	10/21/20 11:35	
EPA 300.0 Rev 2.1 1993	Sulfate	510	mg/L	100	10/21/20 11:35	
92500314021	MCM-07					
	Performed by	CUSTOMER			10/27/20 13:56	
	pH	6.32	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	207	mg/L	2.0	10/20/20 08:08	
EPA 6020B	Arsenic	0.013	mg/L	0.0050	10/19/20 21:06	
EPA 6020B	Barium	0.19	mg/L	0.010	10/19/20 21:06	
EPA 6020B	Boron	1.8	mg/L	0.75	10/20/20 11:31	
EPA 6020B	Lithium	0.039J	mg/L	0.030	10/19/20 21:06	
SM 2540C-2011	Total Dissolved Solids	18400	mg/L	2500	10/20/20 12:08	
EPA 300.0 Rev 2.1 1993	Chloride	7910	mg/L	100	10/21/20 11:49	
EPA 300.0 Rev 2.1 1993	Sulfate	904	mg/L	100	10/21/20 11:49	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS CCR

Pace Project No.: 92500314

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500314022	FBL101520					
EPA 300.0 Rev 2.1 1993	Chloride	9.5	mg/L	1.0	10/21/20 03:25	
EPA 300.0 Rev 2.1 1993	Sulfate	0.96J	mg/L	1.0	10/21/20 03:25	
92500314024	DPZ-2					
	Performed by	CUSTOMER			10/27/20 13:56	
	pH	7.08	Std. Units		10/27/20 13:56	
EPA 6010D	Calcium	194	mg/L	2.0	10/20/20 08:18	
EPA 6020B	Arsenic	0.021	mg/L	0.0050	10/19/20 21:18	
EPA 6020B	Barium	0.071	mg/L	0.010	10/19/20 21:18	
EPA 6020B	Boron	2.1	mg/L	1.2	10/20/20 11:35	
EPA 6020B	Lithium	0.093	mg/L	0.030	10/19/20 21:18	
SM 2540C-2011	Total Dissolved Solids	19300	mg/L	2500	10/20/20 12:09	
EPA 300.0 Rev 2.1 1993	Fluoride	0.11	mg/L	0.10	10/20/20 20:43	
EPA 300.0 Rev 2.1 1993	Sulfate	1060	mg/L	20.0	10/21/20 04:54	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: MCM-11		Lab ID: 92500314001		Collected: 10/12/20 15:15		Received: 10/14/20 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	5.0	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	2.8	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 20:26	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0047J	mg/L	0.0050	0.0017	20	10/15/20 01:51	10/15/20 15:04	7440-38-2	
Barium	0.039	mg/L	0.010	0.0043	20	10/15/20 01:51	10/15/20 15:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/15/20 01:51	10/15/20 15:04	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	10/15/20 01:51	10/15/20 15:04	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/15/20 01:51	10/15/20 15:04	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/15/20 01:51	10/15/20 15:04	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	10/15/20 01:51	10/15/20 15:04	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/15/20 01:51	10/15/20 15:04	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	94.0	mg/L	25.0	25.0	1		10/19/20 10:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	13.9	mg/L	1.0	0.60	1		10/16/20 21:59	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/16/20 21:59	16984-48-8	
Sulfate	19.3	mg/L	1.0	0.50	1		10/16/20 21:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: MCM-12		Lab ID: 92500314002		Collected: 10/12/20 15:46		Received: 10/14/20 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	6.35	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	6.1	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 20:29	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.0017	20	10/15/20 01:51	10/15/20 15:27	7440-38-2	
Barium	0.10	mg/L	0.010	0.0043	20	10/15/20 01:51	10/15/20 15:27	7440-39-3	
Beryllium	0.0010J	mg/L	0.0030	0.0010	20	10/15/20 01:51	10/15/20 15:27	7440-41-7	
Boron	1.3	mg/L	0.50	0.12	20	10/15/20 01:51	10/15/20 15:27	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/15/20 01:51	10/15/20 15:27	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/15/20 01:51	10/15/20 15:27	7439-92-1	
Lithium	0.011J	mg/L	0.030	0.0078	20	10/15/20 01:51	10/15/20 15:27	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/15/20 01:51	10/15/20 15:27	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	1560	mg/L	125	125	1		10/19/20 10:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	552	mg/L	12.0	7.2	12		10/17/20 16:09	16887-00-6	
Fluoride	1.2	mg/L	0.10	0.050	1		10/16/20 22:41	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/16/20 22:41	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR
Pace Project No.: 92500314

Sample: MCM-18		Lab ID: 92500314003		Collected: 10/12/20 15:40		Received: 10/14/20 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	4.29	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	19.1	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 20:33	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.0017	20	10/15/20 01:51	10/15/20 15:31	7440-38-2	
Barium	0.091	mg/L	0.010	0.0043	20	10/15/20 01:51	10/15/20 15:31	7440-39-3	
Beryllium	0.0041	mg/L	0.0030	0.0010	20	10/15/20 01:51	10/15/20 15:31	7440-41-7	
Boron	0.24J	mg/L	0.50	0.12	20	10/15/20 01:51	10/15/20 15:31	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/15/20 01:51	10/15/20 15:31	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/15/20 01:51	10/15/20 15:31	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	10/15/20 01:51	10/15/20 15:31	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/15/20 01:51	10/15/20 15:31	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	2920	mg/L	500	500	1		10/19/20 10:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1340	mg/L	20.0	12.0	20		10/17/20 16:23	16887-00-6	
Fluoride	0.34	mg/L	0.10	0.050	1		10/16/20 22:55	16984-48-8	
Sulfate	191	mg/L	20.0	10.0	20		10/17/20 16:23	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: DUP-1		Lab ID: 92500314004		Collected: 10/12/20 00:00	Received: 10/14/20 09:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Calcium	2.8	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 20:36	7440-70-2	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0047J	mg/L	0.0050	0.0017	20	10/15/20 01:51	10/15/20 15:35	7440-38-2	
Barium	0.039	mg/L	0.010	0.0043	20	10/15/20 01:51	10/15/20 15:35	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/15/20 01:51	10/15/20 15:35	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	10/15/20 01:51	10/15/20 15:35	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/15/20 01:51	10/15/20 15:35	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/15/20 01:51	10/15/20 15:35	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	10/15/20 01:51	10/15/20 15:35	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/15/20 01:51	10/15/20 15:35	7782-49-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville							
Total Dissolved Solids	106	mg/L	25.0	25.0	1		10/19/20 10:18		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	14.1	mg/L	1.0	0.60	1		10/16/20 23:09	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/16/20 23:09	16984-48-8	
Sulfate	19.7	mg/L	1.0	0.50	1		10/16/20 23:09	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: FBL101220		Lab ID: 92500314005		Collected: 10/12/20 16:39	Received: 10/14/20 09:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Calcium	ND	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 20:39	7440-70-2	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	ND	mg/L	0.0050	0.000087	1	10/15/20 01:51	10/15/20 14:56	7440-38-2	
Barium	ND	mg/L	0.010	0.00021	1	10/15/20 01:51	10/15/20 14:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/15/20 01:51	10/15/20 14:56	7440-41-7	
Boron	ND	mg/L	0.025	0.0062	1	10/15/20 01:51	10/15/20 14:56	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.000050	1	10/15/20 01:51	10/15/20 14:56	7440-48-4	
Lead	ND	mg/L	0.0050	0.000077	1	10/15/20 01:51	10/15/20 14:56	7439-92-1	
Lithium	ND	mg/L	0.030	0.00039	1	10/15/20 01:51	10/15/20 14:56	7439-93-2	
Selenium	ND	mg/L	0.010	0.000061	1	10/15/20 01:51	10/15/20 14:56	7782-49-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville							
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		10/19/20 10:18		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	ND	mg/L	1.0	0.60	1		10/16/20 23:23	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/16/20 23:23	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/16/20 23:23	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: EQBL101220		Lab ID: 92500314006		Collected: 10/12/20 16:44	Received: 10/14/20 09:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Calcium	ND	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 20:49	7440-70-2	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	ND	mg/L	0.0050	0.000087	1	10/15/20 01:51	10/15/20 15:00	7440-38-2	
Barium	ND	mg/L	0.010	0.00021	1	10/15/20 01:51	10/15/20 15:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/15/20 01:51	10/15/20 15:00	7440-41-7	
Boron	ND	mg/L	0.025	0.0062	1	10/15/20 01:51	10/15/20 15:00	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.000050	1	10/15/20 01:51	10/15/20 15:00	7440-48-4	
Lead	ND	mg/L	0.0050	0.000077	1	10/15/20 01:51	10/15/20 15:00	7439-92-1	
Lithium	ND	mg/L	0.030	0.00039	1	10/15/20 01:51	10/15/20 15:00	7439-93-2	
Selenium	ND	mg/L	0.010	0.000061	1	10/15/20 01:51	10/15/20 15:00	7782-49-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville							
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		10/19/20 10:19		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	ND	mg/L	1.0	0.60	1		10/17/20 00:05	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 00:05	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/17/20 00:05	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR
 Pace Project No.: 92500314

Sample: MCM-01		Lab ID: 92500314007		Collected: 10/13/20 10:40	Received: 10/14/20 09:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	5.69	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	9.8	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 20:52	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0061	mg/L	0.0050	0.0017	20	10/15/20 01:51	10/15/20 15:39	7440-38-2	
Barium	0.060	mg/L	0.010	0.0043	20	10/15/20 01:51	10/15/20 15:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/15/20 01:51	10/15/20 15:39	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	10/15/20 01:51	10/15/20 15:39	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/15/20 01:51	10/15/20 15:39	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/15/20 01:51	10/15/20 15:39	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	10/15/20 01:51	10/15/20 15:39	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/15/20 01:51	10/15/20 15:39	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	113	mg/L	25.0	25.0	1		10/19/20 18:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	13.5	mg/L	1.0	0.60	1		10/17/20 00:19	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 00:19	16984-48-8	
Sulfate	32.3	mg/L	1.0	0.50	1		10/17/20 00:19	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR
 Pace Project No.: 92500314

Sample: MCM-02		Lab ID: 92500314008		Collected: 10/13/20 11:33	Received: 10/14/20 09:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	5.03	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	3.8	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 20:56	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.0017	20	10/15/20 01:51	10/15/20 15:46	7440-38-2	
Barium	0.086	mg/L	0.010	0.0043	20	10/15/20 01:51	10/15/20 15:46	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/15/20 01:51	10/15/20 15:46	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	10/15/20 01:51	10/15/20 15:46	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/15/20 01:51	10/15/20 15:46	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/15/20 01:51	10/15/20 15:46	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	10/15/20 01:51	10/15/20 15:46	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/15/20 01:51	10/15/20 15:46	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	118	mg/L	25.0	25.0	1		10/19/20 18:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	25.7	mg/L	1.0	0.60	1		10/17/20 05:40	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 05:40	16984-48-8	
Sulfate	27.6	mg/L	1.0	0.50	1		10/17/20 05:40	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: MCM-04		Lab ID: 92500314009		Collected: 10/13/20 09:17	Received: 10/14/20 09:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	5.25	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	12.5	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 20:59	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0022J	mg/L	0.0050	0.0017	20	10/15/20 01:51	10/15/20 15:50	7440-38-2	
Barium	0.055	mg/L	0.010	0.0043	20	10/15/20 01:51	10/15/20 15:50	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/15/20 01:51	10/15/20 15:50	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	10/15/20 01:51	10/15/20 15:50	7440-42-8	
Cobalt	0.0063	mg/L	0.0050	0.0010	20	10/15/20 01:51	10/15/20 15:50	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/15/20 01:51	10/15/20 15:50	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	10/15/20 01:51	10/15/20 15:50	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/15/20 01:51	10/15/20 15:50	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		10/19/20 18:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	54.4	mg/L	1.0	0.60	1		10/17/20 05:53	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 05:53	16984-48-8	
Sulfate	92.3	mg/L	1.0	0.50	1		10/17/20 05:53	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: **MCM-14** Lab ID: **92500314010** Collected: 10/13/20 09:10 Received: 10/14/20 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	6.56	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	40.9	mg/L	0.10	0.094	1	10/15/20 02:18	10/18/20 05:38	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.0017	20	10/15/20 01:51	10/15/20 15:54	7440-38-2	
Barium	0.14	mg/L	0.010	0.0043	20	10/15/20 01:51	10/15/20 15:54	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/15/20 01:51	10/15/20 15:54	7440-41-7	
Boron	1.1	mg/L	0.50	0.12	20	10/15/20 01:51	10/15/20 15:54	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/15/20 01:51	10/15/20 15:54	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/15/20 01:51	10/15/20 15:54	7439-92-1	
Lithium	0.046J	mg/L	0.030	0.0078	20	10/15/20 01:51	10/15/20 15:54	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/15/20 01:51	10/15/20 15:54	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	15600	mg/L	2500	2500	1		10/19/20 18:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6230	mg/L	90.0	54.0	90		10/17/20 16:37	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 06:07	16984-48-8	
Sulfate	695	mg/L	90.0	45.0	90		10/17/20 16:37	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: MCM-15 **Lab ID: 92500314011** Collected: 10/13/20 13:55 Received: 10/14/20 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	5.02	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	0.83	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 21:05	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0042J	mg/L	0.0050	0.0017	20	10/15/20 01:51	10/15/20 15:58	7440-38-2	
Barium	0.024	mg/L	0.010	0.0043	20	10/15/20 01:51	10/15/20 15:58	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/15/20 01:51	10/15/20 15:58	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	10/15/20 01:51	10/15/20 15:58	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/15/20 01:51	10/15/20 15:58	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/15/20 01:51	10/15/20 15:58	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	10/15/20 01:51	10/15/20 15:58	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/15/20 01:51	10/15/20 15:58	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	63.0	mg/L	25.0	25.0	1		10/19/20 18:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	3.8	mg/L	1.0	0.60	1		10/17/20 06:21	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 06:21	16984-48-8	
Sulfate	7.6	mg/L	1.0	0.50	1		10/17/20 06:21	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: MCM-16		Lab ID: 92500314012		Collected: 10/13/20 14:08		Received: 10/14/20 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	5.17	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	5.7	mg/L	0.10	0.094	1	10/15/20 02:18	10/16/20 21:09	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.0017	20	10/15/20 01:51	10/15/20 16:02	7440-38-2	
Barium	0.11	mg/L	0.010	0.0043	20	10/15/20 01:51	10/15/20 16:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/15/20 01:51	10/15/20 16:02	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	10/15/20 01:51	10/15/20 16:02	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/15/20 01:51	10/15/20 16:02	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/15/20 01:51	10/15/20 16:02	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	10/15/20 01:51	10/15/20 16:02	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/15/20 01:51	10/15/20 16:02	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	115	mg/L	25.0	25.0	1		10/19/20 18:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	23.3	mg/L	1.0	0.60	1		10/17/20 07:03	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 07:03	16984-48-8	
Sulfate	26.8	mg/L	1.0	0.50	1		10/17/20 07:03	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: MCM-17		Lab ID: 92500314013		Collected: 10/13/20 12:32		Received: 10/14/20 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	6.34	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	86.4	mg/L	0.10	0.094	1	10/24/20 02:35	10/26/20 01:24	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.0017	20	10/16/20 01:08	10/19/20 17:50	7440-38-2	
Barium	0.14	mg/L	0.010	0.0043	20	10/16/20 01:08	10/19/20 17:50	7440-39-3	M6
Beryllium	ND	mg/L	0.0030	0.0010	20	10/16/20 01:08	10/19/20 17:50	7440-41-7	
Boron	1.8	mg/L	1.2	0.31	50	10/16/20 01:08	10/20/20 13:03	7440-42-8	M6
Cobalt	ND	mg/L	0.0050	0.0010	20	10/16/20 01:08	10/19/20 17:50	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/16/20 01:08	10/19/20 17:50	7439-92-1	
Lithium	0.028J	mg/L	0.030	0.0078	20	10/16/20 01:08	10/19/20 17:50	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/16/20 01:08	10/19/20 17:50	7782-49-2	M6
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	8750	mg/L	1250	1250	1		10/19/20 18:31		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	3980	mg/L	50.0	30.0	50		10/17/20 16:50	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 07:17	16984-48-8	
Sulfate	378	mg/L	50.0	25.0	50		10/17/20 16:50	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR
Pace Project No.: 92500314

Sample: MCM-19		Lab ID: 92500314014		Collected: 10/13/20 10:02		Received: 10/14/20 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	5.04	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	125	mg/L	1.0	0.94	10	10/24/20 02:35	10/26/20 23:35	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0089	mg/L	0.0050	0.0017	20	10/16/20 01:08	10/19/20 17:38	7440-38-2	
Barium	0.12	mg/L	0.010	0.0043	20	10/16/20 01:08	10/19/20 17:38	7440-39-3	
Beryllium	0.015	mg/L	0.0030	0.0010	20	10/16/20 01:08	10/19/20 17:38	7440-41-7	
Boron	0.73	mg/L	0.50	0.12	20	10/16/20 01:08	10/20/20 13:07	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/16/20 01:08	10/19/20 17:38	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/16/20 01:08	10/19/20 17:38	7439-92-1	
Lithium	0.022J	mg/L	0.030	0.0078	20	10/16/20 01:08	10/19/20 17:38	7439-93-2	
Selenium	0.0076J	mg/L	0.010	0.0012	20	10/16/20 01:08	10/19/20 17:38	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	6600	mg/L	1250	1250	1		10/19/20 18:31		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	5260	mg/L	70.0	42.0	70		10/17/20 17:04	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 07:31	16984-48-8	
Sulfate	609	mg/L	70.0	35.0	70		10/17/20 17:04	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR
 Pace Project No.: 92500314

Sample: MCM-20		Lab ID: 92500314015		Collected: 10/13/20 11:16		Received: 10/14/20 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	3.72	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	128	mg/L	1.0	0.94	10	10/24/20 02:35	10/26/20 23:45	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.018	mg/L	0.0050	0.0017	20	10/16/20 01:08	10/19/20 17:42	7440-38-2	
Barium	0.12	mg/L	0.010	0.0043	20	10/16/20 01:08	10/19/20 17:42	7440-39-3	
Beryllium	0.017	mg/L	0.0030	0.0010	20	10/16/20 01:08	10/19/20 17:42	7440-41-7	
Boron	1.1	mg/L	0.50	0.12	20	10/16/20 01:08	10/20/20 13:11	7440-42-8	
Cobalt	0.032	mg/L	0.0050	0.0010	20	10/16/20 01:08	10/19/20 17:42	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/16/20 01:08	10/19/20 17:42	7439-92-1	
Lithium	0.025J	mg/L	0.030	0.0078	20	10/16/20 01:08	10/19/20 17:42	7439-93-2	
Selenium	0.0056J	mg/L	0.010	0.0012	20	10/16/20 01:08	10/19/20 17:42	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	13900	mg/L	2500	2500	1		10/19/20 18:32		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	5980	mg/L	100	60.0	100		10/17/20 17:18	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 07:45	16984-48-8	
Sulfate	638	mg/L	100	50.0	100		10/17/20 17:18	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: DUP-2		Lab ID: 92500314016		Collected: 10/13/20 00:00	Received: 10/14/20 09:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Calcium	5.7	mg/L	0.10	0.094	1	10/24/20 02:35	10/26/20 01:34	7440-70-2	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	ND	mg/L	0.0050	0.0017	20	10/16/20 01:08	10/19/20 17:46	7440-38-2	
Barium	0.11	mg/L	0.010	0.0043	20	10/16/20 01:08	10/19/20 17:46	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/16/20 01:08	10/19/20 17:46	7440-41-7	
Boron	ND	mg/L	0.50	0.12	20	10/16/20 01:08	10/20/20 13:15	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/16/20 01:08	10/19/20 17:46	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/16/20 01:08	10/19/20 17:46	7439-92-1	
Lithium	ND	mg/L	0.030	0.0078	20	10/16/20 01:08	10/19/20 17:46	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/16/20 01:08	10/19/20 17:46	7782-49-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville							
Total Dissolved Solids	115	mg/L	25.0	25.0	1		10/19/20 18:32		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	24.0	mg/L	1.0	0.60	1		10/17/20 09:08	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 09:08	16984-48-8	
Sulfate	27.4	mg/L	1.0	0.50	1		10/17/20 09:08	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: FBL101320		Lab ID: 92500314017		Collected: 10/13/20 13:42	Received: 10/14/20 09:20	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Calcium	ND	mg/L	0.10	0.094	1	10/24/20 02:35	10/26/20 01:37	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	ND	mg/L	0.0050	0.000087	1	10/16/20 01:08	10/19/20 15:23	7440-38-2		
Barium	ND	mg/L	0.010	0.00021	1	10/16/20 01:08	10/19/20 15:23	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/16/20 01:08	10/19/20 15:23	7440-41-7		
Boron	ND	mg/L	0.025	0.0062	1	10/16/20 01:08	10/20/20 13:26	7440-42-8		
Cobalt	ND	mg/L	0.0050	0.000050	1	10/16/20 01:08	10/19/20 15:23	7440-48-4		
Lead	ND	mg/L	0.0050	0.000077	1	10/16/20 01:08	10/19/20 15:23	7439-92-1		
Lithium	ND	mg/L	0.030	0.00039	1	10/16/20 01:08	10/19/20 15:23	7439-93-2		
Selenium	ND	mg/L	0.010	0.000061	1	10/16/20 01:08	10/19/20 15:23	7782-49-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville								
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		10/19/20 18:32			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		10/17/20 09:50	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 09:50	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		10/17/20 09:50	14808-79-8		

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: EQBL101320		Lab ID: 92500314018		Collected: 10/13/20 13:50	Received: 10/14/20 09:20	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Calcium	ND	mg/L	0.10	0.094	1	10/24/20 02:35	10/26/20 01:46	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	ND	mg/L	0.0050	0.000087	1	10/16/20 01:08	10/19/20 15:27	7440-38-2		
Barium	ND	mg/L	0.010	0.00021	1	10/16/20 01:08	10/19/20 15:27	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/16/20 01:08	10/19/20 15:27	7440-41-7		
Boron	ND	mg/L	0.025	0.0062	1	10/16/20 01:08	10/20/20 13:30	7440-42-8		
Cobalt	ND	mg/L	0.0050	0.000050	1	10/16/20 01:08	10/19/20 15:27	7440-48-4		
Lead	ND	mg/L	0.0050	0.000077	1	10/16/20 01:08	10/19/20 15:27	7439-92-1		
Lithium	ND	mg/L	0.030	0.00039	1	10/16/20 01:08	10/19/20 15:27	7439-93-2		
Selenium	ND	mg/L	0.010	0.000061	1	10/16/20 01:08	10/19/20 15:27	7782-49-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville								
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		10/19/20 18:32			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		10/17/20 10:32	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		10/17/20 10:32	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		10/17/20 10:32	14808-79-8		

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: MCM-05 **Lab ID: 92500314019** Collected: 10/15/20 13:48 Received: 10/16/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	6.53	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	69.1	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 08:01	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.024	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 20:58	7440-38-2	
Barium	0.45	mg/L	0.010	0.0043	20	10/17/20 00:41	10/19/20 20:58	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/17/20 00:41	10/19/20 20:58	7440-41-7	
Boron	0.61	mg/L	0.50	0.12	20	10/17/20 00:41	10/20/20 10:50	7440-42-8	
Cobalt	0.0019J	mg/L	0.0050	0.0010	20	10/17/20 00:41	10/19/20 20:58	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/17/20 00:41	10/19/20 20:58	7439-92-1	
Lithium	0.57	mg/L	0.030	0.0078	20	10/17/20 00:41	10/19/20 20:58	7439-93-2	
Selenium	0.0028J	mg/L	0.010	0.0012	20	10/17/20 00:41	10/19/20 20:58	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	5100	mg/L	2500	2500	1		10/20/20 12:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1660	mg/L	100	60.0	100		10/21/20 11:22	16887-00-6	
Fluoride	0.22	mg/L	0.10	0.050	1		10/21/20 02:29	16984-48-8	
Sulfate	147	mg/L	100	50.0	100		10/21/20 11:22	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: MCM-06		Lab ID: 92500314020		Collected: 10/14/20 16:52		Received: 10/16/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	6.93	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	245	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 08:05	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.43	mg/L	0.0050	0.0026	30	10/17/20 00:41	10/21/20 13:06	7440-38-2	
Barium	0.14	mg/L	0.010	0.0043	20	10/17/20 00:41	10/19/20 21:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/17/20 00:41	10/19/20 21:02	7440-41-7	
Boron	1.5	mg/L	0.75	0.19	30	10/17/20 00:41	10/20/20 11:27	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/17/20 00:41	10/19/20 21:02	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/17/20 00:41	10/19/20 21:02	7439-92-1	
Lithium	0.11	mg/L	0.030	0.0078	20	10/17/20 00:41	10/19/20 21:02	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/17/20 00:41	10/19/20 21:02	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	15200	mg/L	2500	2500	1		10/20/20 12:08		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6630	mg/L	100	60.0	100		10/21/20 11:35	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/21/20 02:43	16984-48-8	
Sulfate	510	mg/L	100	50.0	100		10/21/20 11:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: MCM-07		Lab ID: 92500314021		Collected: 10/14/20 14:42		Received: 10/16/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	6.32	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	207	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 08:08	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.013	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 21:06	7440-38-2	
Barium	0.19	mg/L	0.010	0.0043	20	10/17/20 00:41	10/19/20 21:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/17/20 00:41	10/19/20 21:06	7440-41-7	
Boron	1.8	mg/L	0.75	0.19	30	10/17/20 00:41	10/20/20 11:31	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/17/20 00:41	10/19/20 21:06	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/17/20 00:41	10/19/20 21:06	7439-92-1	
Lithium	0.039J	mg/L	0.030	0.0078	20	10/17/20 00:41	10/19/20 21:06	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/17/20 00:41	10/19/20 21:06	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	18400	mg/L	2500	2500	1		10/20/20 12:08		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	7910	mg/L	100	60.0	100		10/21/20 11:49	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/21/20 02:57	16984-48-8	
Sulfate	904	mg/L	100	50.0	100		10/21/20 11:49	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: FBL101520		Lab ID: 92500314022		Collected: 10/15/20 17:14	Received: 10/16/20 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Calcium	ND	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 08:11	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	ND	mg/L	0.0050	0.000087	1	10/17/20 00:41	10/19/20 21:10	7440-38-2		
Barium	ND	mg/L	0.010	0.00021	1	10/17/20 00:41	10/19/20 21:10	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	10/17/20 00:41	10/19/20 21:10	7440-41-7		
Boron	ND	mg/L	0.025	0.0062	1	10/17/20 00:41	10/20/20 10:42	7440-42-8		
Cobalt	ND	mg/L	0.0050	0.000050	1	10/17/20 00:41	10/19/20 21:10	7440-48-4		
Lead	ND	mg/L	0.0050	0.000077	1	10/17/20 00:41	10/19/20 21:10	7439-92-1		
Lithium	ND	mg/L	0.030	0.00039	1	10/17/20 00:41	10/19/20 21:10	7439-93-2		
Selenium	ND	mg/L	0.010	0.000061	1	10/17/20 00:41	10/19/20 21:10	7782-49-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville								
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		10/20/20 12:09			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	9.5	mg/L	1.0	0.60	1		10/21/20 03:25	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		10/21/20 03:25	16984-48-8		
Sulfate	0.96J	mg/L	1.0	0.50	1		10/21/20 03:25	14808-79-8		

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: EQBL101520		Lab ID: 92500314023		Collected: 10/15/20 17:20		Received: 10/16/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Calcium	ND	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 08:15	7440-70-2	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	ND	mg/L	0.0050	0.000087	1	10/17/20 00:41	10/19/20 21:14	7440-38-2	
Barium	ND	mg/L	0.010	0.00021	1	10/17/20 00:41	10/19/20 21:14	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/17/20 00:41	10/19/20 21:14	7440-41-7	
Boron	ND	mg/L	0.025	0.0062	1	10/17/20 00:41	10/20/20 10:46	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.000050	1	10/17/20 00:41	10/19/20 21:14	7440-48-4	
Lead	ND	mg/L	0.0050	0.000077	1	10/17/20 00:41	10/19/20 21:14	7439-92-1	
Lithium	ND	mg/L	0.030	0.00039	1	10/17/20 00:41	10/19/20 21:14	7439-93-2	
Selenium	ND	mg/L	0.010	0.000061	1	10/17/20 00:41	10/19/20 21:14	7782-49-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville							
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		10/20/20 12:09		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	ND	mg/L	1.0	0.60	1		10/21/20 03:39	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/21/20 03:39	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/21/20 03:39	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS CCR

Pace Project No.: 92500314

Sample: DPZ-2		Lab ID: 92500314024		Collected: 10/15/20 16:00		Received: 10/16/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:56		
pH	7.08	Std. Units			1		10/27/20 13:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	194	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 08:18	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.021	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 21:18	7440-38-2	
Barium	0.071	mg/L	0.010	0.0043	20	10/17/20 00:41	10/19/20 21:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	10/17/20 00:41	10/19/20 21:18	7440-41-7	
Boron	2.1	mg/L	1.2	0.31	50	10/17/20 00:41	10/20/20 11:35	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	10/17/20 00:41	10/19/20 21:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	10/17/20 00:41	10/19/20 21:18	7439-92-1	
Lithium	0.093	mg/L	0.030	0.0078	20	10/17/20 00:41	10/19/20 21:18	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	10/17/20 00:41	10/19/20 21:18	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19300	mg/L	2500	2500	1		10/20/20 12:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	ND	mg/L	1.0	0.60	1		10/20/20 20:43	16887-00-6	
Fluoride	0.11	mg/L	0.10	0.050	1		10/20/20 20:43	16984-48-8	
Sulfate	1060	mg/L	20.0	10.0	20		10/21/20 04:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS CCR

Pace Project No.: 92500314

QC Batch:	573329	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500314001, 92500314002, 92500314003, 92500314004, 92500314005, 92500314006, 92500314007, 92500314008, 92500314009, 92500314010, 92500314011, 92500314012

METHOD BLANK: 3035864 Matrix: Water

Associated Lab Samples: 92500314001, 92500314002, 92500314003, 92500314004, 92500314005, 92500314006, 92500314007, 92500314008, 92500314009, 92500314010, 92500314011, 92500314012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	10/16/20 19:34	

LABORATORY CONTROL SAMPLE: 3035865

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	4.5	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3035866 3035867

Parameter	Units	92500311015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	3420 ug/L	5	5	8.3	8.2	97	96	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS CCR
Pace Project No.: 92500314

QC Batch: 573915 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500314019, 92500314020, 92500314021, 92500314022, 92500314023, 92500314024

METHOD BLANK: 3038654 Matrix: Water
Associated Lab Samples: 92500314019, 92500314020, 92500314021, 92500314022, 92500314023, 92500314024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	10/20/20 06:49	

LABORATORY CONTROL SAMPLE: 3038655

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	4.7	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3038656 3038657

Parameter	Units	3038656		3038657		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92500569009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	256	5	5	255	243	-16	-248	75-125	5	20 M6

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QUALITY CONTROL DATA

Project: MCMANUS CCR
Pace Project No.: 92500314

QC Batch: 575519 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500314013, 92500314014, 92500314015, 92500314016, 92500314017, 92500314018

METHOD BLANK: 3046801 Matrix: Water
Associated Lab Samples: 92500314013, 92500314014, 92500314015, 92500314016, 92500314017, 92500314018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	10/26/20 01:17	

LABORATORY CONTROL SAMPLE: 3046802

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	4.5	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3046803 3046804

Parameter	Units	92501718011		3046804		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Calcium	mg/L	3350 ug/L	5	5	8.2	8.1	98	95	75-125	2	20		

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QUALITY CONTROL DATA

Project: MCMANUS CCR
Pace Project No.: 92500314

QC Batch: 573330 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500314001, 92500314002, 92500314003, 92500314004, 92500314005, 92500314006, 92500314007, 92500314008, 92500314009, 92500314010, 92500314011, 92500314012

METHOD BLANK: 3035868 Matrix: Water
Associated Lab Samples: 92500314001, 92500314002, 92500314003, 92500314004, 92500314005, 92500314006, 92500314007, 92500314008, 92500314009, 92500314010, 92500314011, 92500314012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	10/16/20 15:54	
Barium	mg/L	ND	0.010	0.00021	10/16/20 15:54	
Beryllium	mg/L	ND	0.0030	0.000050	10/16/20 15:54	
Boron	mg/L	ND	0.025	0.0062	10/16/20 15:54	
Cobalt	mg/L	ND	0.0050	0.000050	10/16/20 15:54	
Lead	mg/L	ND	0.0050	0.000077	10/16/20 15:54	
Lithium	mg/L	ND	0.030	0.00039	10/16/20 15:54	
Selenium	mg/L	ND	0.010	0.000061	10/16/20 15:54	

LABORATORY CONTROL SAMPLE: 3035869

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.011	106	80-120	
Barium	mg/L	0.05	0.052	103	80-120	
Beryllium	mg/L	0.01	0.010	102	80-120	
Boron	mg/L	0.05	0.052	103	80-120	
Cobalt	mg/L	0.01	0.010	105	80-120	
Lead	mg/L	0.05	0.052	103	80-120	
Lithium	mg/L	0.05	0.052	103	80-120	
Selenium	mg/L	0.05	0.051	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3035870 3035871

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92500378001 Result	Spike Conc.	Spike Conc.	Result							Result
Arsenic	mg/L	ND	0.01	0.01	0.010	0.010	99	102	75-125	2	20	
Barium	mg/L	0.28J ug/L	0.05	0.05	0.050	0.051	100	101	75-125	1	20	
Beryllium	mg/L	ND	0.01	0.01	0.010	0.010	101	101	75-125	0	20	
Boron	mg/L	ND	0.05	0.05	0.051	0.052	99	99	75-125	1	20	
Cobalt	mg/L	ND	0.01	0.01	0.010	0.011	103	106	75-125	2	20	
Lead	mg/L	ND	0.05	0.05	0.051	0.051	102	102	75-125	0	20	
Lithium	mg/L	ND	0.05	0.05	0.050	0.050	101	100	75-125	0	20	
Selenium	mg/L	ND	0.05	0.05	0.050	0.050	100	100	75-125	0	20	

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QUALITY CONTROL DATA

Project: MCMANUS CCR
Pace Project No.: 92500314

QC Batch: 573667 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500314013, 92500314014, 92500314015, 92500314016, 92500314017, 92500314018

METHOD BLANK: 3037373 Matrix: Water
Associated Lab Samples: 92500314013, 92500314014, 92500314015, 92500314016, 92500314017, 92500314018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	10/19/20 15:31	
Barium	mg/L	ND	0.010	0.00021	10/19/20 15:31	
Beryllium	mg/L	ND	0.0030	0.000050	10/19/20 15:31	
Boron	mg/L	ND	0.025	0.0062	10/20/20 12:40	
Cobalt	mg/L	ND	0.0050	0.000050	10/19/20 15:31	
Lead	mg/L	ND	0.0050	0.000077	10/19/20 15:31	
Lithium	mg/L	ND	0.030	0.00039	10/19/20 15:31	
Selenium	mg/L	ND	0.010	0.000061	10/19/20 15:31	

LABORATORY CONTROL SAMPLE: 3037374

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.011	107	80-120	
Barium	mg/L	0.05	0.053	106	80-120	
Beryllium	mg/L	0.01	0.010	105	80-120	
Boron	mg/L	0.05	0.051	102	80-120	
Cobalt	mg/L	0.01	0.011	108	80-120	
Lead	mg/L	0.05	0.054	108	80-120	
Lithium	mg/L	0.05	0.053	106	80-120	
Selenium	mg/L	0.05	0.053	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037375 3037376

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92500314013 Result	Spike Conc.	Spike Conc.	Conc.								
Arsenic	mg/L	ND	0.01	0.01	0.012	0.011	115	108	75-125	6	20		
Barium	mg/L	0.14	0.05	0.05	0.21	0.19	140	103	75-125	9	20	M6	
Beryllium	mg/L	ND	0.01	0.01	0.011	0.011	104	105	75-125	1	20		
Boron	mg/L	1.8	0.05	0.05	1.8	1.8	-51	-9	75-125	1	20	M6	
Cobalt	mg/L	ND	0.01	0.01	0.011	0.010	106	100	75-125	6	20		
Lead	mg/L	ND	0.05	0.05	0.057	0.052	113	103	75-125	9	20		
Lithium	mg/L	0.028J	0.05	0.05	0.081	0.079	107	103	75-125	3	20		
Selenium	mg/L	ND	0.05	0.05	0.019	0.019	37	37	75-125	2	20	M6	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS CCR
Pace Project No.: 92500314

QC Batch: 573916 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92500314019, 92500314020, 92500314021, 92500314022, 92500314023, 92500314024

METHOD BLANK: 3038658 Matrix: Water
Associated Lab Samples: 92500314019, 92500314020, 92500314021, 92500314022, 92500314023, 92500314024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	10/19/20 19:37	
Barium	mg/L	ND	0.010	0.00021	10/19/20 19:37	
Beryllium	mg/L	ND	0.0030	0.000050	10/19/20 19:37	
Boron	mg/L	ND	0.025	0.0062	10/20/20 10:27	
Cobalt	mg/L	ND	0.0050	0.000050	10/19/20 19:37	
Lead	mg/L	ND	0.0050	0.000077	10/19/20 19:37	
Lithium	mg/L	ND	0.030	0.00039	10/19/20 19:37	
Selenium	mg/L	ND	0.010	0.000061	10/19/20 19:37	

LABORATORY CONTROL SAMPLE: 3038659

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	101	80-120	
Barium	mg/L	0.05	0.049	99	80-120	
Beryllium	mg/L	0.01	0.0097	97	80-120	
Boron	mg/L	0.05	0.050	101	80-120	
Cobalt	mg/L	0.01	0.010	103	80-120	
Lead	mg/L	0.05	0.051	102	80-120	
Lithium	mg/L	0.05	0.049	98	80-120	
Selenium	mg/L	0.05	0.049	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3038660 3038661

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92500569010 Result	Spike Conc.	Spike Conc.	MS Result						
Arsenic	mg/L	0.0058	0.01	0.01	0.016	0.016	106	103	75-125	1	20
Barium	mg/L	0.16	0.05	0.05	0.21	0.20	95	93	75-125	0	20
Beryllium	mg/L	ND	0.01	0.01	0.010	0.010	101	102	75-125	1	20
Boron	mg/L	1.8	0.05	0.05	1.7	1.7	-72	-198	75-125	4	20 M6
Cobalt	mg/L	ND	0.01	0.01	0.011	0.010	105	103	75-125	2	20
Lead	mg/L	ND	0.05	0.05	0.052	0.051	103	103	75-125	1	20
Lithium	mg/L	0.058	0.05	0.05	0.11	0.10	99	94	75-125	2	20
Selenium	mg/L	ND	0.05	0.05	0.0047J	0.0043J	9	8	75-125		20 M6

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QUALITY CONTROL DATA

Project: MCMANUS CCR
Pace Project No.: 92500314

QC Batch: 573758 Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500314001, 92500314002, 92500314003, 92500314004, 92500314005, 92500314006

METHOD BLANK: 3037654 Matrix: Water
Associated Lab Samples: 92500314001, 92500314002, 92500314003, 92500314004, 92500314005, 92500314006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	10/19/20 10:17	

LABORATORY CONTROL SAMPLE: 3037655

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	264	106	90-110	

SAMPLE DUPLICATE: 3037656

Parameter	Units	92500033005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2600	2580	1	25	

SAMPLE DUPLICATE: 3037657

Parameter	Units	92500314005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: MCMANUS CCR

Pace Project No.: 92500314

QC Batch: 574188

Analysis Method: SM 2540C-2011

QC Batch Method: SM 2540C-2011

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92500314007, 92500314008, 92500314009, 92500314010, 92500314011, 92500314012

METHOD BLANK: 3040141

Matrix: Water

Associated Lab Samples: 92500314007, 92500314008, 92500314009, 92500314010, 92500314011, 92500314012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	10/19/20 18:26	

LABORATORY CONTROL SAMPLE: 3040142

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

SAMPLE DUPLICATE: 3040143

Parameter	Units	92500033010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	288	299	4	25	

SAMPLE DUPLICATE: 3040144

Parameter	Units	92500033020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	7280	7580	4	25	

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QUALITY CONTROL DATA

Project: MCMANUS CCR

Pace Project No.: 92500314

QC Batch: 574190 Analysis Method: SM 2540C-2011
 QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92500314013, 92500314014, 92500314015, 92500314016, 92500314017, 92500314018

METHOD BLANK: 3040151

Matrix: Water

Associated Lab Samples: 92500314013, 92500314014, 92500314015, 92500314016, 92500314017, 92500314018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	10/19/20 18:31	

LABORATORY CONTROL SAMPLE: 3040152

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	266	106	90-110	

SAMPLE DUPLICATE: 3040153

Parameter	Units	92500314013 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	8750	8750	0	25	

SAMPLE DUPLICATE: 3040154

Parameter	Units	92500507001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	62.0	64.0	3	25	

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QUALITY CONTROL DATA

Project: MCMANUS CCR

Pace Project No.: 92500314

QC Batch: 574334 Analysis Method: SM 2540C-2011
 QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92500314019, 92500314020, 92500314021, 92500314022, 92500314023, 92500314024

METHOD BLANK: 3040507 Matrix: Water

Associated Lab Samples: 92500314019, 92500314020, 92500314021, 92500314022, 92500314023, 92500314024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	10/20/20 12:07	

LABORATORY CONTROL SAMPLE: 3040508

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	258	103	90-110	

SAMPLE DUPLICATE: 3040509

Parameter	Units	92500569010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	11800	15500	27	25	D6

SAMPLE DUPLICATE: 3040510

Parameter	Units	92500569017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	16400	16000	2	25	

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QUALITY CONTROL DATA

Project: MCMANUS CCR

Pace Project No.: 92500314

QC Batch:	573641	Analysis Method:	EPA 300.0 Rev 2.1 1993
QC Batch Method:	EPA 300.0 Rev 2.1 1993	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500314001, 92500314002, 92500314003, 92500314004, 92500314005, 92500314006, 92500314007

METHOD BLANK: 3037300 Matrix: Water
Associated Lab Samples: 92500314001, 92500314002, 92500314003, 92500314004, 92500314005, 92500314006, 92500314007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/16/20 17:06	
Fluoride	mg/L	ND	0.10	0.050	10/16/20 17:06	
Sulfate	mg/L	ND	1.0	0.50	10/16/20 17:06	

LABORATORY CONTROL SAMPLE: 3037301

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.5	99	90-110	
Fluoride	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	50	48.5	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037302 3037303

Parameter	Units	92500361004		3037302		3037303		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	ND	ND	50	50	51.7	51.4	103	103	90-110	1	10	
Fluoride	mg/L	ND	ND	2.5	2.5	2.7	2.7	109	108	90-110	2	10	
Sulfate	mg/L	ND	ND	50	50	50.0	49.7	100	99	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037304 3037305

Parameter	Units	92500314005		3037304		3037305		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	ND	ND	50	50	52.1	52.0	104	104	90-110	0	10	
Fluoride	mg/L	ND	ND	2.5	2.5	2.5	2.5	99	100	90-110	2	10	
Sulfate	mg/L	ND	ND	50	50	50.9	50.4	102	101	90-110	1	10	

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QUALITY CONTROL DATA

Project: MCMANUS CCR

Pace Project No.: 92500314

QC Batch:	573642	Analysis Method:	EPA 300.0 Rev 2.1 1993
QC Batch Method:	EPA 300.0 Rev 2.1 1993	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Asheville
Associated Lab Samples:	92500314008, 92500314009, 92500314010, 92500314011, 92500314012, 92500314013, 92500314014, 92500314015, 92500314016, 92500314017, 92500314018		

METHOD BLANK:	3037306	Matrix:	Water
Associated Lab Samples:	92500314008, 92500314009, 92500314010, 92500314011, 92500314012, 92500314013, 92500314014, 92500314015, 92500314016, 92500314017, 92500314018		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/17/20 05:12	
Fluoride	mg/L	ND	0.10	0.050	10/17/20 05:12	
Sulfate	mg/L	ND	1.0	0.50	10/17/20 05:12	

LABORATORY CONTROL SAMPLE: 3037307						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.5	99	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	50	48.2	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037308												3037309	
Parameter	Units	92500314017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Chloride	mg/L	ND	50	50	52.1	52.0	104	104	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	100	99	90-110	1	10		
Sulfate	mg/L	ND	50	50	50.5	50.2	101	100	90-110	0	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037310												3037311	
Parameter	Units	92500314018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Chloride	mg/L	ND	50	50	52.1	52.4	104	105	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	99	101	90-110	2	10		
Sulfate	mg/L	ND	50	50	50.6	50.9	101	102	90-110	1	10		

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QUALITY CONTROL DATA

Project: MCMANUS CCR

Pace Project No.: 92500314

QC Batch: 574246 Analysis Method: EPA 300.0 Rev 2.1 1993
 QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Asheville
 Associated Lab Samples: 92500314019, 92500314020, 92500314021, 92500314022, 92500314023

METHOD BLANK: 3040304 Matrix: Water
 Associated Lab Samples: 92500314019, 92500314020, 92500314021, 92500314022, 92500314023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/20/20 20:54	
Fluoride	mg/L	ND	0.10	0.050	10/20/20 20:54	
Sulfate	mg/L	ND	1.0	0.50	10/20/20 20:54	

LABORATORY CONTROL SAMPLE: 3040305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.0	100	90-110	
Fluoride	mg/L	2.5	2.7	108	90-110	
Sulfate	mg/L	50	48.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3040306 3040307

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92500860056 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	7.8	50	50	59.7	60.0	104	104	90-110	0	10		
Fluoride	mg/L	57.7	2.5	2.5	58.0	57.5	15	-8	90-110	1	10	M6	
Sulfate	mg/L	10	50	50	61.1	61.4	102	103	90-110	1	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3040308 3040309

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92500314023 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	ND	50	50	51.3	51.8	102	103	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	105	106	90-110	1	10		
Sulfate	mg/L	ND	50	50	49.6	50.2	99	100	90-110	1	10		

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QUALITY CONTROL DATA

Project: MCMANUS CCR

Pace Project No.: 92500314

QC Batch: 574248

Analysis Method: EPA 300.0 Rev 2.1 1993

QC Batch Method: EPA 300.0 Rev 2.1 1993

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92500314024

METHOD BLANK: 3040316

Matrix: Water

Associated Lab Samples: 92500314024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/20/20 20:13	
Fluoride	mg/L	ND	0.10	0.050	10/20/20 20:13	
Sulfate	mg/L	ND	1.0	0.50	10/20/20 20:13	

LABORATORY CONTROL SAMPLE: 3040317

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.2	102	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	50	51.4	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3040932 3040933

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92501049002 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	ND	50	50	52.6	52.6	105	105	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	106	106	90-110	0	10		
Sulfate	mg/L	ND	50	50	52.3	52.3	104	104	90-110	0	10		

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QUALIFIERS

Project: MCMANUS CCR

Pace Project No.: 92500314

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS CCR
Pace Project No.: 92500314

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500314001	MCM-11				
92500314002	MCM-12				
92500314003	MCM-18				
92500314007	MCM-01				
92500314008	MCM-02				
92500314009	MCM-04				
92500314010	MCM-14				
92500314011	MCM-15				
92500314012	MCM-16				
92500314013	MCM-17				
92500314014	MCM-19				
92500314015	MCM-20				
92500314019	MCM-05				
92500314020	MCM-06				
92500314021	MCM-07				
92500314024	DPZ-2				
92500314001	MCM-11	EPA 3010A	573329	EPA 6010D	573345
92500314002	MCM-12	EPA 3010A	573329	EPA 6010D	573345
92500314003	MCM-18	EPA 3010A	573329	EPA 6010D	573345
92500314004	DUP-1	EPA 3010A	573329	EPA 6010D	573345
92500314005	FBL101220	EPA 3010A	573329	EPA 6010D	573345
92500314006	EQBL101220	EPA 3010A	573329	EPA 6010D	573345
92500314007	MCM-01	EPA 3010A	573329	EPA 6010D	573345
92500314008	MCM-02	EPA 3010A	573329	EPA 6010D	573345
92500314009	MCM-04	EPA 3010A	573329	EPA 6010D	573345
92500314010	MCM-14	EPA 3010A	573329	EPA 6010D	573345
92500314011	MCM-15	EPA 3010A	573329	EPA 6010D	573345
92500314012	MCM-16	EPA 3010A	573329	EPA 6010D	573345
92500314013	MCM-17	EPA 3010A	575519	EPA 6010D	575528
92500314014	MCM-19	EPA 3010A	575519	EPA 6010D	575528
92500314015	MCM-20	EPA 3010A	575519	EPA 6010D	575528
92500314016	DUP-2	EPA 3010A	575519	EPA 6010D	575528
92500314017	FBL101320	EPA 3010A	575519	EPA 6010D	575528
92500314018	EQBL101320	EPA 3010A	575519	EPA 6010D	575528
92500314019	MCM-05	EPA 3010A	573915	EPA 6010D	573927
92500314020	MCM-06	EPA 3010A	573915	EPA 6010D	573927
92500314021	MCM-07	EPA 3010A	573915	EPA 6010D	573927
92500314022	FBL101520	EPA 3010A	573915	EPA 6010D	573927
92500314023	EQBL101520	EPA 3010A	573915	EPA 6010D	573927
92500314024	DPZ-2	EPA 3010A	573915	EPA 6010D	573927
92500314001	MCM-11	EPA 3010A	573330	EPA 6020B	573343
92500314002	MCM-12	EPA 3010A	573330	EPA 6020B	573343
92500314003	MCM-18	EPA 3010A	573330	EPA 6020B	573343
92500314004	DUP-1	EPA 3010A	573330	EPA 6020B	573343
92500314005	FBL101220	EPA 3010A	573330	EPA 6020B	573343
92500314006	EQBL101220	EPA 3010A	573330	EPA 6020B	573343
92500314007	MCM-01	EPA 3010A	573330	EPA 6020B	573343

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS CCR

Pace Project No.: 92500314

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500314008	MCM-02	EPA 3010A	573330	EPA 6020B	573343
92500314009	MCM-04	EPA 3010A	573330	EPA 6020B	573343
92500314010	MCM-14	EPA 3010A	573330	EPA 6020B	573343
92500314011	MCM-15	EPA 3010A	573330	EPA 6020B	573343
92500314012	MCM-16	EPA 3010A	573330	EPA 6020B	573343
92500314013	MCM-17	EPA 3010A	573667	EPA 6020B	573681
92500314014	MCM-19	EPA 3010A	573667	EPA 6020B	573681
92500314015	MCM-20	EPA 3010A	573667	EPA 6020B	573681
92500314016	DUP-2	EPA 3010A	573667	EPA 6020B	573681
92500314017	FBL101320	EPA 3010A	573667	EPA 6020B	573681
92500314018	EQBL101320	EPA 3010A	573667	EPA 6020B	573681
92500314019	MCM-05	EPA 3010A	573916	EPA 6020B	573935
92500314020	MCM-06	EPA 3010A	573916	EPA 6020B	573935
92500314021	MCM-07	EPA 3010A	573916	EPA 6020B	573935
92500314022	FBL101520	EPA 3010A	573916	EPA 6020B	573935
92500314023	EQBL101520	EPA 3010A	573916	EPA 6020B	573935
92500314024	DPZ-2	EPA 3010A	573916	EPA 6020B	573935
92500314001	MCM-11	SM 2540C-2011	573758		
92500314002	MCM-12	SM 2540C-2011	573758		
92500314003	MCM-18	SM 2540C-2011	573758		
92500314004	DUP-1	SM 2540C-2011	573758		
92500314005	FBL101220	SM 2540C-2011	573758		
92500314006	EQBL101220	SM 2540C-2011	573758		
92500314007	MCM-01	SM 2540C-2011	574188		
92500314008	MCM-02	SM 2540C-2011	574188		
92500314009	MCM-04	SM 2540C-2011	574188		
92500314010	MCM-14	SM 2540C-2011	574188		
92500314011	MCM-15	SM 2540C-2011	574188		
92500314012	MCM-16	SM 2540C-2011	574188		
92500314013	MCM-17	SM 2540C-2011	574190		
92500314014	MCM-19	SM 2540C-2011	574190		
92500314015	MCM-20	SM 2540C-2011	574190		
92500314016	DUP-2	SM 2540C-2011	574190		
92500314017	FBL101320	SM 2540C-2011	574190		
92500314018	EQBL101320	SM 2540C-2011	574190		
92500314019	MCM-05	SM 2540C-2011	574334		
92500314020	MCM-06	SM 2540C-2011	574334		
92500314021	MCM-07	SM 2540C-2011	574334		
92500314022	FBL101520	SM 2540C-2011	574334		
92500314023	EQBL101520	SM 2540C-2011	574334		
92500314024	DPZ-2	SM 2540C-2011	574334		
92500314001	MCM-11	EPA 300.0 Rev 2.1 1993	573641		
92500314002	MCM-12	EPA 300.0 Rev 2.1 1993	573641		
92500314003	MCM-18	EPA 300.0 Rev 2.1 1993	573641		
92500314004	DUP-1	EPA 300.0 Rev 2.1 1993	573641		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS CCR
Pace Project No.: 92500314

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500314005	FBL101220	EPA 300.0 Rev 2.1 1993	573641		
92500314006	EQBL101220	EPA 300.0 Rev 2.1 1993	573641		
92500314007	MCM-01	EPA 300.0 Rev 2.1 1993	573641		
92500314008	MCM-02	EPA 300.0 Rev 2.1 1993	573642		
92500314009	MCM-04	EPA 300.0 Rev 2.1 1993	573642		
92500314010	MCM-14	EPA 300.0 Rev 2.1 1993	573642		
92500314011	MCM-15	EPA 300.0 Rev 2.1 1993	573642		
92500314012	MCM-16	EPA 300.0 Rev 2.1 1993	573642		
92500314013	MCM-17	EPA 300.0 Rev 2.1 1993	573642		
92500314014	MCM-19	EPA 300.0 Rev 2.1 1993	573642		
92500314015	MCM-20	EPA 300.0 Rev 2.1 1993	573642		
92500314016	DUP-2	EPA 300.0 Rev 2.1 1993	573642		
92500314017	FBL101320	EPA 300.0 Rev 2.1 1993	573642		
92500314018	EQBL101320	EPA 300.0 Rev 2.1 1993	573642		
92500314019	MCM-05	EPA 300.0 Rev 2.1 1993	574246		
92500314020	MCM-06	EPA 300.0 Rev 2.1 1993	574246		
92500314021	MCM-07	EPA 300.0 Rev 2.1 1993	574246		
92500314022	FBL101520	EPA 300.0 Rev 2.1 1993	574246		
92500314023	EQBL101520	EPA 300.0 Rev 2.1 1993	574246		
92500314024	DPZ-2	EPA 300.0 Rev 2.1 1993	574248		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 92500314

Client Name: G A Power



92500314

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

Proj. Name: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other

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

Cooler Temperature 214
4.3°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/14/2004

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

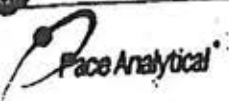
Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

F-ALLC003rev.3, 11September2006



Document Name:
Bottle Identification Form (BIF)
Document No.:
F-CAR-CS-043-Rev.00

Document Issued: March 14, 2019
Page 1 of 1
Issuing Authority:
Pace Carolinas Quality Office

Project # **WO# : 92500314**

PM: KLH1

Due Date: 10/28/20

CLIENT: GR-GA Power

• Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRD/8015 (water) DOC, LLHg

• Bottom half of box is to list number of bottle

Matrix	Item#	Matrix	Item#	Matrix	Item#	Matrix	Item#	Matrix	Item#	Matrix	Item#	Matrix	Item#
	BP4U-125 mL Plastic Unpreserved (N/A) (C-)		BP9U-250 mL Plastic Unpreserved (N/A)		BP2U-500 mL Plastic Unpreserved (N/A)		BP1U-1 liter Plastic Unpreserved (N/A)		BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)		BP3H-250 mL plastic HNO3 (pH < 2)		BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)
	BP4C-125 mL Plastic NaOH (pH > 12) (C-)		WGJU-Wide-mouthed Glass Jar Unpreserved		AG1U-1 liter Amber Unpreserved (N/A) (C-)		AG1H-1 liter Amber HCl (pH < 2)		AG3U-250 mL Amber Unpreserved (N/A) (C-)		AG1S-1 liter Amber H2SO4 (pH < 2)		AG3S-250 mL Amber H2SO4 (pH < 2)
	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)		DG9H-40 mL VOA HCl (N/A)		VG9T-40 mL VOA Na2S2O3 (N/A)		VG9U-40 mL VOA Unp (N/A)		DG9P-40 mL VOA H3PO4 (N/A)		VOAR (6 vials per kit)-VPH/Gas kit (N/A)		V/GK (3 vials per kit)-VPH/Gas kit (N/A)
	SP5T-125 mL Sterile Plastic (N/A - lab)		SP2T-250 mL Sterile Plastic (N/A - lab)		BP9A-250 mL Plastic (NH2)2SO4 (9.3-9.7)		AG9U-100 mL Amber Unpreserved vials (N/A)		VS9U-20 mL Sedimentation vials (N/A)				

BRIN

KLH

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

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



Document Name:
Bottle Identification Form (BIF)
Document No.:
F-CAR-CS-043-Rev.00

Document issued: March 14, 2019
Page 1 of 1
Issuing Authority:
Pace Carolinas Quality Office

Project **WO# : 92500314**

PM: KLH1 Due Date: 10/28/20
CLIENT: GA-GA Power

• Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.
• Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg
• Bottom half of box is to list number of bottle

Matrix	Item#	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG3S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-S03S En (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP9A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG6U-100 mL Amber Unpreserved vials (N/A)	VS6U-20 mL Sanitization vials (N/A)	
1																												
2																												
3																												
4																												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	KNUTRI/KL/Southern Co. Co. Co.	Attention:	
Address:	2480 Marner Road Atlanta, GA 30339	Copy To:	Stephen Wilson / Trent Gooden	Company Name:	
Email:		Purchase Order #:		Address:	
Phone:	(404)506-7239	Project Name:	Plant Mechanic CCR	Plant Project Manager:	Kevin Herting@gaaccelabs.com
Requested Date:		Project #:		Plant Profile #:	
			Regulatory Agency:		
			State / Location:		
			GA		

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test	Y/N	Requester Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	PH
			Date	Time			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol					
1	MCM-01	WT G																
2	MCM-02	WT G																
3	MCM-04	WT G																
4	MCM-05	WT G																
5	MCM-06	WT G																
6	MCM-07	WT G																
7	MCM-11	WT G	10/12/20	1515		92												PH 5.0
8	MCM-12	WT G	10/12/20	1546		52												PH 6.35
9	MCM-14	WT G																
10	MCM-15	WT G																
11	MCM-16	WT G																
12	MCM-17	WT G																

Released Appendix IV parameters include (As, Ba, Bi, Ca, Pb, U, Se, & Ra)	Released by / Affiliation:	DATE:	TIME:	Accepted by / Affiliation:	DATE:	TIME:	SAMPLE CONDITIONS
	Veronica Fey	10/13/20	1400	Feder	10/13/20	1600	4.3 Y Y Y

SAMPLER NAME AND SIGNATURE		TEMP In C	Received on Is (Y/N)	Coolbox Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Kevin Stronson, W.I.L. Laaker				
SIGNATURE OF SAMPLER:	<i>Veronica Fey</i>				
	DATE Signed: 10/12/20				



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
 Required Client Information:
 Company: Georgia Power - Coal Combustion Residuals
 Address: 2480 Manor Road, Atlanta, GA 30039
 Email: (404)505-7239 Fax: _____
 Requested Due Date: _____

Section B
 Required Project Information:
 Report To: **K. N. J. STURINK** Sr. Project Mgr.
 City To: **Whitney Lane**
 Purchase Order #: _____
 Project Name: **Plant McPherson CCR**
 Project #:

Section C
 Invoice Information:
 Attention:
 Company Name:
 Address:
 P.O. Box:
 P.O. City:
 State:
 Zip:

Requested Analytical Parameters (Y/N)

As	Br	Cr	Fe	Mn	Mo	Ni	Pb	Se	Si	Ti	V	W	Zn

Requested Analytical Filters (Y/N)

As	Br	Cr	Fe	Mn	Mo	Ni	Pb	Se	Si	Ti	V	W	Zn

Regulatory Agency:
State / Location:

ITEM #	MATERIAL	CODE	MATRIX CODE	SAMPLE TYPE	COLLECTED		SAMPLE TEMP AT COLLECTION	PRESERVATIVES									ANALYSES TEST	Residual Chlorine (Y/N)											
					Date	Time		# OF CONTAINERS	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Y/N			Cl, F, SO4	Metals 6020 App. III & IV	Radium 226 / 228	TDS 300.0							
1	MCM-01	WT G			10/13/20	1040		5	2	3																			
2	MCM-02	WT G			10/13/20	1133		5	2	3																			
3	MCM-04	WT G			10/13/20	0917		5	2	3																			
4	MCM-05	WT G																											
5	MCM-06	WT G																											
6	MCM-07	WT G																											
7	MCM-11	WT G																											
8	MCM-12	WT G																											
9	MCM-14	WT G			10/13/20	0910		5	2	3																			
10	MCM-15	WT G			10/13/20	1355		5	2	3																			
11	MCM-16	WT G			10/13/20	1408		5	2	3																			
12	MCM-17	WT G			10/13/20	1232		5	2	3																			

SAMPLER NAME AND SIGNATURE:

PRINT Name of SAMPLER: Kevin Stephensen, Will Loader, Veronica Fay	DATE Signed: 10/13/20
SIGNATURE of SAMPLER: [Signature]	

RECEIVED BY: **Veronica Fay** **10/13/20** **1600** **092043** **PH: 6.56** **PH: 5.02** **PH: 5.17** **PH: 6.34**

TEMP in C: _____

Received on Ice (Y/N): _____

Custody Sealed Cooler (Y/N): _____

Samples Intact (Y/N): _____



CHAIN-OF-CUSTODY / Analytical Request Document

Section A Required Client Information: Georgia Power - Coal Combustion Residuals 2480 Warner Road Atlanta, GA 30339

Section B Required Project Information: Report to: Stephen Watson / Trent Godwin Copy To: Whithy Law Purchase Order #: Plant Mechanisms CCR Project Name: Project #: Requested Due Date:

Section C Invoice Information: Company Name: Address: Kevin.herrington@pacelabs.com Price Profile #:

Regulatory Agency: State / Location: GA

Main data table with columns: ITEM #, MATRIX CODE, SAMPLE TYPE, COLLECTED (Date, Time), SAMPLE TEMP AT COLLECTION, # OF CONTAINERS, Preservatives, Analytes Test, Residual Chlorine (Y/N), SAMPLE CONDITIONS.

SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: KEVIN HERRINGTON, Will Leabert, Veronica Fay. SIGNATURE OF SAMPLER: [Signatures]

Deleted Appendix IV parameters include (As, Ba, Be, Ca, Cu, Pb, Li, Se, & Rb) Version Fay. DATE signed: 10/13/20

November 30, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCMANUS CCR RADS
Pace Project No.: 92500310

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between October 14, 2020 and October 16, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

Revision 1 - This report replaces the November 6, 2020 report. This project was revised on November 30, 2020 to reflect correction of Lab ID's. (Greensburg, PA)

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCMANUS CCR RADs
Pace Project No.: 92500310

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92500310001	MCM-11	Water	10/12/20 15:15	10/14/20 09:20
92500310002	MCM-12	Water	10/12/20 15:46	10/14/20 09:20
92500310003	MCM-18	Water	10/12/20 15:40	10/14/20 09:20
92500310004	DUP-1	Water	10/12/20 00:00	10/14/20 09:20
92500310005	FBL101220	Water	10/12/20 16:39	10/14/20 09:20
92500310006	EQBL101220	Water	10/12/20 16:44	10/14/20 09:20
92500310007	MCM-01	Water	10/13/20 10:40	10/14/20 09:20
92500310008	MCM-02	Water	10/13/20 11:33	10/14/20 09:20
92500310009	MCM-04	Water	10/13/20 09:17	10/14/20 09:20
92500310010	MCM-14	Water	10/13/20 00:10	10/14/20 09:20
92500310011	MCM-15	Water	10/13/20 13:55	10/14/20 09:20
92500310012	MCM-16	Water	10/13/20 14:08	10/14/20 09:20
92500310013	MCM-17	Water	10/13/20 12:32	10/14/20 09:20
92500310014	MCM-19	Water	10/13/20 10:02	10/14/20 09:20
92500310015	MCM-20	Water	10/13/20 11:16	10/14/20 09:20
92500310016	DUP-2	Water	10/13/20 00:00	10/14/20 09:20
92500310017	FBL101320	Water	10/13/20 13:42	10/14/20 09:20
92500310018	EQBL101320	Water	10/13/20 13:50	10/14/20 09:20
92500310019	MCM-05	Water	10/15/20 13:48	10/16/20 10:30
92500310020	MCM-06	Water	10/14/20 16:52	10/16/20 10:30
92500310021	MCM-07	Water	10/14/20 14:42	10/16/20 10:30
92500310022	FBL101520	Water	10/15/20 17:14	10/16/20 10:30
92500310023	EQBL101520	Water	10/15/20 17:20	10/16/20 10:30
92500310024	DPZ-2	Water	10/15/20 16:00	10/16/20 10:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS CCR RADS
Pace Project No.: 92500310

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92500310001	MCM-11	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310002	MCM-12	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310003	MCM-18	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310004	DUP-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310005	FBL101220	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310006	EQBL101220	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310007	MCM-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310008	MCM-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310009	MCM-04	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310010	MCM-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310011	MCM-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310012	MCM-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92500310013	MCM-17	EPA 9315	LAL	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: MCMANUS CCR RADS
Pace Project No.: 92500310

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92500310014	MCM-19	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92500310015	MCM-20	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92500310016	DUP-2	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92500310017	FBL101320	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92500310018	EQBL101320	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92500310019	MCM-05	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92500310020	MCM-06	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92500310021	MCM-07	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92500310022	FBL101520	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92500310023	EQBL101520	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92500310024	DPZ-2	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92500310001	MCM-11					
EPA 9315	Radium-226	0.142 ± 0.195 (0.409)	pCi/L		10/28/20 09:15	
EPA 9320	Radium-228	C:90% T:NA 2.56 ± 0.699 (0.780)	pCi/L		10/28/20 14:06	
Total Radium Calculation	Total Radium	C:81% T:87% 2.70 ± 0.894 (1.19)	pCi/L		11/06/20 14:58	
92500310002	MCM-12					
EPA 9315	Radium-226	1.42 ± 0.496 (0.424)	pCi/L		10/28/20 07:42	
EPA 9320	Radium-228	C:88% T:NA 1.24 ± 0.428 (0.596)	pCi/L		10/28/20 14:06	
Total Radium Calculation	Total Radium	C:82% T:100% 2.66 ± 0.924 (1.02)	pCi/L		11/06/20 14:58	
92500310003	MCM-18					
EPA 9315	Radium-226	4.34 ± 0.814 (0.248)	pCi/L		11/02/20 08:21	
EPA 9320	Radium-228	C:86% T:NA 4.49 ± 0.986 (0.585)	pCi/L		10/28/20 14:06	
Total Radium Calculation	Total Radium	C:85% T:88% 8.83 ± 1.80 (0.833)	pCi/L		11/06/20 14:58	
92500310004	DUP-1					
EPA 9315	Radium-226	0.117 ± 0.158 (0.322)	pCi/L		10/28/20 07:28	
EPA 9320	Radium-228	C:90% T:NA 1.06 ± 0.473 (0.782)	pCi/L		10/28/20 14:06	
Total Radium Calculation	Total Radium	C:84% T:78% 1.18 ± 0.631 (1.10)	pCi/L		11/06/20 14:58	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS CCR RADS
Pace Project No.: 92500310

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92500310005	FBL101220					
EPA 9315	Radium-226	0.129 ± 0.244 (0.560) C:87% T:NA	pCi/L		10/28/20 07:28	
EPA 9320	Radium-228	0.629 ± 0.357 (0.644) C:83% T:88%	pCi/L		10/28/20 14:06	
Total Radium Calculation	Total Radium	0.758 ± 0.601 (1.20)	pCi/L		11/06/20 14:58	
92500310006	EQBL101220					
EPA 9315	Radium-226	0.0941 ± 0.176 (0.403) C:92% T:NA	pCi/L		10/28/20 07:28	
EPA 9320	Radium-228	0.425 ± 0.309 (0.593) C:84% T:87%	pCi/L		10/28/20 14:06	
Total Radium Calculation	Total Radium	0.519 ± 0.485 (0.996)	pCi/L		11/06/20 14:58	
92500310007	MCM-01					
EPA 9315	Radium-226	0.287 ± 0.261 (0.496) C:93% T:NA	pCi/L		10/28/20 07:28	
EPA 9320	Radium-228	0.568 ± 0.365 (0.679) C:83% T:78%	pCi/L		10/28/20 14:06	
Total Radium Calculation	Total Radium	0.855 ± 0.626 (1.18)	pCi/L		11/06/20 14:58	
92500310008	MCM-02					
EPA 9315	Radium-226	0.524 ± 0.356 (0.633) C:88% T:NA	pCi/L		10/28/20 07:28	
EPA 9320	Radium-228	0.0359 ± 0.322 (0.746) C:83% T:76%	pCi/L		10/28/20 14:06	
Total Radium Calculation	Total Radium	0.560 ± 0.678 (1.38)	pCi/L		11/06/20 14:58	

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SUMMARY OF DETECTION

Project: MCMANUS CCR RADS
Pace Project No.: 92500310

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92500310009	MCM-04					
EPA 9315	Radium-226	2.20 ± 0.638 (0.423) C:80% T:NA	pCi/L		10/28/20 07:28	
EPA 9320	Radium-228	1.51 ± 0.550 (0.819) C:82% T:81%	pCi/L		10/28/20 14:07	
Total Radium Calculation	Total Radium	3.71 ± 1.19 (1.24)	pCi/L		11/06/20 14:58	
92500310010	MCM-14					
EPA 9315	Radium-226	3.62 ± 0.857 (0.398) C:92% T:NA	pCi/L		10/28/20 07:28	
EPA 9320	Radium-228	3.81 ± 0.898 (0.809) C:82% T:98%	pCi/L		10/28/20 14:07	
Total Radium Calculation	Total Radium	7.43 ± 1.76 (1.21)	pCi/L		11/06/20 14:58	
92500310011	MCM-15					
EPA 9315	Radium-226	1.31 ± 0.477 (0.486) C:89% T:NA	pCi/L		10/28/20 07:16	
EPA 9320	Radium-228	2.01 ± 0.601 (0.720) C:83% T:87%	pCi/L		10/28/20 14:07	
Total Radium Calculation	Total Radium	3.32 ± 1.08 (1.21)	pCi/L		11/06/20 14:58	
92500310012	MCM-16					
EPA 9315	Radium-226	0.840 ± 0.361 (0.336) C:85% T:NA	pCi/L		10/28/20 07:16	
EPA 9320	Radium-228	0.868 ± 0.449 (0.792) C:83% T:79%	pCi/L		10/28/20 14:07	
Total Radium Calculation	Total Radium	1.71 ± 0.810 (1.13)	pCi/L		11/06/20 14:58	
92500310013	MCM-17					
EPA 9315	Radium-226	4.76 ± 1.03 (0.348) C:92% T:NA	pCi/L		10/28/20 07:16	

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SUMMARY OF DETECTION

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92500310013	MCM-17					
EPA 9320	Radium-228	2.99 ± 0.783 (0.832) C:78% T:90%	pCi/L		10/28/20 14:07	
Total Radium Calculation	Total Radium	7.75 ± 1.81 (1.18)	pCi/L		11/06/20 14:58	
92500310014	MCM-19					
EPA 9315	Radium-226	5.74 ± 1.02 (0.318) C:89% T:NA	pCi/L		11/02/20 08:22	
EPA 9320	Radium-228	8.36 ± 1.65 (0.536) C:83% T:102%	pCi/L		10/28/20 14:07	
Total Radium Calculation	Total Radium	14.1 ± 2.67 (0.854)	pCi/L		11/06/20 14:58	
92500310015	MCM-20					
EPA 9315	Radium-226	7.15 ± 1.22 (0.239) C:92% T:NA	pCi/L		11/02/20 07:47	
EPA 9320	Radium-228	23.1 ± 4.29 (0.637) C:84% T:93%	pCi/L		10/28/20 14:07	
Total Radium Calculation	Total Radium	30.3 ± 5.51 (0.876)	pCi/L		11/06/20 14:58	
92500310016	DUP-2					
EPA 9315	Radium-226	0.483 ± 0.280 (0.337) C:90% T:NA	pCi/L		10/28/20 07:16	
EPA 9320	Radium-228	0.476 ± 0.404 (0.812) C:83% T:78%	pCi/L		10/28/20 14:07	
Total Radium Calculation	Total Radium	0.959 ± 0.684 (1.15)	pCi/L		11/06/20 14:58	
92500310017	FBL101320					
EPA 9315	Radium-226	0.0894 ± 0.160 (0.359) C:88% T:NA	pCi/L		10/28/20 07:16	
EPA 9320	Radium-228	0.146 ± 0.341 (0.758) C:83% T:85%	pCi/L		10/28/20 14:07	

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SUMMARY OF DETECTION

Project: MCMANUS CCR RADS
Pace Project No.: 92500310

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92500310017	FBL101320					
Total Radium Calculation	Total Radium	0.235 ± 0.501 (1.12)	pCi/L		11/06/20 14:58	
92500310018	EQBL101320					
EPA 9315	Radium-226	0.239 ± 0.213 (0.364)	pCi/L		10/28/20 07:17	
EPA 9320	Radium-228	C:91% T:NA 6.52 ± 1.35 (0.655)	pCi/L		10/28/20 14:08	
Total Radium Calculation	Total Radium	C:81% T:99% 6.76 ± 1.56 (1.02)	pCi/L		11/06/20 14:58	
92500310019	MCM-05					
EPA 9315	Radium-226	1.32 ± 0.414 (0.404)	pCi/L		11/02/20 08:37	
EPA 9320	Radium-228	C:80% T:NA 1.24 ± 0.832 (1.61)	pCi/L		11/04/20 15:37	
Total Radium Calculation	Total Radium	C:72% T:51% 2.56 ± 1.25 (2.01)	pCi/L		11/05/20 15:19	
92500310020	MCM-06					
EPA 9315	Radium-226	5.06 ± 0.971 (0.279)	pCi/L		11/02/20 08:37	
EPA 9320	Radium-228	C:94% T:NA 3.91 ± 1.67 (2.69)	pCi/L		11/04/20 15:37	
Total Radium Calculation	Total Radium	C:68% T:28% 8.97 ± 2.64 (2.97)	pCi/L		11/05/20 15:19	
92500310021	MCM-07					
EPA 9315	Radium-226	5.31 ± 1.01 (0.276)	pCi/L		11/02/20 08:37	
EPA 9320	Radium-228	C:90% T:NA 7.75 ± 1.97 (2.05)	pCi/L		11/04/20 15:38	
Total Radium Calculation	Total Radium	C:67% T:47% 13.1 ± 2.98 (2.33)	pCi/L		11/05/20 15:19	

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SUMMARY OF DETECTION

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92500310022	FBL101520					
EPA 9315	Radium-226	0.0741 ± 0.128 (0.287) C:85% T:NA	pCi/L		11/02/20 08:37	
EPA 9320	Radium-228	0.127 ± 0.454 (1.02) C:68% T:81%	pCi/L		11/04/20 15:38	
Total Radium Calculation	Total Radium	0.201 ± 0.582 (1.31)	pCi/L		11/05/20 15:19	
92500310023	EQBL101520					
EPA 9315	Radium-226	0.137 ± 0.146 (0.281) C:91% T:NA	pCi/L		11/02/20 08:19	
EPA 9320	Radium-228	0.171 ± 0.458 (1.02) C:69% T:86%	pCi/L		11/04/20 15:38	
Total Radium Calculation	Total Radium	0.308 ± 0.604 (1.30)	pCi/L		11/05/20 15:19	
92500310024	DPZ-2					
EPA 9315	Radium-226	4.77 ± 0.933 (0.345) C:94% T:NA	pCi/L		11/02/20 08:19	
EPA 9320	Radium-228	1.88 ± 0.915 (1.62) C:68% T:56%	pCi/L		11/04/20 15:38	
Total Radium Calculation	Total Radium	6.65 ± 1.85 (1.97)	pCi/L		11/05/20 15:19	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-11 **Lab ID: 92500310001** Collected: 10/12/20 15:15 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.142 ± 0.195 (0.409) C:90% T:NA	pCi/L	10/28/20 09:15	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	2.56 ± 0.699 (0.780) C:81% T:87%	pCi/L	10/28/20 14:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.70 ± 0.894 (1.19)	pCi/L	11/06/20 14:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-12 **Lab ID: 92500310002** Collected: 10/12/20 15:46 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	1.42 ± 0.496 (0.424) C:88% T:NA	pCi/L	10/28/20 07:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.24 ± 0.428 (0.596) C:82% T:100%	pCi/L	10/28/20 14:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.66 ± 0.924 (1.02)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-18 **Lab ID: 92500310003** Collected: 10/12/20 15:40 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	4.34 ± 0.814 (0.248) C:86% T:NA	pCi/L	11/02/20 08:21	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	4.49 ± 0.986 (0.585) C:85% T:88%	pCi/L	10/28/20 14:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	8.83 ± 1.80 (0.833)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: DUP-1 **Lab ID: 92500310004** Collected: 10/12/20 00:00 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.117 ± 0.158 (0.322) C:90% T:NA	pCi/L	10/28/20 07:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.06 ± 0.473 (0.782) C:84% T:78%	pCi/L	10/28/20 14:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.18 ± 0.631 (1.10)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FBL101220 Lab ID: 92500310005 Collected: 10/12/20 16:39 Received: 10/14/20 09:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.129 ± 0.244 (0.560) C:87% T:NA	pCi/L	10/28/20 07:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.629 ± 0.357 (0.644) C:83% T:88%	pCi/L	10/28/20 14:06	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.758 ± 0.601 (1.20)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: EQBL101220 **Lab ID: 92500310006** Collected: 10/12/20 16:44 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.0941 ± 0.176 (0.403) C:92% T:NA	pCi/L	10/28/20 07:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.425 ± 0.309 (0.593) C:84% T:87%	pCi/L	10/28/20 14:06	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.519 ± 0.485 (0.996)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-01 **Lab ID: 92500310007** Collected: 10/13/20 10:40 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.287 ± 0.261 (0.496) C:93% T:NA	pCi/L	10/28/20 07:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.568 ± 0.365 (0.679) C:83% T:78%	pCi/L	10/28/20 14:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.855 ± 0.626 (1.18)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MCM-02 Lab ID: 92500310008 Collected: 10/13/20 11:33 Received: 10/14/20 09:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.524 ± 0.356 (0.633) C:88% T:NA	pCi/L	10/28/20 07:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.0359 ± 0.322 (0.746) C:83% T:76%	pCi/L	10/28/20 14:06	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.560 ± 0.678 (1.38)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-04 **Lab ID: 92500310009** Collected: 10/13/20 09:17 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	2.20 ± 0.638 (0.423) C:80% T:NA	pCi/L	10/28/20 07:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.51 ± 0.550 (0.819) C:82% T:81%	pCi/L	10/28/20 14:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	3.71 ± 1.19 (1.24)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-14 **Lab ID: 92500310010** Collected: 10/13/20 00:10 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	3.62 ± 0.857 (0.398) C:92% T:NA	pCi/L	10/28/20 07:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	3.81 ± 0.898 (0.809) C:82% T:98%	pCi/L	10/28/20 14:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	7.43 ± 1.76 (1.21)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-15 **Lab ID: 92500310011** Collected: 10/13/20 13:55 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	1.31 ± 0.477 (0.486) C:89% T:NA	pCi/L	10/28/20 07:16	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	2.01 ± 0.601 (0.720) C:83% T:87%	pCi/L	10/28/20 14:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	3.32 ± 1.08 (1.21)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MCM-16 Lab ID: 92500310012 Collected: 10/13/20 14:08 Received: 10/14/20 09:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.840 ± 0.361 (0.336) C:85% T:NA	pCi/L	10/28/20 07:16	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.868 ± 0.449 (0.792) C:83% T:79%	pCi/L	10/28/20 14:07	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.71 ± 0.810 (1.13)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-17 **Lab ID: 92500310013** Collected: 10/13/20 12:32 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	4.76 ± 1.03 (0.348) C:92% T:NA	pCi/L	10/28/20 07:16	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	2.99 ± 0.783 (0.832) C:78% T:90%	pCi/L	10/28/20 14:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	7.75 ± 1.81 (1.18)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-19 **Lab ID: 92500310014** Collected: 10/13/20 10:02 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	5.74 ± 1.02 (0.318) C:89% T:NA	pCi/L	11/02/20 08:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	8.36 ± 1.65 (0.536) C:83% T:102%	pCi/L	10/28/20 14:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	14.1 ± 2.67 (0.854)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MCM-20 Lab ID: 92500310015 Collected: 10/13/20 11:16 Received: 10/14/20 09:20 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	7.15 ± 1.22 (0.239) C:92% T:NA	pCi/L	11/02/20 07:47	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	23.1 ± 4.29 (0.637) C:84% T:93%	pCi/L	10/28/20 14:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	30.3 ± 5.51 (0.876)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: DUP-2 **Lab ID: 92500310016** Collected: 10/13/20 00:00 Received: 10/14/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.483 ± 0.280 (0.337) C:90% T:NA	pCi/L	10/28/20 07:16	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.476 ± 0.404 (0.812) C:83% T:78%	pCi/L	10/28/20 14:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.959 ± 0.684 (1.15)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FBL101320 Lab ID: 92500310017 Collected: 10/13/20 13:42 Received: 10/14/20 09:20 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.0894 ± 0.160 (0.359) C:88% T:NA	pCi/L	10/28/20 07:16	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.146 ± 0.341 (0.758) C:83% T:85%	pCi/L	10/28/20 14:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.235 ± 0.501 (1.12)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: EQBL101320 Lab ID: 92500310018 Collected: 10/13/20 13:50 Received: 10/14/20 09:20 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.239 ± 0.213 (0.364) C:91% T:NA	pCi/L	10/28/20 07:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	6.52 ± 1.35 (0.655) C:81% T:99%	pCi/L	10/28/20 14:08	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	6.76 ± 1.56 (1.02)	pCi/L	11/06/20 14:58	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-05 **Lab ID: 92500310019** Collected: 10/15/20 13:48 Received: 10/16/20 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	1.32 ± 0.414 (0.404) C:80% T:NA	pCi/L	11/02/20 08:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.24 ± 0.832 (1.61) C:72% T:51%	pCi/L	11/04/20 15:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	2.56 ± 1.25 (2.01)	pCi/L	11/05/20 15:19	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: MCM-06 **Lab ID: 92500310020** Collected: 10/14/20 16:52 Received: 10/16/20 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	5.06 ± 0.971 (0.279) C:94% T:NA	pCi/L	11/02/20 08:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	3.91 ± 1.67 (2.69) C:68% T:28%	pCi/L	11/04/20 15:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	8.97 ± 2.64 (2.97)	pCi/L	11/05/20 15:19	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MCM-07 Lab ID: 92500310021 Collected: 10/14/20 14:42 Received: 10/16/20 10:30 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	5.31 ± 1.01 (0.276) C:90% T:NA	pCi/L	11/02/20 08:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	7.75 ± 1.97 (2.05) C:67% T:47%	pCi/L	11/04/20 15:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	13.1 ± 2.98 (2.33)	pCi/L	11/05/20 15:19	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FBL101520 Lab ID: 92500310022 Collected: 10/15/20 17:14 Received: 10/16/20 10:30 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	0.0741 ± 0.128 (0.287) C:85% T:NA	pCi/L	11/02/20 08:37	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.127 ± 0.454 (1.02) C:68% T:81%	pCi/L	11/04/20 15:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.201 ± 0.582 (1.31)	pCi/L	11/05/20 15:19	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: EQBL101520 Lab ID: 92500310023 Collected: 10/15/20 17:20 Received: 10/16/20 10:30 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.137 ± 0.146 (0.281) C:91% T:NA	pCi/L	11/02/20 08:19	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.171 ± 0.458 (1.02) C:69% T:86%	pCi/L	11/04/20 15:38	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.308 ± 0.604 (1.30)	pCi/L	11/05/20 15:19	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

Sample: DPZ-2 **Lab ID: 92500310024** Collected: 10/15/20 16:00 Received: 10/16/20 10:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	4.77 ± 0.933 (0.345) C:94% T:NA	pCi/L	11/02/20 08:19	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.88 ± 0.915 (1.62) C:68% T:56%	pCi/L	11/04/20 15:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	6.65 ± 1.85 (1.97)	pCi/L	11/05/20 15:19	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

QC Batch: 420607

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92500310019, 92500310020, 92500310021, 92500310022, 92500310023, 92500310024

METHOD BLANK: 2033124

Matrix: Water

Associated Lab Samples: 92500310019, 92500310020, 92500310021, 92500310022, 92500310023, 92500310024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0124 ± 0.0900 (0.246) C:95% T:NA	pCi/L	11/02/20 08:37	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

QC Batch: 419606

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92500310019, 92500310020, 92500310021, 92500310022, 92500310023, 92500310024

METHOD BLANK: 2028435

Matrix: Water

Associated Lab Samples: 92500310019, 92500310020, 92500310021, 92500310022, 92500310023, 92500310024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.155 ± 0.346 (0.847) C:70% T:81%	pCi/L	11/04/20 15:37	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCMANUS CCR RADS
 Pace Project No.: 92500310

QC Batch:	419082	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92500310001, 92500310002, 92500310003, 92500310004, 92500310005, 92500310006, 92500310007, 92500310008, 92500310009, 92500310010, 92500310011, 92500310012, 92500310013, 92500310014, 92500310015, 92500310016, 92500310017, 92500310018

METHOD BLANK: 2026041 Matrix: Water

Associated Lab Samples: 92500310001, 92500310002, 92500310003, 92500310004, 92500310005, 92500310006, 92500310007, 92500310008, 92500310009, 92500310010, 92500310011, 92500310012, 92500310013, 92500310014, 92500310015, 92500310016, 92500310017, 92500310018

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.194 ± 0.336 (0.733) C:83% T:78%	pCi/L	10/28/20 14:06	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCMANUS CCR RADS
 Pace Project No.: 92500310

QC Batch:	419081	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92500310001, 92500310002, 92500310003, 92500310004, 92500310005, 92500310006, 92500310007, 92500310008, 92500310009, 92500310010, 92500310011, 92500310012, 92500310013, 92500310014, 92500310015, 92500310016, 92500310017, 92500310018

METHOD BLANK: 2026040 Matrix: Water

Associated Lab Samples: 92500310001, 92500310002, 92500310003, 92500310004, 92500310005, 92500310006, 92500310007, 92500310008, 92500310009, 92500310010, 92500310011, 92500310012, 92500310013, 92500310014, 92500310015, 92500310016, 92500310017, 92500310018

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.000317 ± 0.183 (0.503) C:93% T:NA	pCi/L	10/28/20 07:41	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: MCMANUS CCR RADS

Pace Project No.: 92500310

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS CCR RADs
Pace Project No.: 92500310

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500310001	MCM-11	EPA 9315	419081		
92500310002	MCM-12	EPA 9315	419081		
92500310003	MCM-18	EPA 9315	419081		
92500310004	DUP-1	EPA 9315	419081		
92500310005	FBL101220	EPA 9315	419081		
92500310006	EQBL101220	EPA 9315	419081		
92500310007	MCM-01	EPA 9315	419081		
92500310008	MCM-02	EPA 9315	419081		
92500310009	MCM-04	EPA 9315	419081		
92500310010	MCM-14	EPA 9315	419081		
92500310011	MCM-15	EPA 9315	419081		
92500310012	MCM-16	EPA 9315	419081		
92500310013	MCM-17	EPA 9315	419081		
92500310014	MCM-19	EPA 9315	419081		
92500310015	MCM-20	EPA 9315	419081		
92500310016	DUP-2	EPA 9315	419081		
92500310017	FBL101320	EPA 9315	419081		
92500310018	EQBL101320	EPA 9315	419081		
92500310019	MCM-05	EPA 9315	420607		
92500310020	MCM-06	EPA 9315	420607		
92500310021	MCM-07	EPA 9315	420607		
92500310022	FBL101520	EPA 9315	420607		
92500310023	EQBL101520	EPA 9315	420607		
92500310024	DPZ-2	EPA 9315	420607		
92500310001	MCM-11	EPA 9320	419082		
92500310002	MCM-12	EPA 9320	419082		
92500310003	MCM-18	EPA 9320	419082		
92500310004	DUP-1	EPA 9320	419082		
92500310005	FBL101220	EPA 9320	419082		
92500310006	EQBL101220	EPA 9320	419082		
92500310007	MCM-01	EPA 9320	419082		
92500310008	MCM-02	EPA 9320	419082		
92500310009	MCM-04	EPA 9320	419082		
92500310010	MCM-14	EPA 9320	419082		
92500310011	MCM-15	EPA 9320	419082		
92500310012	MCM-16	EPA 9320	419082		
92500310013	MCM-17	EPA 9320	419082		
92500310014	MCM-19	EPA 9320	419082		
92500310015	MCM-20	EPA 9320	419082		
92500310016	DUP-2	EPA 9320	419082		
92500310017	FBL101320	EPA 9320	419082		
92500310018	EQBL101320	EPA 9320	419082		
92500310019	MCM-05	EPA 9320	419606		
92500310020	MCM-06	EPA 9320	419606		
92500310021	MCM-07	EPA 9320	419606		
92500310022	FBL101520	EPA 9320	419606		
92500310023	EQBL101520	EPA 9320	419606		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS CCR RADS
Pace Project No.: 92500310

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500310024	DPZ-2	EPA 9320	419606		
92500310001	MCM-11	Total Radium Calculation	421995		
92500310002	MCM-12	Total Radium Calculation	421995		
92500310003	MCM-18	Total Radium Calculation	421995		
92500310004	DUP-1	Total Radium Calculation	421995		
92500310005	FBL101220	Total Radium Calculation	421995		
92500310006	EQBL101220	Total Radium Calculation	421995		
92500310007	MCM-01	Total Radium Calculation	421995		
92500310008	MCM-02	Total Radium Calculation	421995		
92500310009	MCM-04	Total Radium Calculation	421995		
92500310010	MCM-14	Total Radium Calculation	421995		
92500310011	MCM-15	Total Radium Calculation	421995		
92500310012	MCM-16	Total Radium Calculation	421995		
92500310013	MCM-17	Total Radium Calculation	421995		
92500310014	MCM-19	Total Radium Calculation	421995		
92500310015	MCM-20	Total Radium Calculation	421995		
92500310016	DUP-2	Total Radium Calculation	421995		
92500310017	FBL101320	Total Radium Calculation	421995		
92500310018	EQBL101320	Total Radium Calculation	421995		
92500310019	MCM-05	Total Radium Calculation	421841		
92500310020	MCM-06	Total Radium Calculation	421841		
92500310021	MCM-07	Total Radium Calculation	421841		
92500310022	FBL101520	Total Radium Calculation	421841		
92500310023	EQBL101520	Total Radium Calculation	421841		
92500310024	DPZ-2	Total Radium Calculation	421841		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 92500310

Client Name: G A Powell



92500310

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

Proj. Name: _____

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

Packing Material: Bubble Wrap Bubble Bags None Other _____

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

Cooler Temperature 4.3°C Biological Tissue is Frozen: Yes No Date and initials of person examining contents: 10/19/2006

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

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

Field Data Required? Y / N

Client Notification/ Resolution:

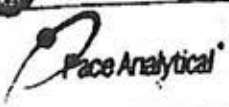
Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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



Document Name:
Bottle Identification Form (BIF)
Document No.:
F-CAR-CS-043-Rev.00

Document issued: March 14, 2019
Page 1 of 1
Issuing Authority:
Pace Carolinas Quality Office

Project #

WO# : 92500310

PM: KLH1

Due Date: 11/04/20

CLIENT: GR-GA Power

• Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

• Bottom half of box is to list number of bottle

Matrix	Item#	Matrix	Item#	Matrix	Item#	Matrix	Item#	Matrix	Item#	Matrix	Item#	Matrix	Item#	Matrix	Item#
	BP4U-125 mL Plastic Unpreserved (N/A) (C-)		BP3U-250 mL Plastic Unpreserved (N/A)		BP2U-500 mL Plastic Unpreserved (N/A)		BP1U-1 liter Plastic Unpreserved (N/A)		BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)		BP3H-250 mL plastic HNO3 (pH < 2)		BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)		BP4C-125 mL Plastic NaOH (pH > 12) (C-)
	WGFU-Wide-mouthed Glass Jar Unpreserved		AG1U-1 liter Amber Unpreserved (N/A) (C-)		AG1H-1 liter Amber HCl (pH < 2)		AG3U-250 mL Amber Unpreserved (N/A) (C-)		AG1S-1 liter Amber H2SO4 (pH < 2)		AG3S-250 mL Amber H2SO4 (pH < 2)		AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)		DG9H-40 mL VOA HCl (N/A)
	VG9T-40 mL VOA N#25203 (N/A)		VG9U-40 mL VOA Unp (N/A)		DG9P-40 mL VOA H3PO4 (N/A)		VOAK (6 vials per kit)-5035 Kit (N/A)		V/GK (3 vials per kit)-VPH/Gas kit (N/A)		SP5T-125 mL Sterile Plastic (N/A - lab)		SP2T-250 mL Sterile Plastic (N/A - lab)		BP3A-250 mL Plastic (NH2)2504 (9.3-9.7)
	AG0U-100 mL Amber Unpreserved vials (N/A)		V56U-20 mL Scintillation vials (N/A)												

BRN

22222222

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

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



Document Name:
Bottle Identification Form (BIF)
Document No.:
F-CAR-CS-043-Rev.00

Document issued: March 14, 2019
Page 1 of 1
Issuing Authority:
Pace Carolinas Quality Office

Project # **WO# : 92500310**

PM: KLH1 Due Date: 11/04/20
CLIENT: GA-GA Power

• Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

• Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

• Bottom half of box is to list number of bottle

Matrix	Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3H-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (pH > 12) (Cl-)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-VPH/Gas kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH4)2SO4 (9.3-9.7)	AG6U-100 mL Amber Unpreserved vials (N/A)	VS6U-20 mL Scintillation vials (N/A)	
	1																											
	2																											
	3																											
	4																											
	5																											
	6																											
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A		Section B		Section C	
Required Client Information: Company: Georgia Power - Coal Combustion Residuals Address: 2490 Marner Road Atlanta, GA 30339 Email: Phone: (404)506-7239 Fax: Requested Due Date:		Required Project Information: Report To: KNULEINKK Copy To: Stephen Wilson / Trent Goodwin Whinery Law Purchase Order #:		Invoice Information: Attention: Company Name: Address: Page Order: Price Project Manager: Kevin.Herring@dnr.ga.gov Price Profile #:	
Project Name: Plant Mckanus CSR Project #:		Regulatory Agency: State / Location: GA			

ITEM #	MATRIX	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
					Date	Time			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol				
1	MCM-01	WT G																	
2	MCM-02	WT G																	
3	MCM-04	WT G																	
4	MCM-05	WT G																	
5	MCM-06	WT G																	
6	MCM-07	WT G																	
7	MCM-11	WT G			10/12/20	15:15		5	2										
8	MCM-12	WT G			10/12/20	15:46		5	2										
9	MCM-14	WT G																	
10	MCM-15	WT G																	
11	MCM-16	WT G																	
12	MCM-17	WT G																	

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Coolbox Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
Kevin C. Fey	10/13/20	1:00	Feder	10/13/20	1:00	4.3	Y	Y	Y	Y
			Charles Foster	10/14/20	09:00					

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	Kevin Strengerson, W. Il Lester, Veronica Fey
SIGNATURE of SAMPLER:	<i>Veronica Fey</i>
DATE Signed:	10/12/20



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Section B Required Project Information: Section C Invoice Information:

Company: Georgia Power - Coal Combustion Residuals Address: 2480 Marner Road Atlanta, GA 30339 Phone: (404)508-7289 Requested Due Date:	Report To: Stephen Wilson / Trent Goheen Copy To: Whitney Law Project Name: Plant McManus CCR Project #:
Attention:	Company Name:
Address:	Project Manager: Kevin.herrington@pacelabs.com
Place Order:	Place Profile #:
Regulatory Agency:	State / Location: GA

ITEM #	SAMPLE ID <small>One Character per box. (A-Z, 0-9 / -)</small> Sample ids must be unique	MATRIX <small>Drinking Water Waste Water Wastewater Product Soil/Sediment Oil Wipes Air Other Trace</small>	CODE <small>DW WW P SL OK WP AS OT TS</small>	MATRIX CODE (see valid codes to)	SAMPLE TYPE (G=GRAB C=COMPOSITE)	COLLECTED		DATE	TIME	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP In C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
						Date	Time												
1	MCM-18			WT G	10/12/20	15	40	10/13/20	1600	Vernica Fay	10/13/20	1600	Self David Ayuda	10/14/20	1600	43	Y	Y	Y
2	MCM-19			WT G															
3	MCM-20			WT G															
4	DUP-1			WT G	10/12/20	5	2												
5	DUP-2			WT G															
6	FBL 101220			WT G	10/12/20	5	2												
7	EOBL 101220			WT G	10/12/20	5	2												
8																			
9																			
10																			
11																			
12																			

SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Kevin Stephenson, Will Louder SIGNATURE of SAMPLER: <i>Kevin Stephenson</i>	DATE Signed: 10/12/20
---	-----------------------



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Company: Georgia Power - Coal Combustion Residuals; Address: 2480 Manor Road, Atlanta, GA 30339; Phone: (404)506-7239; Fax: [blank]; Requested Date: [blank]; Email: [blank]

Section B Required Project Information: Report To: K. N. STURINK; Copy To: Stephen Wilson / Trent Godwin; Project Name: Plant Mckinvas CCR; Project #: [blank]; Purchase Order #: [blank]; Invoice Information: Attention: [blank]; Address: [blank]; Company Name: [blank]; Pace Order #: [blank]; Pace Project Manager: Kevin Herring@pacelabs.com; Pace Profile #: [blank]; Regulatory Agency: [blank]; State / Location: GA

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyzes Test	Requested Analytes Filtered (Y/N)	Residual Chlorine (Y/N)	PH	
			Date	Time			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol					Other
1	MCM-01	WT G	10/13/20	1040		5	2	3										PH: 5.69
2	MCM-02	WT G	10/13/20	1133		5	2	3										PH: 5.03
3	MCM-04	WT G	10/13/20	0917		5	2	3										PH: 5.25
4	MCM-05	WT G																
5	MCM-06	WT G																
6	MCM-07	WT G																
7	MCM-11	WT G																
8	MCM-12	WT G																
9	MCM-14	WT G	10/13/20	0910		5	2	3										PH: 6.56
10	MCM-15	WT G	10/13/20	1355		5	2	3										PH: 5.02
11	MCM-16	WT G	10/13/20	1408		5	2	3										PH: 5.17
12	MCM-17	WT G	10/13/20	1232		5	2	3										PH: 6.34

Requisitioned by / Affiliation: Veronica Fay; Date: 10/13/20; Time: 1000; Accepted by / Affiliation: Kevin Herring; Date: 10/13/20; Time: 0920; Temp in C: 43; Received on ice (Y/N): Y; Custody Sealed Cooler (Y/N): Y; Samples Intact (Y/N): Y

Sampler Name and Signature: Kevin Stephenson, Will Ladner, Veronica Fay; Signature of Sampler: [Signatures]; Date Signed: 10/13/20



Section A
 Required Client Information: Georgia Power - Coal Combustion Residuals
 Address: 2480 Warner Road Atlanta, GA 30339
 Email: (404)506-7239 Fax
 Phone: (404)506-7239
 Requested Date Date:

Section B
 Required Project Information:
 Report To: Stephen Wilson / Trent Godwin
 Copy To: Whalley Law
 Purchase Order #: Plant Methanus CCR
 Project Name: Plant Methanus CCR
 Project #:

Section C
 Invoice Information:
 Attention:
 Company Name:
 Address:
 City/State:
 Project Manager: Kevin.Herting@pacelab.com
 Project Profile #:
 Regulatory Agency: State / Location GA

CHAIN-OF-CUSTODY / Analytical Request Document

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

ITEM #	MATRIX CODE (see valid codes to)	SAMPLE TYPE (G=GRAB C=COR)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test	Y/N	Requested Analysis Filtered (Y/N)				Residual Chlorine (Y/N)	SAMPLE CONDITIONS					
				Time					Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol			Other	Cl, F, SO4	Metals 6020 App. III & IV	Radium 226 / 228			TDS 3000				
1	GCGR-18	WT G																										
2	MCM-19	WT G	10/13/20	10C2			5	2	3																			
3	MCM-20	WT G	10/13/20	1116			5	2	3																			
4	DDP-1	WT G																										
5	DUP-2	WT G	10/13/20	-			5	2	3																			
6	FBL 10/13/20	WT G	10/13/20	1342			5	2	3																			
7	EQBL 10/13/20	WT G	10/13/20	1350			5	2	3																			
8																												
9																												
10																												
11																												
12																												

Delisted Appendix IV parameters include (As, Ba, Be, Co, Cr, Fe, U, Se, S, Pb)

RECEIVED BY / AFFILIATION: Veronica Fay DATE: 10/13/20 TIME: 1400

ACCEPTED BY / AFFILIATION: EDELX DATE: 10/19/20 TIME: 1400

SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: KEVIN HERTING Will Leader Verónica Fay SIGNATURE of SAMPLER: DATE Signed: 10/13/20

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

PH: 5.04
 PH: 3.72

Quality Control Sample Performance Assessment



www.facean.com

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 10/30/2020
Worklist: 57048
Matrix: DW

Method Blank Assessment	
MB Sample ID	2033124
MB Concentration:	0.012
MB Counting Uncertainty:	0.090
MB MDC:	0.246
MB Numerical Performance Indicator:	0.27
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCS#	Y or N?
LCS57048	Y
LCS57048	11/2/2020
Count Date:	11/2/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.043
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.509
Target Conc. (pCi/L, g, F):	4.719
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.090
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.629
Numerical Performance Indicator:	-1.95
Percent Recovery:	86.66%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS57048
Duplicate Sample I.D.:	LCS57048
Sample Result (pCi/L, g, F):	4.090
Sample Duplicate Result (pCi/L, g, F):	0.629
Sample Duplicate Result (pCi/L, g, F):	4.514
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.620
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.941
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	8.59%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

Sample Matrix Spike Control Assessment	
Sample Collection Date:	MS/MSD 1
Sample I.D.:	MS/MSD 2
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	
Spike Volume Used in MS (mL):	
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	
MS Target Conc. (pCi/L, g, F):	
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/L, g, F):	
MS Spike Uncertainty (calculated):	
MSD Spike Uncertainty (calculated):	
Sample Result:	
Sample Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Result:	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	
MSD Numerical Performance Indicator:	
MS Percent Recovery:	
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	
MSD Status vs Recovery:	
MS/MSD Upper % Recovery Limits:	
MS/MSD Lower % Recovery Limits:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

VAM 11/2/2020

Total Alpha Radium (R104-3 11Feb2019).xls

CUE 11/2/2020

1 of 1

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 10/27/2020
Worklist: 56832
Matrix: DW

Method Blank Assessment	
MB Sample ID	2026040
MB concentration:	0.000
MB Counting Uncertainty:	0.183
MB MDC:	0.503
MB Numerical Performance Indicator:	0.00
MB Status vs Numerical Indicator:	N/A
MB Status vs MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	x	y
Decay Corrected Spike Concentration (pCi/mL): Volume Used (mL): Aliquot Volume (L, g, F): Target Conc. (pCi/L, g, F): Uncertainty (Calculated): Result (pCi/L, g, F): LCS/LCSD Counting Uncertainty (pCi/L, g, F): Numerical Performance Indicator: Percent Recovery: Status vs Numerical Indicator: Upper % Recovery Limits: Lower % Recovery Limits:	LCSD56832	LCSD56832
	10/28/2020	10/28/2020
	19-033	19-033
	24.043	24.043
	0.10	0.10
	0.509	0.508
	4.726	4.731
	0.057	0.057
	4.668	4.338
	0.750	0.729
	-0.15	-1.05
	98.79%	91.70%
	N/A	Pass
	Pass	N/A
	125%	125%
	75%	75%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below:
Sample I.D.:	LCSD56832
Duplicate Sample I.D.:	LCSD56832
Sample Result Counting Uncertainty (pCi/L, g, F):	4.668
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.750
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.338
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.729
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	0.618
Duplicate Percent Recoveries Duplicate RPD:	7.45%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

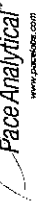
Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator:		
MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

Handwritten signature and date: LAL 10/28/2020

Handwritten date: LAL 10/28/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 10/27/2020
Worklist: 55832
Matrix: DW

Method Blank Assessment	
MB Sample ID	2026040
MB concentration:	0.000
M/B Counting Uncertainty:	0.183
MB MDC:	0.503
MB Numerical Performance Indicator:	0.00
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSD56832	LCSD56832
Count Date:	10/28/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.043
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.509
Target Conc. (pCi/L, g, F):	4.725
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.668
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	-0.15
Numerical Performance Indicator:	98.79%
Percent Recovery:	N/A
Status vs Numerical Indicator:	Pass
Status vs Recovery:	125%
Upper % Recovery Limits:	75%
Lower % Recovery Limits:	

Duplicate Sample Assessment	
Sample I.D.:	92500310001
Duplicate Sample I.D.:	92500310001DUP
Sample Result (pCi/L, g, F):	0.142
Sample Result Counting Uncertainty (pCi/L, g, F):	0.194
Sample Duplicate Result (pCi/L, g, F):	0.497
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.272
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-2.080
Duplicate RPD:	110.93%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

***Batch must be re-prepped due to unacceptable precision. N/A
LAM 10/28/2020

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Sample Matrix Spike Control Assessment		MS/MSD 1	MS/MSD 2
Sample Collection Date:			
Sample I.D.:			
Sample MS I.D.:			
Sample MSD I.D.:			
Spike I.D.:			
MS/MSD Decay Corrected Spike Concentration (pCi/mL):			
Spike Volume Used in MS (mL):			
Spike Volume Used in MSD (mL):			
MS Aliquot (L, g, F):			
MS Target Conc. (pCi/L, g, F):			
MSD Aliquot (L, g, F):			
MSD Target Conc. (pCi/L, g, F):			
MS Spike Uncertainty (calculated):			
MSD Spike Uncertainty (calculated):			
Sample Result Counting Uncertainty (pCi/L, g, F):			
Sample Matrix Spike Result:			
Sample Matrix Spike Duplicate Result:			
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):			
MS Numerical Performance Indicator:			
MSD Numerical Performance Indicator:			
MS Percent Recovery:			
MSD Percent Recovery:			
MS Status vs Numerical Indicator:			
MSD Status vs Numerical Indicator:			
MS Status vs Recovery:			
MSD Status vs Recovery:			
MS/MSD Upper % Recovery Limits:			
MS/MSD Lower % Recovery Limits:			

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	

LAM 10/28/2020

Quality Control Sample Performance Assessment

Analyst **Must Manually Enter All Fields Highlighted in Yellow.**



Test: Ra-228
Analyst: VAL
Date: 10/30/2020
Worklist: 56923
Matrix: WT

Method Blank Assessment	
MB Sample ID	2028435
MB Concentration:	-0.155
MB 2 Sigma CSU:	0.346
MB MDC:	0.847
MB Numerical Performance Indicator:	-0.88
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSID (Y or N)?	Y
Count Date:	LCSID56923		
Spike I.D.:	11/4/2020		
Decay Corrected Spike Concentration (pCi/mL):	20-030		
Volume Used (mL):	37.766		
Aliquot Volume (L, g, F):	0.10		
Target Conc. (pCi/L, g, F):	0.804		
Uncertainty (Calculated):	4.698		
Result (pCi/L, g, F):	0.230		
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	3.514		
Numerical Performance Indicator:	0.949		
Percent Recovery:	-2.34		
Status vs Numerical Indicator:	74.80%		
Status vs Recovery:	N/A		
Upper % Recovery Limits:	Pass		
Lower % Recovery Limits:	135%		
	60%		

Duplicate Sample Assessment	
Sample I.D.:	LCS56923
Duplicate Sample I.D.:	LCSD56923
Sample Result (pCi/L, g, F):	3.514
Sample Duplicate Result (pCi/L, g, F):	0.931
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	3.523
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.014
Duplicate Status vs Numerical Indicator:	0.44%
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

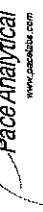
Comments:

Handwritten signature/initials

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):</p> <p>Sample Result: Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result: MS Numerical Performance Indicator: MS Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:</p>		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result: Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:</p>

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Re-228
Analyst: VAL
Date: 10/26/2020
Worklist: 56833
Matrix: WT

Method Blank Assessment	
MB Sample ID	2026041
MB Concentration:	0.194
M/B 2 Sigma CSU:	0.336
MB MDC:	0.733
MB Numerical Performance Indicator:	1.13
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	Y	N
Count Date:	10/28/2020	LCS056633
Spike I.D.:	20-030	10/28/2020
Decay Corrected Spike Concentration (pCi/mL):	37.854	37.854
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.819	0.807
Target Conc. (pCi/L, g, F):	4.623	4.690
Uncertainty (Calculated):	0.227	0.230
Result (pCi/L, g, F):	3.770	3.236
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.903	0.805
Numerical Performance Indicator:	-1.80	-3.40
Percent Recovery:	81.55%	69.01%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS056633
Duplicate Sample I.D.:	LCS056633
Sample Result (pCi/L, g, F):	3.770
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.903
Sample Duplicate Result (pCi/L, g, F):	3.236
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.805
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	0.665
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	16.66%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

10-29-20

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

January 12, 2021

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCMANUS CCR
Pace Project No.: 92514770

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on January 05, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCMANUS CCR

Pace Project No.: 92514770

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT MCMANUS CCR

Pace Project No.: 92514770

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92514770001	MCM-05	Water	01/04/21 15:03	01/05/21 11:20
92514770002	FBL010421	Water	01/04/21 16:21	01/05/21 11:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCMANUS CCR

Pace Project No.: 92514770

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92514770001	MCM-05	EPA 6010D	SH1	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92514770002	FBL010421	EPA 6010D	KQ	1	PASI-A
		EPA 6020B	JOR	8	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: PLANT MCMANUS CCR

Pace Project No.: 92514770

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92514770001	MCM-05					
	Performed by	CUSTOME			01/05/21 14:56	
		R				
	pH	6.66	Std. Units		01/05/21 14:56	
EPA 6010D	Calcium	104	mg/L	0.50	01/06/21 23:11	M1
EPA 6020B	Arsenic	0.0072	mg/L	0.0050	01/08/21 13:42	
EPA 6020B	Barium	0.051	mg/L	0.010	01/08/21 13:42	
EPA 6020B	Boron	0.98	mg/L	0.50	01/08/21 13:42	
EPA 6020B	Lithium	0.043J	mg/L	0.030	01/08/21 13:42	
SM 2540C-2011	Total Dissolved Solids	7750	mg/L	1250	01/06/21 17:06	
EPA 300.0 Rev 2.1 1993	Chloride	2460	mg/L	50.0	01/08/21 17:04	M6
EPA 300.0 Rev 2.1 1993	Sulfate	262	mg/L	50.0	01/08/21 17:04	M6
92514770002	FBL010421					
EPA 6020B	Barium	0.00050J	mg/L	0.010	01/08/21 14:09	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCMANUS CCR
 Pace Project No.: 92514770

Sample: MCM-05		Lab ID: 92514770001		Collected: 01/04/21 15:03		Received: 01/05/21 11:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		01/05/21 14:56		
pH	6.66	Std. Units			1		01/05/21 14:56		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	104	mg/L	0.50	0.47	5	01/06/21 00:59	01/06/21 23:11	7440-70-2	M1
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0072	mg/L	0.0050	0.0017	20	01/06/21 00:52	01/08/21 13:42	7440-38-2	
Barium	0.051	mg/L	0.010	0.0043	20	01/06/21 00:52	01/08/21 13:42	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.0010	20	01/06/21 00:52	01/08/21 13:42	7440-41-7	
Boron	0.98	mg/L	0.50	0.12	20	01/06/21 00:52	01/08/21 13:42	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.0010	20	01/06/21 00:52	01/08/21 13:42	7440-48-4	
Lead	ND	mg/L	0.0050	0.0015	20	01/06/21 00:52	01/08/21 13:42	7439-92-1	
Lithium	0.043J	mg/L	0.030	0.0078	20	01/06/21 00:52	01/08/21 13:42	7439-93-2	
Selenium	ND	mg/L	0.010	0.0012	20	01/06/21 00:52	01/08/21 13:42	7782-49-2	
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	7750	mg/L	1250	1250	1		01/06/21 17:06		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	2460	mg/L	50.0	30.0	50		01/08/21 17:04	16887-00-6	M6
Fluoride	ND	mg/L	0.10	0.050	1		01/08/21 10:40	16984-48-8	M1
Sulfate	262	mg/L	50.0	25.0	50		01/08/21 17:04	14808-79-8	M6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PLANT MCMANUS CCR

Pace Project No.: 92514770

Sample: FBL010421		Lab ID: 92514770002		Collected: 01/04/21 16:21	Received: 01/05/21 11:20	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Calcium	ND	mg/L	0.10	0.094	1	01/06/21 00:59	01/06/21 14:30	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	ND	mg/L	0.0050	0.000087	1	01/06/21 00:52	01/08/21 14:09	7440-38-2		
Barium	0.00050J	mg/L	0.010	0.00021	1	01/06/21 00:52	01/08/21 14:09	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	01/06/21 00:52	01/08/21 14:09	7440-41-7		
Boron	ND	mg/L	0.025	0.0062	1	01/06/21 00:52	01/08/21 14:09	7440-42-8		
Cobalt	ND	mg/L	0.0050	0.000050	1	01/06/21 00:52	01/08/21 14:09	7440-48-4		
Lead	ND	mg/L	0.0050	0.000077	1	01/06/21 00:52	01/08/21 14:09	7439-92-1		
Lithium	ND	mg/L	0.030	0.00039	1	01/06/21 00:52	01/08/21 14:09	7439-93-2		
Selenium	ND	mg/L	0.010	0.000061	1	01/06/21 00:52	01/08/21 14:09	7782-49-2		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville								
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		01/06/21 17:06			
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		01/08/21 11:28	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		01/08/21 11:28	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		01/08/21 11:28	14808-79-8		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCMANUS CCR

Pace Project No.: 92514770

QC Batch: 590829

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A

Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92514770001, 92514770002

METHOD BLANK: 3119327

Matrix: Water

Associated Lab Samples: 92514770001, 92514770002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	01/06/21 14:10	

LABORATORY CONTROL SAMPLE: 3119328

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	4.7	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3119329 3119330

Parameter	Units	3119329		3119330		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	104	5	5	109	107	98	60	75-125	2	20 M1

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCMANUS CCR

Pace Project No.: 92514770

QC Batch: 590831

Analysis Method: EPA 6020B

QC Batch Method: EPA 3010A

Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92514770001, 92514770002

METHOD BLANK: 3119335

Matrix: Water

Associated Lab Samples: 92514770001, 92514770002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	01/08/21 13:26	
Barium	mg/L	ND	0.010	0.00021	01/08/21 13:26	
Beryllium	mg/L	ND	0.0030	0.000050	01/08/21 13:26	
Boron	mg/L	ND	0.025	0.0062	01/08/21 13:26	
Cobalt	mg/L	ND	0.0050	0.000050	01/08/21 13:26	
Lead	mg/L	ND	0.0050	0.000077	01/08/21 13:26	
Lithium	mg/L	ND	0.030	0.00039	01/08/21 13:26	
Selenium	mg/L	ND	0.010	0.000061	01/08/21 13:26	

LABORATORY CONTROL SAMPLE: 3119336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	101	80-120	
Barium	mg/L	0.05	0.050	100	80-120	
Beryllium	mg/L	0.01	0.010	101	80-120	
Boron	mg/L	0.05	0.049	98	80-120	
Cobalt	mg/L	0.01	0.010	103	80-120	
Lead	mg/L	0.05	0.050	100	80-120	
Lithium	mg/L	0.05	0.051	103	80-120	
Selenium	mg/L	0.05	0.050	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3119337 3119338

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92514770002	Result	Spike Conc.	Spike Conc.						
Arsenic	mg/L	ND	0.01	0.01	0.010	0.010	102	102	75-125	0	20
Barium	mg/L	0.00050J	0.05	0.05	0.051	0.051	102	101	75-125	0	20
Beryllium	mg/L	ND	0.01	0.01	0.010	0.010	101	101	75-125	0	20
Boron	mg/L	ND	0.05	0.05	0.053	0.054	103	104	75-125	2	20
Cobalt	mg/L	ND	0.01	0.01	0.010	0.010	103	102	75-125	1	20
Lead	mg/L	ND	0.05	0.05	0.050	0.050	101	100	75-125	0	20
Lithium	mg/L	ND	0.05	0.05	0.051	0.052	103	104	75-125	1	20
Selenium	mg/L	ND	0.05	0.05	0.051	0.050	102	100	75-125	1	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCMANUS CCR

Pace Project No.: 92514770

QC Batch: 591060

Analysis Method: SM 2540C-2011

QC Batch Method: SM 2540C-2011

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92514770001, 92514770002

METHOD BLANK: 3120507

Matrix: Water

Associated Lab Samples: 92514770001, 92514770002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	01/06/21 17:05	

LABORATORY CONTROL SAMPLE: 3120508

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	251	260	104	90-110	

SAMPLE DUPLICATE: 3120509

Parameter	Units	92514543001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4170	4530	8	25	

SAMPLE DUPLICATE: 3120510

Parameter	Units	92514623008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	139	143	3	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PLANT MCMANUS CCR
Pace Project No.: 92514770

QC Batch: 591206 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92514770001, 92514770002

METHOD BLANK: 3121081 Matrix: Water
Associated Lab Samples: 92514770001, 92514770002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	01/07/21 13:26	
Fluoride	mg/L	ND	0.10	0.050	01/07/21 13:26	
Sulfate	mg/L	ND	1.0	0.50	01/07/21 13:26	

LABORATORY CONTROL SAMPLE: 3121082

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.3	101	90-110	
Fluoride	mg/L	2.5	2.6	102	90-110	
Sulfate	mg/L	50	50.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3121083 3121084

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92514770001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	2460	50	50	2520	2510	101	81	90-110	0	10	M6	
Fluoride	mg/L	ND	2.5	2.5	ND	ND	0	0	90-110		10	M1	
Sulfate	mg/L	262	50	50	294	299	64	75	90-110	2	10	M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3121085 3121086

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92515188004	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	12.6	50	50	63.5	65.7	102	106	90-110	3	10		
Fluoride	mg/L	0.055J	2.5	2.5	2.6	2.7	100	105	90-110	5	10		
Sulfate	mg/L	ND	50	50	50.0	52.4	100	105	90-110	5	10		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCMANUS CCR

Pace Project No.: 92514770

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCMANUS CCR

Pace Project No.: 92514770

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92514770001	MCM-05				
92514770001	MCM-05	EPA 3010A	590829	EPA 6010D	590848
92514770002	FBL010421	EPA 3010A	590829	EPA 6010D	590848
92514770001	MCM-05	EPA 3010A	590831	EPA 6020B	590847
92514770002	FBL010421	EPA 3010A	590831	EPA 6020B	590847
92514770001	MCM-05	SM 2540C-2011	591060		
92514770002	FBL010421	SM 2540C-2011	591060		
92514770001	MCM-05	EPA 300.0 Rev 2.1 1993	591206		
92514770002	FBL010421	EPA 300.0 Rev 2.1 1993	591206		

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt (SCUR)

Document Revised: October 28, 2020
Page 1 of 2

Document No.:
F-CAR-CS-033-Rev.07

Issuing Authority:
Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition
Upon Receipt

Client Name:

Duke Energy

Project:

WO#: **92514770**

Courier:

Fed Ex UPS USPS Client
 Commercial Pace Other: _____



92514770

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 10-21-18

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: 93-7071 Type of Ice: Wet Blue None

Cooler Temp:

0.1 Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 0.1

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Yes No

Did samples originate from a foreign source (Internationally, including Hawaii and Puerto Rico)? Yes No

		Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4. <u>3 day TAT</u>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
Headspace in VOA Vials (>5.6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project #

WO# : 92514770

PM: KLH1

Due Date: 01/08/21

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

CLIENT: GA-GA Power

**Bottom half of box is to list number of bottles

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGRU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(D63A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Uhp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH4)2SO4 (9.3-9.7)	AG9U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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

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

Section A Required Client Information: Georgia Power - Coal Combustion Res. 2480 Maister Road Atlanta, GA 30339

Section B Required Project Information: Report for: Stephen Wilson / Trent Godwin

Section C Invoice Information: Analytical: Company Name: Price Quoted: Kevin Herring

Requested Due Date: 3-Day FAT

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9, -) Sample IDs must be unique	MATRIX Drinking Water Waste Water Surface Water Other Tanks	CODE DW WW SW AW OT TS	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	Analysis Test	Y/N	Residual Chlorine (Y/N)									
				START DATE	END DATE															
1	INCOMOS			WT	G	1/14/21	1503	5	2	3										
2	REL-D10421			WT	G	1/14/21	1620	5	2	3										
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
ADDITIONAL COMMENTS		RELEASING BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS										
Default App IV parameters include (As, Ba, Be, Ca, Pb, Li, Se, & Pd)		William Locker / Resolute		1/14/21	1720	A. Kolar / PACE / AVR		1/14/21	1720	D.I		Y	N	Y						

SAMPLER NAME AND SIGNATURE: William Locker
 PRINT NAME OF SAMPLER: William Locker
 SIGNATURE OF SAMPLER: *William Locker*
 DATE SIGNED: 1/14/21

January 25, 2021

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT MCMANUS CCR RADS
Pace Project No.: 92514705

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on January 05, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PLANT MCMANUS CCR RADS

Pace Project No.: 92514705

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PLANT MCMANUS CCR RADS

Pace Project No.: 92514705

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92514705001	MCM-05	Water	01/04/21 15:03	01/05/21 11:20
92514705002	FBL010421	Water	01/04/21 16:20	01/05/21 11:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PLANT MCMANUS CCR RADS

Pace Project No.: 92514705

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92514705001	MCM-05	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92514705002	FBL010421	EPA 9315	JJY	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: PLANT MCMANUS CCR RADS

Pace Project No.: 92514705

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92514705001	MCM-05					
EPA 9315	Radium-226	3.87 ± 0.783 (0.487)	pCi/L		01/14/21 19:16	
EPA 9320	Radium-228	C:88% T:NA 1.97 ± 0.638 (0.899)	pCi/L		01/13/21 14:41	
Total Radium Calculation	Total Radium	C:76% T:87% 5.84 ± 1.42 (1.39)	pCi/L		01/15/21 09:29	
92514705002	FBL010421					
EPA 9315	Radium-226	0.237 ± 0.150 (0.258)	pCi/L		01/14/21 19:16	
EPA 9320	Radium-228	C:86% T:NA -0.0890 ± 0.321 (0.766)	pCi/L		01/13/21 14:41	
Total Radium Calculation	Total Radium	C:76% T:86% 0.237 ± 0.471 (1.02)	pCi/L		01/15/21 09:29	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCMANUS CCR RADS

Pace Project No.: 92514705

Sample: MCM-05 **Lab ID: 92514705001** Collected: 01/04/21 15:03 Received: 01/05/21 11:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	3.87 ± 0.783 (0.487) C:88% T:NA	pCi/L	01/14/21 19:16	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.97 ± 0.638 (0.899) C:76% T:87%	pCi/L	01/13/21 14:41	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	5.84 ± 1.42 (1.39)	pCi/L	01/15/21 09:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT MCMANUS CCR RADS

Pace Project No.: 92514705

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FBL010421 Lab ID: 92514705002 Collected: 01/04/21 16:20 Received: 01/05/21 11:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.237 ± 0.150 (0.258) C:86% T:NA	pCi/L	01/14/21 19:16	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.0890 ± 0.321 (0.766) C:76% T:86%	pCi/L	01/13/21 14:41	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.237 ± 0.471 (1.02)	pCi/L	01/15/21 09:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCMANUS CCR RADS

Pace Project No.: 92514705

QC Batch: 430546

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92514705001, 92514705002

METHOD BLANK: 2079708

Matrix: Water

Associated Lab Samples: 92514705001, 92514705002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0781 ± 0.154 (0.302) C:84% T:NA	pCi/L	01/14/21 16:31	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT MCMANUS CCR RADS

Pace Project No.: 92514705

QC Batch: 430167

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92514705001, 92514705002

METHOD BLANK: 2077766

Matrix: Water

Associated Lab Samples: 92514705001, 92514705002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.347 ± 0.391 (0.816) C:77% T:69%	pCi/L	01/13/21 14:38	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PLANT MCMANUS CCR RADS

Pace Project No.: 92514705

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT MCMANUS CCR RADS

Pace Project No.: 92514705

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92514705001	MCM-05	EPA 9315	430546		
92514705002	FBL010421	EPA 9315	430546		
92514705001	MCM-05	EPA 9320	430167		
92514705002	FBL010421	EPA 9320	430167		
92514705001	MCM-05	Total Radium Calculation	431068		
92514705002	FBL010421	Total Radium Calculation	431068		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: Duke Energy Project: WO#: 92514705

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



Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 1-2-21/HK

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: IR Gun ID: 93-7071 Type of Ice: Wet Blue None

Cooler Temp: 0.1 Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 0.1

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

		Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4. <u>3 day TAT</u>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRP Review: _____

Date: _____



Document Name:
 Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:

WO# : 92514705

Project #

PM: KLH1 Due Date: 01/26/21
 CLIENT: GA-GA Power

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Item #	Item Description	1	2	3	4	5	6	7	8	9	10	11	12
BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)													
BP3U-250 mL Plastic Unpreserved (N/A)													
BP2U-500 mL Plastic Unpreserved (N/A)													
BP1U-1 liter Plastic Unpreserved (N/A)													
BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)													
BP3N-250 mL plastic HNO3 (pH < 2)													
BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)													
BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)													
WGFLU-Wide-mouthed Glass Jar Unpreserved													
AG1U-1 liter Amber Unpreserved (N/A) (Cl-)													
AG1H-1 liter Amber HCl (pH < 2)													
AG3U-250 mL Amber Unpreserved (N/A) (Cl-)													
AG3S-1 liter Amber H2SO4 (pH < 2)													
AG3S-250 mL Amber H2SO4 (pH < 2)													
AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)													
DG9H-40 mL VOA HCl (N/A)													
VG9T-40 mL VOA Na2S2O3 (N/A)													
VG9U-40 mL VOA Urea (N/A)													
DG9P-40 mL VOA H3PO4 (N/A)													
VOAK (6 vials per kit)-503S kit (N/A)													
V/GK (3 vials per kit)-VPH/Gas kit (N/A)													
SP5T-125 mL Sterile Plastic (N/A - lab)													
SP2T-250 mL Sterile Plastic (N/A - lab)													
BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)													
AG8U-100 mL Amber Unpreserved vials (N/A)													
V5GU-20 mL Scintillation vials (N/A)													
DG9U-40 mL Amber Unpreserved vials (N/A)													

BPIN

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Section B Required Project Information: Section C Invoice Information: Page: 1 Of 1

Required Client Information: Company: Georgia Power - Coal Combustion Res Address: 2480 Manor Road Atlanta, GA 30339 Phone: (404) 506-7239 Fax: _____ Email To: _____ Requested Date Offer: 3-Day TAT	Required Project Information: Report To: Stephen Wilson / Trent Godwin Copy To: _____ Purchase Order #: _____ Project Name: Plant McManus CCR Project Number: _____
Invoice Information: Assessor: _____ Company Name: _____ Address: _____ P.O. Box: _____ Price Project Manager: Kevin Herring Plant Profile #: _____	Requested Analysis Estimated (Y/N): _____ Residual Chlorine (Y/N): _____

ITEM #	SAMPLE ID Date Character per box A-Z, 0-9, - Sample IDs must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAD C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analytes Test	Y/N	Residual Chlorine (Y/N)	PH: E.G.G	
				START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol					Other
1	MCM-05	WT G	G	1/4/21	1503		5											
2	TR1210421	WT G	G	1/4/21	1626		5											
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

ADDITIONAL COMMENTS: Detected App IV parameters include As, Ba, Be, Ca, Pb, U, Se, & Ra	RE-INDEXED BY / RE-EVALUATION: William Leaker / Resolute 1/4/21
DATE: 1/4/21 TIME: 1720 FedEx	ACCEPTED BY / AFFILIATION: A. Rucker / PRICE / AVL 1/4/21 1720
SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: William Leaker SIGNATURE of SAMPLER: <i>William Leaker</i>	
DATE Signed: 1/4/21	
TEMP in C	0.1
Received on Ice (Y/N)	Y
Custody Sealed Cooler (Y/N)	N
Samples Intact (Y/N)	Y

**Stage 2A Data Verification Report
Georgia Power
McManus Fossil Plant
Coal Combustion Residuals Project
Groundwater Samples**

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the 15 groundwater samples collected as part of the August 2020 Ash Pond Scan sampling at the Georgia Power McManus Fossil Plant facility. These samples were collectively analyzed by Pace Analytical Services, LLC (Pace) in Asheville, North Carolina (Pace Asheville) and Huntersville, North Carolina (Pace Charlotte) for total metals by SW-846 Method 6010D and 6020B; for mercury by SW-846 Method 7470A; for total dissolved solids (TDS) by Standard Method (SM) 2540C; and for anions (specifically, chloride, fluoride, and sulfate) by US EPA Method 300.0. In addition, these samples were collectively analyzed by Pace of Greensburg, Pennsylvania (Pace Pittsburgh), for total radium-226 by SW-846 Method 9315, for total radium-228 by SW-846 Method 9320, and for combined radium-226+228 by calculation.

This review was performed with guidance from the US EPA Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (November 2001); the US EPA Region IV Data Validation Standard Operating Procedures (SOPs; US EPA Region IV, September 2011); and the applied analytical methods. These validation guidance documents, with the exception of the analytical methods, specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the SM, SW-846, and US EPA methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the SM, SW-846, and US EPA methods utilized by the laboratory.

Summary

The analytical results and associated laboratory quality control (QC) samples were reviewed to determine the integrity of the reported analytical results and to verify that the data met the established data quality objectives.

The samples collected on 8/26/2020 were evaluated as part of this QA review.

The following samples were evaluated as part of this QA review: MCM-01, MCM-02, MCM-04, MCM-05, MCM-06, MCM-07, MCM-11, MCM-12, MCM-14, MCM-15, MCM-16, MCM-17, MCM-18, MCM-19, and MCM-20.

The following Pace inorganic SDG was evaluated as part of this QA review: 92493014.

The following Pace radiological SDG was evaluated as part of this QA review: 92493016.

All data are considered usable as reported, or usable after integration of data validation qualifications.



Inorganic and Radiological Data Review

Data validation was performed for these samples based on the sample results, summary QC data, and raw data provided by the laboratory. The findings offered in this report for the inorganic analyses are based upon a review of the following QC measures:

- Sample condition upon laboratory receipt
- Chain-of-Custody (COC) Records
- Blank analysis results
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries
- Laboratory duplicate precision
- Sample holding times
- Case Narratives
- Chemical yield
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries and precision
- Field duplicate precision

The above QC measures were evaluated against the analytical method requirements and QC acceptance criteria. The data were validated based on guidance from the US EPA Region IV Data Validation SOPs, the referenced procedures, and were qualified as appropriate as described in the sections below.

Comments and Exceptions

1. In all SDGs, the laboratory did not provide a Case Narrative associated with the inorganic and radiological analyses. As this item was not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
2. In SDG 92493014, the laboratory did not provide the subcontracted COC Record or the Sample Login Receipt Checklist from Pace Asheville to Pace Charlotte. As these items were not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
3. In SDG 92493016, the laboratory did not provide the subcontracted COC Record or the Sample Login Receipt Checklist from Pace Asheville to Pace Pittsburgh. As these items were not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
4. In the anion fraction of SDG 92493014, the laboratory performed matrix QC (MS/MSD) analyses on an equipment blank. Matrix QC analyses are performed to evaluate the impact of matrix interferences on target analyte results in investigative samples, which would not be present in an equipment blank sample. The data reviewer evaluated the MS/MSD analyses performed on the field blank and equipment blank as an LCS/LCSD analysis.
5. In the metals fraction of SDG 92493014, the reported recovery concentration of boron in the MS/MSD was reported as ND. Due to the LIMS limitation the percent recovery is calculated using the on-instrument concentration. The boron recovery listed as ND, indicates the percent recovery is 0%; however, the parent sample was diluted twenty-

fold, raising the sample's MDL. As a result, boron was spiked in the MS/MSD below the sample-specific MDL. Qualification due to this issue was not warranted.

6. The data validator applied qualification to combined radium-226+228 based upon the QC samples associated with the analyses of the individual isotopes, radium-226 and radium-228. The electronic data deliverable (EDD) and the database only include the laboratory results for the combined radium-226+228; therefore, qualification of the individual isotopes is not addressed in this QA review.
7. SW-846 Method 9315 includes all alpha-emitting isotopes of radium. In order to analyze for only radium-226, a 21-day ingrowth period must be used. The radium-226 reported by the laboratory did not undergo a 21-day ingrowth; therefore, the results reported as radium-226 potentially contain additional alpha-emitting radium isotopes and could be high biased.
8. Combined radium-226+228 was reported as the summation of the calculated activities for radium-226 and radium-228. As consistent with routine radiological reporting conventions, negative activities were reported for the radium-226 and radium-228 analyses; however, all negative activities were entered as zero in the calculation of combined radium-226+228 activity.
9. The combined radium-226+228 sample-specific minimum detectable concentration (MDC) was reported as the summation of the MDCs for radium-226 and radium-228. Consequently, there may be instances where a detection was observed in one of the individual isotopes but the combined radium-226+228 result was reported as "not-detected" due to the laboratory's reporting convention for combined radium-226+228.
10. The combined radium-226+228 result uncertainty was reported as the summation of the calculated uncertainties for radium-226 and radium-228. If routine statistical uncertainty reporting conventions were followed, the result uncertainty would have been reported as the root sum square (RSS; the square root of the sum of the squared individual uncertainties).
11. The laboratory did not flag results < the MDC as "not-detected" in the data package provided. The data validator qualified these samples as "U" on the data tables.
12. The following field duplicate pairs (see table) were submitted and analyzed for inorganic and radiological parameters with this data set. Acceptable precision and sample representativeness were demonstrated by the reported results in the field duplicate pair evaluation (the relative percent difference [RPD] between results was $\leq 20\%$ when both results were $\geq 5\times$ the reporting limit [RL], the difference between results was \leq the RL when at least one result was $< 5\times$ the RL, or replicate error ratio [RER] < 3).

<u>Laboratory SDG(s)</u>	<u>Sample</u>	<u>Field Duplicate</u>
92493014 92493016	MCM-04	DUP-1
92493014 92493016	MCM-20	DUP-2

Overall Assessment of Data

Based on a review of the data, qualification of data was warranted as noted below.

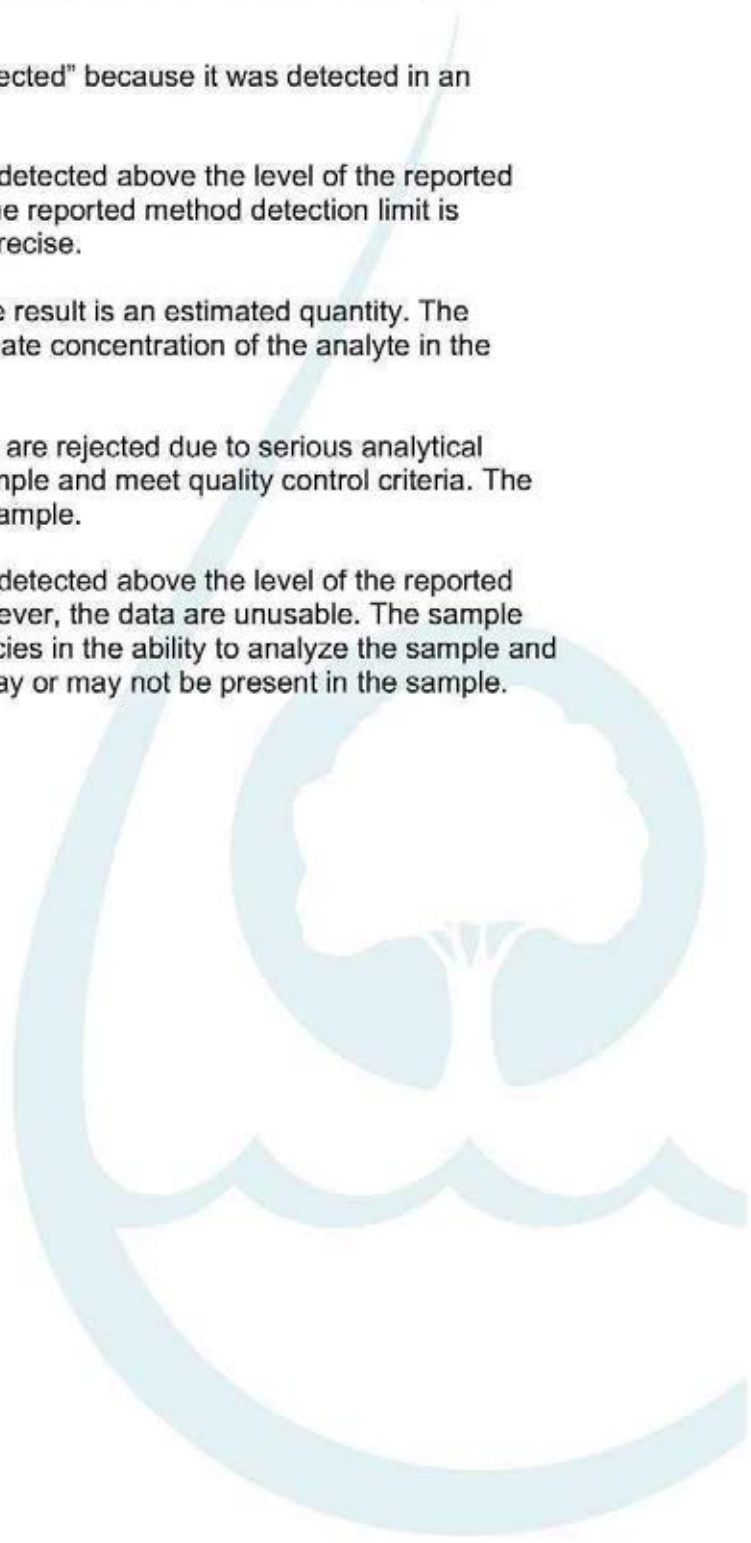
<u>Laboratory SDG(s)</u>	<u>Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier</u>	<u>Reason(s) for Qualification</u>
92493014	MCM-11, MCM-12, MCM-18, and MCM-20	fluoride	J	M+ - High MS/MSD recoveries MP- MS/MSD imprecision
92493016	MCM-04 and MCM-12	combined radium-226+228	J	BF – Field Blank Contamination BE – Equipment Blank contamination
92493016	MCM-06, MCM-17, MCM-18, MCM-19, and MCM-20	combined radium-226+228	J	L+ - High LCSD recovery

- All inorganic positive results reported between the method detection limit (MDL) and RL have been flagged "J".
- All radiological results reported below the MDC have been flagged "U."

Report prepared by: Abigail Bossbaly M.S., Quality Assurance Chemist
 Report reviewed by: Alyssa M. Reed, Senior Quality Assurance Chemist/Project Manager
 Report approved by: David I. Thal, CEAC, CQA, Principal Chemist
 Date: 11/4/2020

INORGANIC DATA QUALIFIERS

- U - The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit.
- U* - This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ - The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J - The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R - The data are unusable. The sample results are rejected due to serious analytical deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.
- UR - The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.



Reason Codes and Explanations

Reason Code	Explanation
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
BN	Negative laboratory blank contamination.
C	Initial and/or continuing calibration issue, indeterminate bias.
C+	Initial and/or continuing calibration issue. The result may be biased high.
C-	Initial and/or continuing calibration issue. The result may be biased low.
FD	Field duplicate imprecision.
FG	Total versus dissolved imprecision.
H	Holding time exceeded.
I	Internal standard recovery outside of acceptance limits.
L	LCS and LCSD recoveries outside of acceptance limits, indeterminate bias.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits, indeterminate bias.
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.
MP	MS/MSD imprecision.
P	Post-digestion spike recoveries outside of acceptance limits, indeterminate bias.
P+	Post-digestion spike recovery outside of acceptance limits. The result may be biased high.
P-	Post-digestion spike recovery outside of acceptance limits. The result may be biased low.
Q	Chemical preservation issue.
R	RL standards outside of acceptance limits, indeterminate bias.
R+	RL standard(s) outside of acceptance limits. The result may be biased high.
R-	RL standard(s) outside of acceptance limits. The result may be biased low.
T	Temperature preservation issue.
SD	Serial dilution imprecision.
Y	Chemical yields outside of acceptance limits, indeterminate bias.
Y+	Chemical yield(s) outside of acceptance limits. The result may be biased high.
Y-	Chemical yield(s) outside of acceptance limits. The result may be biased low.
ZZ	Other

**Stage 2A Data Verification Report
Georgia Power
McManus Fossil Plant
Coal Combustion Residuals Project
Groundwater Samples**

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the 16 groundwater samples collected as part of the October 2020 Semi-Annual Sampling at the Georgia Power McManus Fossil Plant facility. These samples were collectively analyzed by Pace Analytical Services, LLC (Pace) in Asheville, North Carolina (Pace Asheville) for total metals by SW-846 Method 6010D and 6020B; for mercury by SW-846 Method 7470A; for total dissolved solids (TDS) by Standard Method (SM) 2540C; and for anions (specifically, chloride, fluoride, and sulfate) by US EPA Method 300.0.

This review was performed with guidance from the US EPA Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (November 2001); the US EPA Region IV Data Validation Standard Operating Procedures (SOPs; US EPA Region IV, September 2011); and the applied analytical methods. These validation guidance documents, with the exception of the analytical methods, specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the SM, SW-846, and US EPA methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the SM, SW-846, and US EPA methods utilized by the laboratory.

Summary

The analytical results and associated laboratory quality control (QC) samples were reviewed to determine the integrity of the reported analytical results and to verify that the data met the established data quality objectives.

The samples collected on 10/12/2020 through 10/15/2020 were evaluated as part of this QA review.

The following samples were evaluated as part of this QA review: MCM-01, MCM-02, MCM-04, MCM-05, MCM-06, MCM-07, MCM-11, MCM-12, MCM-14, MCM-15, MCM-16, MCM-17, MCM-18, MCM-19, MCM-20, and DPZ-2.

The following Pace inorganic SDG was evaluated as part of this QA review: 92500314.

All data are considered usable as reported, or usable after integration of data validation qualifications.



Inorganic Data Review

Data validation was performed for these samples based on the sample results, summary QC data, and raw data provided by the laboratory. The findings offered in this report for the inorganic analyses are based upon a review of the following QC measures:

- Sample condition upon laboratory receipt
- Chain-of-Custody (COC) Records
- Blank analysis results
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries and precision
- Field duplicate precision
- Sample holding times
- Case Narratives
- Laboratory control sample (LCS) recoveries
- Laboratory duplicate precision

The above QC measures were evaluated against the analytical method requirements and QC acceptance criteria. The data were validated based on guidance from the US EPA Region IV Data Validation SOPs, the referenced procedures, and were qualified as appropriate as described in the sections below.

Comments and Exceptions

1. In SDG 92500314, the laboratory did not provide a Case Narrative associated with the inorganic analyses. As this item was not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
2. In SDG 92500314, the laboratory did not provide the subcontracted COC Record or the Sample Login Receipt Checklist from Pace Asheville to Pace Charlotte. As these items were not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
3. In the anion fraction of SDG 92500314, the laboratory performed matrix QC (MS/MSD) analyses on an equipment blank. Matrix QC analyses are performed to evaluate the impact of matrix interferences on target analyte results in investigative samples, which would not be present in a field or equipment blank sample. The data reviewer evaluated the MS/MSD analyses performed on the equipment blank as an LCS/LCSD analysis.
4. The following field duplicate pairs (see table) were submitted and analyzed for inorganic parameters with this data set. Acceptable precision and sample representativeness were demonstrated by the reported results in the field duplicate pair evaluation (the relative percent difference [RPD] between results was $\leq 20\%$ when both results were $\geq 5\times$ the reporting limit [RL], the difference between results was \leq the RL when at least one result was $< 5\times$ the RL).

<u>Laboratory SDG(s)</u>	<u>Sample</u>	<u>Field Duplicate</u>
92500314	MCM-11	DUP-1
92500314	MCM-16	DUP-2

Overall Assessment of Data

Based on a review of the data, qualification of data was warranted as noted below.

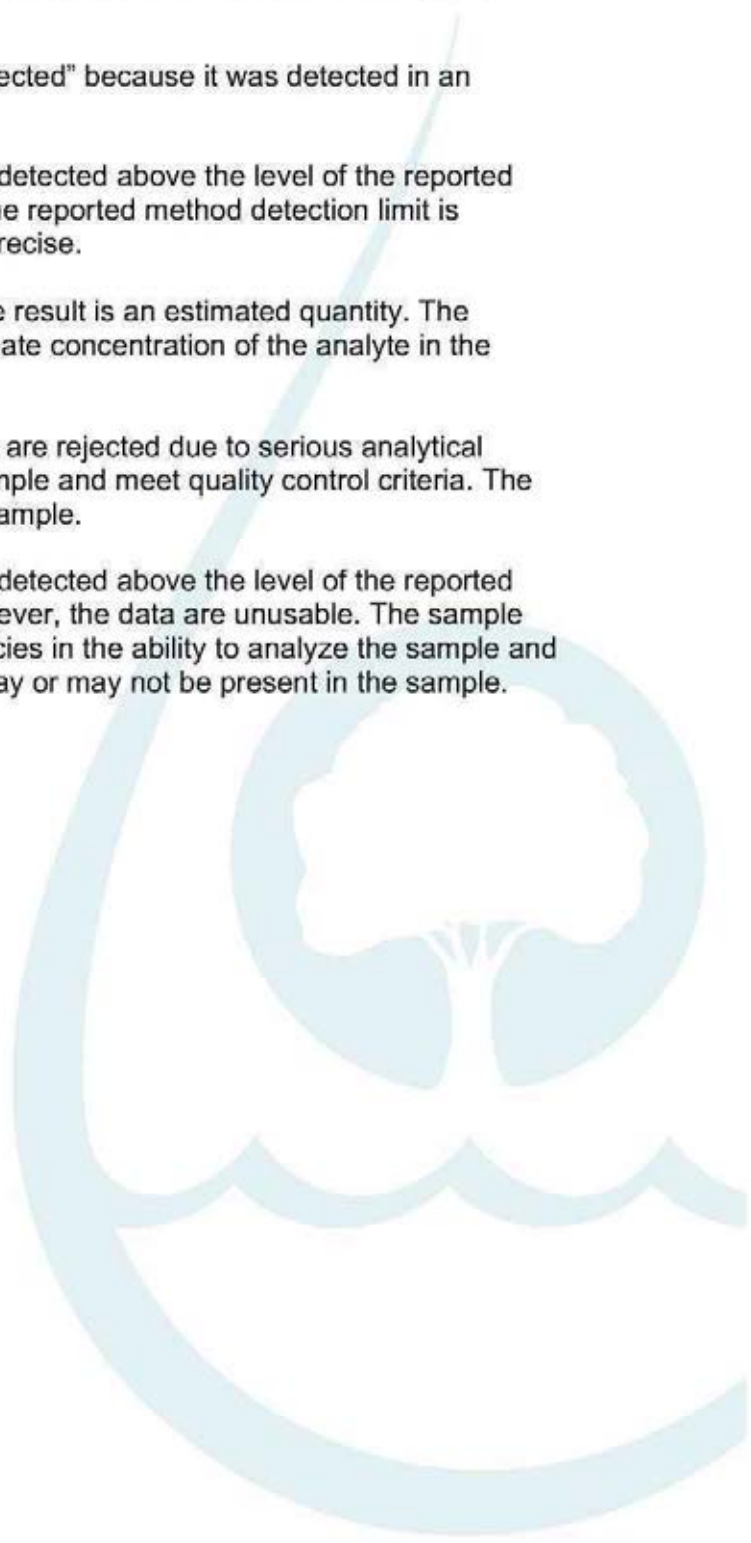
<u>Laboratory SDG(s)</u>	<u>Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier</u>	<u>Reason(s) for Qualification</u>
92500314	MCM-17, MCM-19, and MCM-20	barium	J	M+ - High MS recovery
92500314	MCM-17, MCM-19, and MCM-20	selenium	J/UJ	M- - Low MS/MSD recoveries

- All inorganic positive results reported between the method detection limit (MDL) and RL have been flagged "J".

Report prepared by: Abigail Bossbaly M.S., Quality Assurance Chemist
 Report reviewed by: Alyssa M. Reed, Senior Quality Assurance Chemist/Project Manager
 Report approved by: David I. Thal, CEAC, CQA, Principal Chemist
 Date: 11/11/2020

INORGANIC DATA QUALIFIERS

- U - The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit.
- U* - This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ - The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J - The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R - The data are unusable. The sample results are rejected due to serious analytical deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.
- UR - The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.



Reason Codes and Explanations

Reason Code	Explanation
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
BN	Negative laboratory blank contamination.
C	Initial and/or continuing calibration issue, indeterminate bias.
C+	Initial and/or continuing calibration issue. The result may be biased high.
C-	Initial and/or continuing calibration issue. The result may be biased low.
FD	Field duplicate imprecision.
FG	Total versus dissolved imprecision.
H	Holding time exceeded.
I	Internal standard recovery outside of acceptance limits.
L	LCS and LCSD recoveries outside of acceptance limits, indeterminate bias.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits, indeterminate bias.
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.
MP	MS/MSD imprecision.
P	Post-digestion spike recoveries outside of acceptance limits, indeterminate bias.
P+	Post-digestion spike recovery outside of acceptance limits. The result may be biased high.
P-	Post-digestion spike recovery outside of acceptance limits. The result may be biased low.
Q	Chemical preservation issue.
R	RL standards outside of acceptance limits, indeterminate bias.
R+	RL standard(s) outside of acceptance limits. The result may be biased high.
R-	RL standard(s) outside of acceptance limits. The result may be biased low.
T	Temperature preservation issue.
SD	Serial dilution imprecision.
Y	Chemical yields outside of acceptance limits, indeterminate bias.
Y+	Chemical yield(s) outside of acceptance limits. The result may be biased high.
Y-	Chemical yield(s) outside of acceptance limits. The result may be biased low.
ZZ	Other

**Stage 2A Data Verification Report
Georgia Power
McManus Fossil Plant
Coal Combustion Residuals Project
Groundwater Samples**

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the 16 groundwater samples collected as part of the October 2020 semi-annual sampling at the Georgia Power McManus Fossil Plant facility. These samples were collectively analyzed by Pace of Greensburg, Pennsylvania (Pace Pittsburgh), for total radium-226 by SW-846 Method 9315, for total radium-228 by SW-846 Method 9320, and for combined radium-226+228 by calculation.

This review was performed with guidance from the US EPA Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (November 2001); the US EPA Region IV Data Validation Standard Operating Procedures (SOPs; US EPA Region IV, September 2011); and the applied analytical methods. These validation guidance documents, with the exception of the analytical methods, specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the SW-846 methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the SW-846 methods utilized by the laboratory.

Summary

The analytical results and associated laboratory quality control (QC) samples were reviewed to determine the integrity of the reported analytical results and to verify that the data met the established data quality objectives.

The samples collected 10/12/20 through 10/15/20 were evaluated as part of this QA review.

The following samples were evaluated as part of this QA review: MCM-01, MCM-02, MCM-04, MCM-05, MCM-06, MCM-07, MCM-11, MCM-12, MCM-14, MCM-15, MCM-16, MCM-17, MCM-18, MCM-19, MCM-20, and DPZ-2.

The following Pace radiological SDG was evaluated as part of this QA review: 92500310.

All data are considered usable as reported, or usable after integration of data validation qualifications.

Radiological Data Review

Data validation was performed for these samples based on the sample results, summary QC data, and raw data provided by the laboratory. The findings offered in this report for the inorganic analyses are based upon a review of the following QC measures:

- Sample condition upon laboratory receipt
- Chain-of-Custody (COC) Records
- Blank analysis results
- Laboratory control sample (LCS) recoveries
- Laboratory duplicate precision
- Sample holding times
- Case Narratives
- Chemical yield
- Field duplicate precision

The above QC measures were evaluated against the analytical method requirements and QC acceptance criteria. The data were validated based on guidance from the US EPA Region IV Data Validation SOPs, the referenced procedures, and were qualified as appropriate as described in the sections below.

Comments and Exceptions

1. The laboratory did not provide a Case Narrative associated with the radiological analyses. As this item was not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
2. The laboratory did not provide the subcontracted COC Record or the Sample Login Receipt Checklist from Pace of Peachtree Corners, Georgia to Pace Pittsburgh. As these items were not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
3. The laboratory did not provide the COC Record for the samples collected on 10/15/20. The missing COC pages had been requested and provided in the associated inorganic data package, SDG 92500314. Qualification due to this issue was not warranted.
4. The COC Record reported the sample collection time for MCM-14 as 9:10; the laboratory incorrectly logged in the collection time for the sample MCM-14 as 00:10 upon receipt at the laboratory. As this discrepancy did not impact the data quality, a revision was not requested. Qualification due to this issue was not warranted.
5. The data validator applied qualification to combined radium-226+228 based upon the QC samples associated with the analyses of the individual isotopes, radium-226 and radium-228. The electronic data deliverable (EDD) and the database only include the laboratory results for the combined radium-226+228; therefore, qualification of the individual isotopes is not addressed in this QA review.
6. SW-846 Method 9315 includes all alpha-emitting isotopes of radium. In order to analyze for only radium-226, a 21-day ingrowth period must be used. The radium-226 reported

by the laboratory did not undergo a 21-day ingrowth; therefore, the results reported as radium-226 potentially contain additional alpha-emitting radium isotopes and could be high biased.

7. Combined radium-226+228 was reported as the summation of the calculated activities for radium-226 and radium-228. As consistent with routine radiological reporting conventions, negative activities were reported for the radium-226 and radium-228 analyses; however, all negative activities were entered as zero in the calculation of combined radium-226+228 activity.
8. The combined radium-226+228 sample-specific minimum detectable concentration (MDC) was reported as the summation of the MDCs for radium-226 and radium-228. Consequently, there may be instances where a detection was observed in one of the individual isotopes but the combined radium-226+228 result was reported as "not-detected" due to the laboratory's reporting convention for combined radium-226+228.
9. The combined radium-226+228 result uncertainty was reported as the summation of the calculated uncertainties for radium-226 and radium-228. If routine statistical uncertainty reporting conventions were followed, the result uncertainty would have been reported as the root sum square (RSS; the square root of the sum of the squared individual uncertainties).
10. The laboratory did not flag results < the MDC as "not-detected" in the data package provided. The data validator qualified these samples as "U" on the data tables.
11. The following field duplicate pairs (see table) were submitted and analyzed for inorganic and radiological parameters with this data set. Acceptable precision and sample representativeness were demonstrated by the reported results in the field duplicate pair evaluation (replicate error ratio [RER] < 3).

<u>Laboratory SDG(s)</u>	<u>Sample</u>	<u>Field Duplicate</u>
92500310	MCM-11	DUP-1
92500310	MCM-16	DUP-2

Overall Assessment of Data

Based on a review of the data, qualification of data was warranted as noted below.

<u>Laboratory SDG(s)</u>	<u>Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier(s)</u>	<u>Reason(s) for Qualification</u>
92500310	MCM-04, MCM-06, MCM-07, MCM-14, MCM-15, MCM-16, MCM-17, and MCM-19	combined radium-226+228	J	BE – Equipment blank contamination
92500310	MCM-11	combined radium-226+228	J	FD – Field duplicate imprecision
92500310	All samples	combined radium-226+228	J/UJ	L- – Low LCS/LCSD recoveries

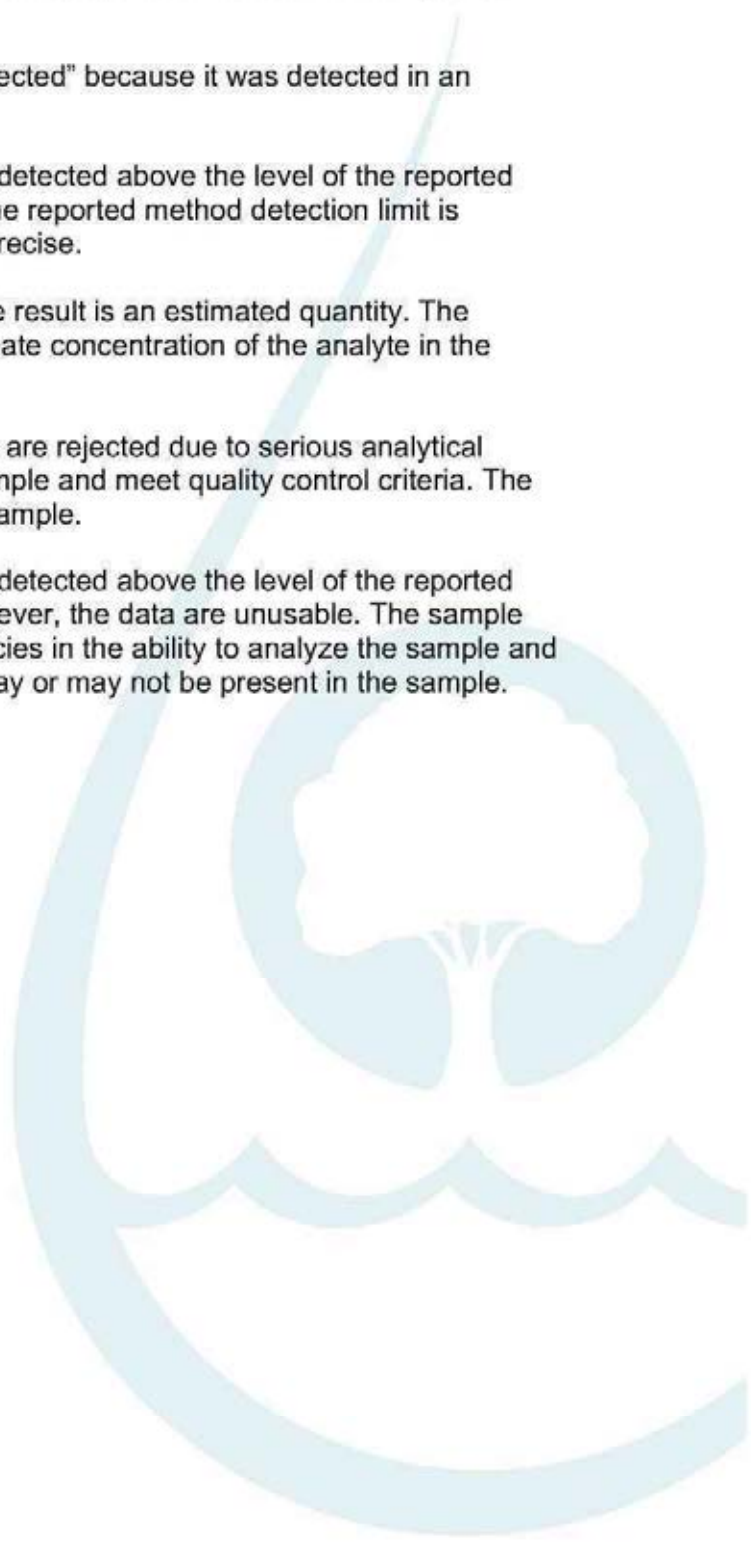
- All radiological results reported below the MDC have been flagged "U."

Report prepared by: Abigail P. Bossbaly, Quality Assurance Chemist
 Report reviewed by: Alyssa M. Reed, Senior Quality Assurance Chemist/Project Manager
 Report approved by: David I. Thal, CEAC, CQA, Principal Chemist
 Date: 12/15/2020



INORGANIC DATA QUALIFIERS

- U - The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit.
- U* - This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ - The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J - The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R - The data are unusable. The sample results are rejected due to serious analytical deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.
- UR - The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.



Reason Codes and Explanations

Reason Code	Explanation
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
BN	Negative laboratory blank contamination.
C	Initial and/or continuing calibration issue, indeterminate bias.
C+	Initial and/or continuing calibration issue. The result may be biased high.
C-	Initial and/or continuing calibration issue. The result may be biased low.
FD	Field duplicate imprecision.
FG	Total versus dissolved imprecision.
H	Holding time exceeded.
I	Internal standard recovery outside of acceptance limits.
L	LCS and LCSD recoveries outside of acceptance limits, indeterminate bias.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits, indeterminate bias.
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.
MP	MS/MSD imprecision.
P	Post-digestion spike recoveries outside of acceptance limits, indeterminate bias.
P+	Post-digestion spike recovery outside of acceptance limits. The result may be biased high.
P-	Post-digestion spike recovery outside of acceptance limits. The result may be biased low.
Q	Chemical preservation issue.
R	RL standards outside of acceptance limits, indeterminate bias.
R+	RL standard(s) outside of acceptance limits. The result may be biased high.
R-	RL standard(s) outside of acceptance limits. The result may be biased low.
T	Temperature preservation issue.
SD	Serial dilution imprecision.
Y	Chemical yields outside of acceptance limits, indeterminate bias.
Y+	Chemical yield(s) outside of acceptance limits. The result may be biased high.
Y-	Chemical yield(s) outside of acceptance limits. The result may be biased low.
ZZ	Other

APPENDIX A2

Field Sampling Forms and Calibration Reports

Low-Flow Test Report:

Test Date / Time: 8/26/2020 12:51:15 PM

Project: CCR AP Scan August 2020

Operator Name: William Laaker

Location Name: MCM-01 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.32 ft Total Depth: 27.32 ft Initial Depth to Water: 4.99 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 22.32 ft Estimated Total Volume Pumped: 5280 ml Flow Cell Volume: 90 ml Final Flow Rate: 120 ml/min Final Draw Down: 0.01 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728541
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Test Notes:

Prepurged 0.5 L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
8/26/2020 12:51 PM	00:00	5.86 pH	29.42 °C	189.81 µS/cm	1.94 mg/L	37.90 NTU	27.7 mV	4.99 ft	0.09 PSU	120.00 ml/min
8/26/2020 12:55 PM	04:00	5.75 pH	27.53 °C	166.82 µS/cm	0.80 mg/L	16.30 NTU	27.4 mV	5.00 ft	0.08 PSU	120.00 ml/min
8/26/2020 12:59 PM	08:00	5.73 pH	27.51 °C	157.26 µS/cm	0.72 mg/L	13.20 NTU	25.2 mV	5.00 ft	0.07 PSU	120.00 ml/min
8/26/2020 1:03 PM	12:00	5.73 pH	27.24 °C	156.50 µS/cm	0.65 mg/L	12.60 NTU	23.6 mV	5.00 ft	0.07 PSU	120.00 ml/min
8/26/2020 1:07 PM	16:00	5.73 pH	27.06 °C	151.39 µS/cm	0.56 mg/L	11.80 NTU	22.8 mV	5.00 ft	0.07 PSU	120.00 ml/min
8/26/2020 1:11 PM	20:00	5.75 pH	26.83 °C	152.57 µS/cm	0.43 mg/L	8.94 NTU	21.2 mV	5.00 ft	0.07 PSU	120.00 ml/min
8/26/2020 1:15 PM	24:00	5.77 pH	26.65 °C	153.00 µS/cm	0.34 mg/L	7.26 NTU	19.9 mV	5.00 ft	0.07 PSU	120.00 ml/min
8/26/2020 1:19 PM	28:00	5.78 pH	26.69 °C	153.61 µS/cm	0.28 mg/L	6.28 NTU	19.0 mV	5.00 ft	0.07 PSU	120.00 ml/min
8/26/2020 1:23 PM	32:00	5.78 pH	26.79 °C	152.98 µS/cm	0.26 mg/L	5.12 NTU	18.4 mV	5.00 ft	0.07 PSU	120.00 ml/min
8/26/2020 1:27 PM	36:00	5.79 pH	26.67 °C	152.50 µS/cm	0.23 mg/L	4.20 NTU	18.5 mV	5.00 ft	0.07 PSU	120.00 ml/min
8/26/2020 1:31 PM	40:00	5.79 pH	26.55 °C	152.21 µS/cm	0.22 mg/L	3.70 NTU	17.9 mV	5.00 ft	0.07 PSU	120.00 ml/min
8/26/2020 1:35 PM	44:00	5.79 pH	26.74 °C	153.31 µS/cm	0.21 mg/L	3.21 NTU	17.5 mV	5.00 ft	0.07 PSU	120.00 ml/min

Samples

Sample ID:	Description:
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MCM-01	Metals TDS Inorganics Radium
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Low-Flow Test Report:

Test Date / Time: 8/26/2020 1:56:45 PM

Project: CCR AP Scan August 2020

Operator Name: Veronica Fay

<p>Location Name: MCM-02 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.35 ft Total Depth: 27.35 ft Initial Depth to Water: 5.12 ft</p>	<p>Pump Type: Geotech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 22.35 ft Estimated Total Volume Pumped: 4800 ml Flow Cell Volume: 90 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.11 ft</p>	<p>Instrument Used: Aqua TROLL 400 Serial Number: 728638</p>
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Test Notes:

Prepurged 3L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 10	
8/26/2020 1:56 PM	00:00	5.03 pH	24.44 °C	184.22 µS/cm	0.32 mg/L	5.14 NTU	37.4 mV	5.23 ft	0.09 PSU	200.00 ml/min
8/26/2020 1:59 PM	03:00	5.03 pH	24.35 °C	188.95 µS/cm	0.33 mg/L	3.26 NTU	34.6 mV	5.23 ft	0.09 PSU	200.00 ml/min
8/26/2020 2:02 PM	06:00	5.03 pH	24.37 °C	190.46 µS/cm	0.32 mg/L	3.86 NTU	32.1 mV	5.24 ft	0.09 PSU	200.00 ml/min
8/26/2020 2:05 PM	09:00	5.03 pH	24.22 °C	186.22 µS/cm	0.26 mg/L	3.46 NTU	30.2 mV	5.23 ft	0.09 PSU	200.00 ml/min
8/26/2020 2:08 PM	12:00	5.03 pH	24.14 °C	179.80 µS/cm	0.30 mg/L	3.46 NTU	28.9 mV	5.23 ft	0.09 PSU	200.00 ml/min
8/26/2020 2:11 PM	15:00	5.03 pH	24.20 °C	177.11 µS/cm	0.28 mg/L	3.72 NTU	27.0 mV	5.23 ft	0.08 PSU	200.00 ml/min
8/26/2020 2:14 PM	18:00	5.03 pH	24.24 °C	171.56 µS/cm	0.29 mg/L	3.11 NTU	25.9 mV	5.23 ft	0.08 PSU	200.00 ml/min
8/26/2020 2:17 PM	21:00	5.03 pH	24.04 °C	171.99 µS/cm	0.29 mg/L	3.42 NTU	25.2 mV	5.23 ft	0.08 PSU	200.00 ml/min
8/26/2020 2:20 PM	24:00	5.03 pH	24.05 °C	174.30 µS/cm	0.35 mg/L	3.50 NTU	24.6 mV	5.23 ft	0.08 PSU	200.00 ml/min

Samples

Sample ID:	Description:
MCM-02	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 11:41:44 AM

Project: CCR AP Scan August 2020

Operator Name: Veronica Fay

Location Name: MCM- 04 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.57 ft Total Depth: 28.57 ft Initial Depth to Water: 10.32 ft	Pump Type: Geotech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 23.57 ft Estimated Total Volume Pumped: 2900 ml Flow Cell Volume: 90 ml Final Flow Rate: 240 ml/min Final Draw Down: 0.29 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728638
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Test Notes:

Prepurged 3L

Geotech Peristaltic Pump experiencing some erratic behavior due to weak battery. Will switch to a different peristaltic pump after completion of sample collection.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 10	
8/26/2020 11:41 AM	00:00	4.96 pH	23.69 °C	472.79 µS/cm	0.18 mg/L	4.01 NTU	78.4 mV	10.60 ft	0.23 PSU	240.00 ml/min
8/26/2020 11:44 AM	03:00	4.94 pH	23.42 °C	469.30 µS/cm	0.14 mg/L	3.68 NTU	74.0 mV	10.61 ft	0.23 PSU	240.00 ml/min
8/26/2020 11:47 AM	06:00	4.94 pH	23.24 °C	474.15 µS/cm	0.13 mg/L	3.63 NTU	70.8 mV	10.61 ft	0.23 PSU	240.00 ml/min
8/26/2020 11:50 AM	09:00	4.95 pH	23.15 °C	468.62 µS/cm	0.12 mg/L	2.12 NTU	67.5 mV	10.61 ft	0.23 PSU	240.00 ml/min
8/26/2020 11:53 AM	12:00	4.95 pH	23.32 °C	471.10 µS/cm	0.12 mg/L	2.49 NTU	63.9 mV	10.61 ft	0.23 PSU	240.00 ml/min

Samples

Sample ID:	Description:
MCM-04	Metals, TDS, Inorganics, Radium
DUP-1	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 12:24:21 PM

Project: CCR AP Scan August 2020 (2)

Operator Name: Joe Booth

Location Name: MCM-05 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.05 ft Total Depth: 28.05 ft Initial Depth to Water: 9.16 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 23.05 ft Estimated Total Volume Pumped: 2800 ml Flow Cell Volume: 90 ml Final Flow Rate: 175 ml/min Final Draw Down: 0.06 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728566
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Test Notes:

Prepurged 2 liters

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 0.2	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
8/26/2020 12:24 PM	00:00	6.62 pH	26.74 °C	4,292.7 µS/cm	0.67 mg/L	1.21 NTU	-164.5 mV	9.16 ft	2.31 PSU	175.00 ml/min
8/26/2020 12:28 PM	04:00	6.61 pH	26.05 °C	4,344.3 µS/cm	0.49 mg/L	1.63 NTU	-155.4 mV	9.22 ft	2.34 PSU	175.00 ml/min
8/26/2020 12:32 PM	08:00	6.60 pH	25.81 °C	4,435.7 µS/cm	0.44 mg/L	2.03 NTU	-151.7 mV	9.22 ft	2.40 PSU	175.00 ml/min
8/26/2020 12:36 PM	12:00	6.59 pH	25.61 °C	4,481.0 µS/cm	0.39 mg/L	1.35 NTU	-149.3 mV	9.22 ft	2.42 PSU	175.00 ml/min
8/26/2020 12:40 PM	16:00	6.59 pH	25.72 °C	4,504.9 µS/cm	0.32 mg/L	1.46 NTU	-147.5 mV	9.22 ft	2.43 PSU	175.00 ml/min

Samples

Sample ID:	Description:
MCM-05	Metals TDS Inorganics Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 3:42:57 PM

Project: CCR AP Scan August 2020

Operator Name: Joe Booth

Location Name: MCM-06 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.2 ft Total Depth: 27.2 ft Initial Depth to Water: 8.26 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 22.2 ft Estimated Total Volume Pumped: 3400 ml Flow Cell Volume: 90 ml Final Flow Rate: 170 ml/min Final Draw Down: 0.07 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728566
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Test Notes:

Prepurged 2 liters

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 0.2	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
8/26/2020 3:42 PM	00:00	6.86 pH	26.09 °C	42,423 µS/cm	0.10 mg/L	8.91 NTU	-270.6 mV	8.26 ft	27.70 PSU	170.00 ml/min
8/26/2020 3:46 PM	04:00	6.86 pH	25.84 °C	41,939 µS/cm	0.08 mg/L	7.88 NTU	-274.4 mV	8.32 ft	27.35 PSU	170.00 ml/min
8/26/2020 3:50 PM	08:00	6.87 pH	25.70 °C	41,748 µS/cm	0.07 mg/L	6.28 NTU	-275.3 mV	8.33 ft	27.20 PSU	170.00 ml/min
8/26/2020 3:54 PM	12:00	6.88 pH	25.55 °C	41,545 µS/cm	0.07 mg/L	4.36 NTU	-277.6 mV	8.33 ft	27.05 PSU	170.00 ml/min
8/26/2020 3:58 PM	16:00	6.88 pH	25.42 °C	41,462 µS/cm	0.06 mg/L	4.22 NTU	-282.1 mV	8.33 ft	26.99 PSU	170.00 ml/min
8/26/2020 4:02 PM	20:00	6.89 pH	25.37 °C	41,614 µS/cm	0.06 mg/L	4.41 NTU	-285.5 mV	8.33 ft	27.10 PSU	170.00 ml/min

Samples

Sample ID:	Description:
MCM-06	Metals TDS Inorganics Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 9:49:13 AM

Project: CCR AP Scan August 2020

Operator Name: Joe Booth

Location Name: MCM-07 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 13.75 ft Total Depth: 23.75 ft Initial Depth to Water: 8.51 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 18.75 ft Estimated Total Volume Pumped: 12320 ml Flow Cell Volume: 90 ml Final Flow Rate: 140 ml/min Final Draw Down: 0.54 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728566
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Test Notes:

Prepurged 2 liters

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 0.2	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
8/26/2020 9:49 AM	00:00	6.30 pH	26.34 °C	1,222.4 µS/cm	0.21 mg/L	9.44 NTU	-134.7 mV	8.51 ft	0.62 PSU	140.00 ml/min
8/26/2020 9:53 AM	04:00	6.32 pH	26.25 °C	42,898 µS/cm	0.14 mg/L	11.05 NTU	-145.9 mV	9.05 ft	28.05 PSU	140.00 ml/min
8/26/2020 9:57 AM	08:00	6.32 pH	26.22 °C	43,247 µS/cm	0.10 mg/L	12.05 NTU	-153.3 mV	9.05 ft	28.30 PSU	140.00 ml/min
8/26/2020 10:01 AM	12:00	6.32 pH	26.72 °C	43,817 µS/cm	0.08 mg/L	11.31 NTU	-159.2 mV	8.88 ft	28.73 PSU	140.00 ml/min
8/26/2020 10:05 AM	16:00	6.32 pH	27.28 °C	44,244 µS/cm	0.08 mg/L	10.88 NTU	-161.7 mV	8.88 ft	29.05 PSU	140.00 ml/min
8/26/2020 10:09 AM	20:00	6.32 pH	27.49 °C	44,375 µS/cm	0.08 mg/L	11.21 NTU	-161.6 mV	8.88 ft	29.15 PSU	140.00 ml/min
8/26/2020 10:13 AM	24:00	6.32 pH	27.43 °C	44,065 µS/cm	0.08 mg/L	9.99 NTU	-159.8 mV	9.01 ft	28.92 PSU	140.00 ml/min
8/26/2020 10:17 AM	28:00	6.33 pH	26.33 °C	43,470 µS/cm	0.08 mg/L	12.60 NTU	-159.0 mV	9.05 ft	28.47 PSU	140.00 ml/min
8/26/2020 10:21 AM	32:00	6.33 pH	26.15 °C	43,728 µS/cm	0.07 mg/L	15.60 NTU	-161.9 mV	9.05 ft	28.65 PSU	140.00 ml/min
8/26/2020 10:25 AM	36:00	6.32 pH	27.06 °C	44,730 µS/cm	0.06 mg/L	8.95 NTU	-164.0 mV	9.05 ft	29.40 PSU	140.00 ml/min
8/26/2020 10:29 AM	40:00	6.32 pH	27.16 °C	45,514 µS/cm	0.08 mg/L	7.20 NTU	-161.4 mV	9.05 ft	29.98 PSU	140.00 ml/min
8/26/2020 10:33 AM	44:00	6.32 pH	27.39 °C	45,611 µS/cm	0.09 mg/L	6.50 NTU	-159.8 mV	9.05 ft	30.06 PSU	140.00 ml/min
8/26/2020 10:37 AM	48:00	6.32 pH	27.11 °C	45,811 µS/cm	0.08 mg/L	7.28 NTU	-159.9 mV	9.05 ft	30.20 PSU	140.00 ml/min
8/26/2020 10:41 AM	52:00	6.32 pH	26.67 °C	45,700 µS/cm	0.09 mg/L	7.43 NTU	-159.2 mV	9.05 ft	30.11 PSU	140.00 ml/min
8/26/2020 10:45 AM	56:00	6.32 pH	26.53 °C	45,678 µS/cm	0.08 mg/L	8.92 NTU	-159.8 mV	9.05 ft	30.09 PSU	140.00 ml/min

8/26/2020 10:49 AM	01:00:00	6.32 pH	26.51 °C	45,608 µS/cm	0.08 mg/L	10.28 NTU	-160.5 mV	9.05 ft	30.04 PSU	140.00 ml/min
8/26/2020 10:53 AM	01:04:00	6.32 pH	26.69 °C	45,482 µS/cm	0.07 mg/L	10.50 NTU	-161.5 mV	9.05 ft	29.95 PSU	140.00 ml/min
8/26/2020 10:57 AM	01:08:00	6.32 pH	26.47 °C	45,512 µS/cm	0.07 mg/L	6.21 NTU	-161.5 mV	9.05 ft	29.97 PSU	140.00 ml/min
8/26/2020 11:01 AM	01:12:00	6.32 pH	26.93 °C	45,512 µS/cm	0.06 mg/L	5.72 NTU	-163.3 mV	9.05 ft	29.98 PSU	140.00 ml/min
8/26/2020 11:05 AM	01:16:00	6.32 pH	27.04 °C	45,530 µS/cm	0.06 mg/L	5.72 NTU	-164.3 mV	9.05 ft	29.99 PSU	140.00 ml/min
8/26/2020 11:09 AM	01:20:00	6.32 pH	27.14 °C	45,543 µS/cm	0.06 mg/L	3.07 NTU	-164.6 mV	9.05 ft	30.00 PSU	140.00 ml/min
8/26/2020 11:13 AM	01:24:00	6.32 pH	27.25 °C	45,635 µS/cm	0.06 mg/L	3.06 NTU	-165.0 mV	9.05 ft	30.07 PSU	140.00 ml/min
8/26/2020 11:17 AM	01:28:00	6.32 pH	27.33 °C	45,584 µS/cm	0.06 mg/L	2.66 NTU	-165.5 mV	9.05 ft	30.04 PSU	140.00 ml/min

Samples

Sample ID:	Description:
MCM-07	Metals TDS Inorganics Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 10:03:57 AM

Project: CCR AP Scan August 2020

Operator Name: Veronica Fay

Location Name: MCM-11 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 14 ft Total Depth: 24 ft Initial Depth to Water: 4.95 ft	Pump Type: Geotech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 19 ft Estimated Total Volume Pumped: 3300 ml Flow Cell Volume: 90 ml Final Flow Rate: 220 ml/min Final Draw Down: 1.46 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728638
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Test Notes:

Prepurged 4.5L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 10	
8/26/2020 10:03 AM	00:00	4.97 pH	26.97 °C	124.64 µS/cm	0.13 mg/L	1.83 NTU	53.6 mV	6.27 ft	0.06 PSU	220.00 ml/min
8/26/2020 10:06 AM	03:00	4.97 pH	26.87 °C	124.33 µS/cm	0.12 mg/L	2.01 NTU	53.2 mV	6.31 ft	0.06 PSU	220.00 ml/min
8/26/2020 10:09 AM	06:00	4.96 pH	26.83 °C	125.04 µS/cm	0.11 mg/L	2.12 NTU	54.2 mV	6.36 ft	0.06 PSU	220.00 ml/min
8/26/2020 10:12 AM	09:00	4.96 pH	26.88 °C	125.32 µS/cm	0.11 mg/L	2.12 NTU	56.3 mV	6.39 ft	0.06 PSU	220.00 ml/min
8/26/2020 10:15 AM	12:00	4.96 pH	27.20 °C	125.56 µS/cm	0.10 mg/L	0.95 NTU	58.5 mV	6.41 ft	0.06 PSU	220.00 ml/min
8/26/2020 10:18 AM	15:00	4.96 pH	27.33 °C	124.76 µS/cm	0.09 mg/L	1.40 NTU	59.7 mV	6.41 ft	0.06 PSU	220.00 ml/min

Samples

Sample ID:	Description:
MCM-11	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 9:18:20 AM

Project: CCR AP Scan August 2020

Operator Name: William Laaker

Location Name: MCM-12 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 19 ft Total Depth: 29 ft Initial Depth to Water: 9.29 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 24 ft Estimated Total Volume Pumped: 11560 ml Flow Cell Volume: 90 ml Final Flow Rate: 170 ml/min Final Draw Down: 1.64 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728541
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Test Notes:

Prepurged 0.5 L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
8/26/2020 9:18 AM	00:00	6.31 pH	27.62 °C	2,571.1 µS/cm	0.13 mg/L	2.75 NTU	-13.7 mV	9.29 ft	1.34 PSU	170.00 ml/min
8/26/2020 9:22 AM	04:00	6.31 pH	25.98 °C	2,582.4 µS/cm	0.05 mg/L	3.83 NTU	-18.8 mV	10.35 ft	1.35 PSU	170.00 ml/min
8/26/2020 9:26 AM	08:00	6.31 pH	25.22 °C	2,591.4 µS/cm	0.04 mg/L	6.30 NTU	-22.8 mV	10.54 ft	1.36 PSU	170.00 ml/min
8/26/2020 9:30 AM	12:00	6.31 pH	24.96 °C	2,582.3 µS/cm	0.03 mg/L	15.10 NTU	-26.1 mV	10.64 ft	1.35 PSU	170.00 ml/min
8/26/2020 9:34 AM	16:00	6.31 pH	24.97 °C	2,570.6 µS/cm	0.02 mg/L	19.00 NTU	-28.7 mV	10.72 ft	1.34 PSU	170.00 ml/min
8/26/2020 9:38 AM	20:00	6.31 pH	25.33 °C	2,552.2 µS/cm	0.01 mg/L	22.30 NTU	-28.8 mV	10.78 ft	1.33 PSU	170.00 ml/min
8/26/2020 9:42 AM	24:00	6.31 pH	25.44 °C	2,539.1 µS/cm	0.01 mg/L	20.30 NTU	-30.4 mV	10.81 ft	1.33 PSU	170.00 ml/min
8/26/2020 9:46 AM	28:00	6.31 pH	25.33 °C	2,602.7 µS/cm	0.01 mg/L	17.50 NTU	-30.6 mV	10.82 ft	1.36 PSU	170.00 ml/min
8/26/2020 9:50 AM	32:00	6.31 pH	25.11 °C	2,608.4 µS/cm	0.02 mg/L	14.70 NTU	-31.0 mV	10.84 ft	1.36 PSU	170.00 ml/min
8/26/2020 9:54 AM	36:00	6.31 pH	24.92 °C	2,605.8 µS/cm	0.02 mg/L	12.20 NTU	-29.9 mV	10.86 ft	1.36 PSU	170.00 ml/min
8/26/2020 9:58 AM	40:00	6.32 pH	24.87 °C	2,601.6 µS/cm	0.02 mg/L	10.68 NTU	-29.8 mV	10.88 ft	1.36 PSU	170.00 ml/min
8/26/2020 10:02 AM	44:00	6.32 pH	24.81 °C	2,594.2 µS/cm	0.03 mg/L	9.02 NTU	-30.2 mV	10.90 ft	1.36 PSU	170.00 ml/min
8/26/2020 10:06 AM	48:00	6.32 pH	24.78 °C	2,596.7 µS/cm	0.03 mg/L	7.42 NTU	-29.6 mV	10.91 ft	1.36 PSU	170.00 ml/min
8/26/2020 10:10 AM	52:00	6.32 pH	25.16 °C	2,585.8 µS/cm	0.02 mg/L	6.28 NTU	-29.4 mV	10.92 ft	1.35 PSU	170.00 ml/min
8/26/2020 10:14 AM	56:00	6.32 pH	25.19 °C	2,579.5 µS/cm	0.02 mg/L	5.35 NTU	-28.9 mV	10.93 ft	1.35 PSU	170.00 ml/min

8/26/2020 10:18 AM	01:00:00	6.32 pH	25.28 °C	2,573.3 µS/cm	0.02 mg/L	4.79 NTU	-29.0 mV	10.93 ft	1.35 PSU	170.00 ml/min
8/26/2020 10:22 AM	01:04:00	6.32 pH	25.18 °C	2,564.6 µS/cm	0.02 mg/L	4.53 NTU	-28.6 mV	10.93 ft	1.34 PSU	170.00 ml/min
8/26/2020 10:26 AM	01:08:00	6.32 pH	25.23 °C	2,564.4 µS/cm	0.02 mg/L	4.22 NTU	-28.6 mV	10.93 ft	1.34 PSU	170.00 ml/min

Samples

Sample ID:	Description:
MCM-12	Metals TDS Inorganics Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 11:16:58 AM

Project: CCR AP Scan August 2020

Operator Name: William Laaker

Location Name: MCM-14 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.11 ft Total Depth: 28.11 ft Initial Depth to Water: 11.02 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 23.11 ft Estimated Total Volume Pumped: 3920 ml Flow Cell Volume: 90 ml Final Flow Rate: 140 ml/min Final Draw Down: 0.06 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728541
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Test Notes:

Prepurged 0.5 L

Water had odor and dark coloration.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
8/26/2020 11:16 AM	00:00	6.57 pH	28.64 °C	20,051 µS/cm	0.86 mg/L	28.10 NTU	-159.6 mV	11.02 ft	12.15 PSU	140.00 ml/min
8/26/2020 11:20 AM	04:00	6.60 pH	26.52 °C	20,711 µS/cm	0.41 mg/L	9.48 NTU	-177.7 mV	11.07 ft	12.58 PSU	140.00 ml/min
8/26/2020 11:24 AM	08:00	6.60 pH	26.38 °C	20,859 µS/cm	0.31 mg/L	8.30 NTU	-190.9 mV	11.08 ft	12.68 PSU	140.00 ml/min
8/26/2020 11:28 AM	12:00	6.61 pH	26.30 °C	20,859 µS/cm	0.23 mg/L	6.73 NTU	-193.7 mV	11.08 ft	12.68 PSU	140.00 ml/min
8/26/2020 11:32 AM	16:00	6.61 pH	25.97 °C	20,856 µS/cm	0.19 mg/L	5.64 NTU	-194.6 mV	11.08 ft	12.67 PSU	140.00 ml/min
8/26/2020 11:36 AM	20:00	6.62 pH	25.97 °C	20,806 µS/cm	0.17 mg/L	4.44 NTU	-194.4 mV	11.08 ft	12.64 PSU	140.00 ml/min
8/26/2020 11:40 AM	24:00	6.62 pH	25.58 °C	20,847 µS/cm	0.16 mg/L	3.98 NTU	-194.5 mV	11.08 ft	12.67 PSU	140.00 ml/min
8/26/2020 11:44 AM	28:00	6.62 pH	25.69 °C	20,911 µS/cm	0.15 mg/L	3.75 NTU	-194.4 mV	11.08 ft	12.71 PSU	140.00 ml/min

Samples

Sample ID:	Description:
MCM-14	Metals TDS Inorganics Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 2:01:40 PM

Project: CCR AP Scan August 2020 (3)

Operator Name: Joe Booth

Location Name: MCM-15 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 16.6 ft Total Depth: 26.6 ft Initial Depth to Water: 9.78 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 21.6 ft Estimated Total Volume Pumped: 6800 ml Flow Cell Volume: 90 ml Final Flow Rate: 170 ml/min Final Draw Down: 0.1 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728566
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Test Notes:

Prepurged 2 liters

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 0.2	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
8/26/2020 2:01 PM	00:00	5.18 pH	26.25 °C	112.03 µS/cm	1.38 mg/L	2.94 NTU	56.4 mV	9.78 ft	0.05 PSU	170.00 ml/min
8/26/2020 2:05 PM	04:00	5.11 pH	25.65 °C	104.44 µS/cm	0.81 mg/L	2.77 NTU	54.4 mV	9.88 ft	0.05 PSU	170.00 ml/min
8/26/2020 2:09 PM	08:00	5.06 pH	25.42 °C	100.00 µS/cm	0.42 mg/L	2.65 NTU	52.7 mV	9.88 ft	0.05 PSU	170.00 ml/min
8/26/2020 2:13 PM	12:00	5.05 pH	25.37 °C	100.52 µS/cm	0.30 mg/L	4.02 NTU	50.7 mV	9.88 ft	0.05 PSU	170.00 ml/min
8/26/2020 2:17 PM	16:00	5.24 pH	25.15 °C	170.10 µS/cm	0.25 mg/L	2.15 NTU	37.0 mV	9.88 ft	0.08 PSU	170.00 ml/min
8/26/2020 2:21 PM	20:00	5.30 pH	24.51 °C	194.39 µS/cm	0.24 mg/L	0.93 NTU	30.6 mV	9.88 ft	0.09 PSU	170.00 ml/min
8/26/2020 2:25 PM	24:00	5.32 pH	24.34 °C	206.27 µS/cm	0.16 mg/L	1.33 NTU	27.0 mV	9.88 ft	0.10 PSU	170.00 ml/min
8/26/2020 2:29 PM	28:00	5.33 pH	24.32 °C	207.53 µS/cm	0.14 mg/L	1.02 NTU	25.6 mV	9.88 ft	0.10 PSU	170.00 ml/min
8/26/2020 2:33 PM	32:00	5.33 pH	24.18 °C	205.45 µS/cm	0.13 mg/L	0.88 NTU	25.1 mV	9.88 ft	0.10 PSU	170.00 ml/min
8/26/2020 2:37 PM	36:00	5.33 pH	24.16 °C	210.42 µS/cm	0.12 mg/L	0.63 NTU	24.4 mV	9.88 ft	0.10 PSU	170.00 ml/min
8/26/2020 2:41 PM	40:00	5.33 pH	24.08 °C	209.67 µS/cm	0.12 mg/L	0.97 NTU	23.9 mV	9.88 ft	0.10 PSU	170.00 ml/min

Samples

Sample ID:	Description:
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MCM-15	Metals TDS Inorganics Radium
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Low-Flow Test Report:

Test Date / Time: 8/26/2020 4:18:35 PM

Project: CCR AP Scan August 2020

Operator Name: Veronica Fay

<p>Location Name: MCM-16 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.39 ft Total Depth: 28.39 ft Initial Depth to Water: 9.72 ft</p>	<p>Pump Type: Geotech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 23.39 ft Estimated Total Volume Pumped: 5400 ml Flow Cell Volume: 90 ml Final Flow Rate: 210 ml/min Final Draw Down: 0.08 ft</p>	<p>Instrument Used: Aqua TROLL 400 Serial Number: 728638</p>
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Test Notes:

Prepurged 2L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 10	
8/26/2020 4:18 PM	00:00	4.91 pH	23.75 °C	157.99 µS/cm	1.30 mg/L	5.30 NTU	55.3 mV	9.80 ft	0.07 PSU	210.00 ml/min
8/26/2020 4:21 PM	03:00	4.91 pH	23.41 °C	158.78 µS/cm	0.84 mg/L	5.09 NTU	55.4 mV	9.80 ft	0.08 PSU	210.00 ml/min
8/26/2020 4:24 PM	06:00	4.92 pH	23.24 °C	158.24 µS/cm	0.49 mg/L	5.40 NTU	54.9 mV	9.80 ft	0.08 PSU	210.00 ml/min
8/26/2020 4:27 PM	09:00	4.92 pH	23.15 °C	157.98 µS/cm	0.36 mg/L	7.11 NTU	54.3 mV	9.80 ft	0.07 PSU	210.00 ml/min
8/26/2020 4:30 PM	12:00	4.93 pH	23.09 °C	158.24 µS/cm	0.30 mg/L	6.32 NTU	53.4 mV	9.80 ft	0.08 PSU	210.00 ml/min
8/26/2020 4:33 PM	15:00	4.93 pH	23.02 °C	158.20 µS/cm	0.26 mg/L	6.27 NTU	52.5 mV	9.80 ft	0.08 PSU	210.00 ml/min
8/26/2020 4:36 PM	18:00	4.93 pH	23.19 °C	159.04 µS/cm	0.24 mg/L	7.02 NTU	51.6 mV	9.80 ft	0.08 PSU	210.00 ml/min
8/26/2020 4:39 PM	21:00	4.93 pH	23.42 °C	158.30 µS/cm	0.21 mg/L	5.42 NTU	50.7 mV	9.80 ft	0.08 PSU	210.00 ml/min
8/26/2020 4:42 PM	24:00	4.93 pH	23.42 °C	157.98 µS/cm	0.20 mg/L	4.48 NTU	50.7 mV	9.80 ft	0.07 PSU	210.00 ml/min
8/26/2020 4:45 PM	27:00	4.92 pH	23.42 °C	157.37 µS/cm	0.20 mg/L	4.19 NTU	50.3 mV	9.80 ft	0.07 PSU	210.00 ml/min
8/26/2020 4:48 PM	30:00	4.92 pH	23.47 °C	157.45 µS/cm	0.20 mg/L	4.06 NTU	49.7 mV	9.80 ft	0.07 PSU	210.00 ml/min

Samples

Sample ID:	Description:
MCM-16	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 2:33:43 PM

Project: CCR AP Scan August 2020

Operator Name: William Laaker

<p>Location Name: MCM-17 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.44 ft Total Depth: 27.44 ft Initial Depth to Water: 9.91 ft</p>	<p>Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 22.44 ft Estimated Total Volume Pumped: 11200 ml Flow Cell Volume: 90 ml Final Flow Rate: 140 ml/min Final Draw Down: -0.32 ft</p>	<p>Instrument Used: Aqua TROLL 400 Serial Number: 728541</p>
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Test Notes:

Prepurged 0.5 L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
8/26/2020 2:33 PM	00:00	6.29 pH	27.06 °C	12,272 µS/cm	0.35 mg/L	2.07 NTU	-118.0 mV	9.91 ft	7.13 PSU	140.00 ml/min
8/26/2020 2:37 PM	04:00	6.27 pH	26.37 °C	12,490 µS/cm	0.21 mg/L	2.00 NTU	-114.7 mV	9.92 ft	7.26 PSU	140.00 ml/min
8/26/2020 2:41 PM	08:00	6.26 pH	26.15 °C	12,528 µS/cm	0.13 mg/L	3.76 NTU	-121.0 mV	9.92 ft	7.29 PSU	140.00 ml/min
8/26/2020 2:45 PM	12:00	6.25 pH	25.94 °C	12,538 µS/cm	0.09 mg/L	9.67 NTU	-122.0 mV	9.91 ft	7.29 PSU	140.00 ml/min
8/26/2020 2:49 PM	16:00	6.25 pH	26.01 °C	12,547 µS/cm	0.07 mg/L	14.80 NTU	-121.1 mV	9.89 ft	7.30 PSU	140.00 ml/min
8/26/2020 2:53 PM	20:00	6.26 pH	25.84 °C	12,554 µS/cm	0.06 mg/L	16.20 NTU	-119.8 mV	9.85 ft	7.30 PSU	140.00 ml/min
8/26/2020 2:57 PM	24:00	6.26 pH	25.99 °C	12,568 µS/cm	0.05 mg/L	15.90 NTU	-118.7 mV	9.83 ft	7.31 PSU	140.00 ml/min
8/26/2020 3:01 PM	28:00	6.27 pH	25.83 °C	12,562 µS/cm	0.05 mg/L	14.20 NTU	-117.8 mV	9.81 ft	7.31 PSU	140.00 ml/min
8/26/2020 3:05 PM	32:00	6.29 pH	25.76 °C	12,563 µS/cm	0.05 mg/L	14.60 NTU	-121.3 mV	9.80 ft	7.31 PSU	140.00 ml/min
8/26/2020 3:09 PM	36:00	6.32 pH	25.83 °C	12,589 µS/cm	0.05 mg/L	13.00 NTU	-119.9 mV	9.80 ft	7.33 PSU	140.00 ml/min
8/26/2020 3:13 PM	40:00	6.35 pH	25.51 °C	12,627 µS/cm	0.06 mg/L	11.90 NTU	-119.7 mV	9.78 ft	7.35 PSU	140.00 ml/min
8/26/2020 3:17 PM	44:00	6.40 pH	25.52 °C	12,658 µS/cm	0.05 mg/L	10.29 NTU	-128.6 mV	9.75 ft	7.37 PSU	140.00 ml/min
8/26/2020 3:21 PM	48:00	6.45 pH	25.42 °C	12,680 µS/cm	0.06 mg/L	9.42 NTU	-124.4 mV	9.73 ft	7.38 PSU	140.00 ml/min
8/26/2020 3:25 PM	52:00	6.48 pH	25.28 °C	12,727 µS/cm	0.06 mg/L	7.52 NTU	-125.4 mV	9.70 ft	7.41 PSU	140.00 ml/min
8/26/2020 3:29 PM	56:00	6.52 pH	25.38 °C	12,747 µS/cm	0.06 mg/L	6.90 NTU	-126.0 mV	9.68 ft	7.42 PSU	140.00 ml/min

8/26/2020 3:33 PM	01:00:00	6.55 pH	25.33 °C	12,805 µS/cm	0.06 mg/L	6.27 NTU	-127.2 mV	9.67 ft	7.46 PSU	140.00 ml/min
8/26/2020 3:37 PM	01:04:00	6.58 pH	25.30 °C	12,814 µS/cm	0.06 mg/L	5.43 NTU	-126.8 mV	9.65 ft	7.47 PSU	140.00 ml/min
8/26/2020 3:41 PM	01:08:00	6.60 pH	25.33 °C	12,862 µS/cm	0.07 mg/L	5.17 NTU	-128.1 mV	9.64 ft	7.50 PSU	140.00 ml/min
8/26/2020 3:45 PM	01:12:00	6.62 pH	25.79 °C	12,851 µS/cm	0.05 mg/L	4.70 NTU	-129.5 mV	9.64 ft	7.49 PSU	140.00 ml/min
8/26/2020 3:49 PM	01:16:00	6.63 pH	25.88 °C	12,901 µS/cm	0.04 mg/L	4.21 NTU	-131.0 mV	9.61 ft	7.52 PSU	140.00 ml/min
8/26/2020 3:53 PM	01:20:00	6.65 pH	25.69 °C	12,953 µS/cm	0.04 mg/L	3.90 NTU	-131.1 mV	9.59 ft	7.55 PSU	140.00 ml/min

Samples

Sample ID:	Description:
MCM-17	Metals TDS Inorganics Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 11:30:27 AM

Project: CCR AP Scan August 2020

Operator Name: Kevin Stephenson

Location Name: MCM-18 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.86 ft Total Depth: 27.86 ft Initial Depth to Water: 6.22 ft	Pump Type: GeoTech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 22.86 ft Estimated Total Volume Pumped: 4160 ml Flow Cell Volume: 90 ml Final Flow Rate: 260 ml/min Final Draw Down: 0.29 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Pre-purged 2 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 0.2 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000	
8/26/2020 11:30 AM	00:00	4.27 pH	26.93 °C	5,209.0 µS/cm	0.12 mg/L	0.63 NTU	48.4 mV	6.44 ft	2.84 PSU	260.00 ml/min
8/26/2020 11:34 AM	04:00	4.27 pH	25.33 °C	5,339.2 µS/cm	0.10 mg/L	0.66 NTU	52.8 mV	6.50 ft	2.92 PSU	260.00 ml/min
8/26/2020 11:38 AM	08:00	4.27 pH	24.92 °C	5,345.0 µS/cm	0.09 mg/L	0.68 NTU	58.9 mV	6.51 ft	2.92 PSU	260.00 ml/min
8/26/2020 11:42 AM	12:00	4.27 pH	25.23 °C	5,324.1 µS/cm	0.08 mg/L	0.53 NTU	67.6 mV	6.51 ft	2.91 PSU	260.00 ml/min
8/26/2020 11:46 AM	16:00	4.27 pH	24.79 °C	5,309.8 µS/cm	0.08 mg/L	0.40 NTU	64.3 mV	6.51 ft	2.90 PSU	260.00 ml/min

Samples

Sample ID:	Description:
MCM-18	Metals TDS Inorganics Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 2:06:06 PM

Project: CCR AP Scan August 2020

Operator Name: Kevin Stephenson

Location Name: MCM-19 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.32 ft Total Depth: 28.32 ft Initial Depth to Water: 7.11 ft	Pump Type: GeoTech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 23.32 ft Estimated Total Volume Pumped: 5600 ml Flow Cell Volume: 90 ml Final Flow Rate: 280 ml/min Final Draw Down: -0.05 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Pre-purged 2 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 0.2 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000	
8/26/2020 2:06 PM	00:00	5.24 pH	29.90 °C	17,542 µS/cm	0.27 mg/L	0.67 NTU	117.2 mV	7.22 ft	10.50 PSU	280.00 ml/min
8/26/2020 2:10 PM	04:00	5.23 pH	25.45 °C	18,548 µS/cm	0.13 mg/L	0.40 NTU	107.0 mV	7.20 ft	11.15 PSU	280.00 ml/min
8/26/2020 2:14 PM	08:00	5.24 pH	25.12 °C	18,509 µS/cm	0.12 mg/L	0.58 NTU	103.7 mV	7.20 ft	11.12 PSU	280.00 ml/min
8/26/2020 2:18 PM	12:00	5.24 pH	24.99 °C	18,560 µS/cm	0.14 mg/L	0.80 NTU	102.3 mV	7.19 ft	11.16 PSU	280.00 ml/min
8/26/2020 2:22 PM	16:00	5.25 pH	25.00 °C	18,401 µS/cm	0.13 mg/L	0.74 NTU	99.9 mV	7.09 ft	11.05 PSU	280.00 ml/min
8/26/2020 2:26 PM	20:00	5.25 pH	24.82 °C	18,459 µS/cm	0.13 mg/L	0.68 NTU	98.0 mV	7.06 ft	11.09 PSU	280.00 ml/min

Samples

Sample ID:	Description:
MCM-19	Metals TDS Inorganics Radium

Low-Flow Test Report:

Test Date / Time: 8/26/2020 3:22:47 PM

Project: CCR AP Scan August 2020

Operator Name: Kevin Stephenson

Location Name: MCM-20 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 13.05 ft Total Depth: 23.05 ft Initial Depth to Water: 7.56 ft	Pump Type: GeoTech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 18.05 ft Estimated Total Volume Pumped: 5200 ml Flow Cell Volume: 90 ml Final Flow Rate: 260 ml/min Final Draw Down: 0.53 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728550
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Test Notes:

Pre-purged 2 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 0.2 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000	
8/26/2020 3:22 PM	00:00	3.78 pH	29.66 °C	18,224 µS/cm	1.02 mg/L	1.36 NTU	187.8 mV	8.12 ft	10.95 PSU	260.00 ml/min
8/26/2020 3:26 PM	04:00	3.73 pH	25.51 °C	19,097 µS/cm	0.61 mg/L	1.18 NTU	201.7 mV	8.12 ft	11.51 PSU	260.00 ml/min
8/26/2020 3:30 PM	08:00	3.72 pH	25.33 °C	19,169 µS/cm	0.51 mg/L	1.23 NTU	220.2 mV	8.12 ft	11.56 PSU	260.00 ml/min
8/26/2020 3:34 PM	12:00	3.67 pH	25.11 °C	18,726 µS/cm	0.45 mg/L	0.85 NTU	257.2 mV	8.11 ft	11.27 PSU	260.00 ml/min
8/26/2020 3:38 PM	16:00	3.66 pH	25.15 °C	18,371 µS/cm	0.43 mg/L	0.98 NTU	265.9 mV	8.10 ft	11.03 PSU	260.00 ml/min
8/26/2020 3:42 PM	20:00	3.67 pH	25.02 °C	18,393 µS/cm	0.40 mg/L	0.88 NTU	254.2 mV	8.09 ft	11.05 PSU	260.00 ml/min

Samples

Sample ID:	Description:
MCM-20	Metals TDS Inorganics Radium
DUP-2	Metals TDS Inorganics Radium

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728541
Created 8/26/2020

Sensor **RDO**
Serial Number 728741
Last Calibrated 8/26/2020

Calibration Details

Slope 1.067077
Offset 0.00 mg/L

Calibration point 100%

Concentration 7.34 mg/L
Temperature 27.50 °C
Barometric Pressure 1,019.4 mbar

Sensor **Conductivity**
Serial Number 728541
Last Calibrated 8/26/2020

Calibration Details

Cell Constant 0.949
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**
Serial Number 724053
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20773
Last Calibrated	8/26/2020

Calibration Details

Total Calibration Points	3
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Calibration Point 1

pH of Buffer	4.01 pH
pH mV	171.3 mV
Temperature	27.93 °C

Calibration Point 2

pH of Buffer	6.99 pH
pH mV	-0.3 mV
Temperature	28.83 °C

Calibration Point 3

pH of Buffer	9.96 pH
pH mV	-174.3 mV
Temperature	29.16 °C

Slope and Offset 1

Slope	-57.6 mV/pH
Offset	-0.9 mV

Slope and Offset 2

Slope	-58.58 mV/pH
Offset	-0.9 mV

ORP

ORP Solution	ORP Standard
Offset	11.2 mV
Temperature	29.19 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728550
Created 8/26/2020

Sensor **RDO**
Serial Number 728776
Last Calibrated 8/26/2020

Calibration Details

Slope 1.101762
Offset 0.00 mg/L

Calibration point 100%

Concentration 6.99 mg/L
Temperature 29.30 °C
Barometric Pressure 1,019.1 mbar

Sensor **Conductivity**
Serial Number 728550
Last Calibrated 8/26/2020

Calibration Details

Cell Constant 1.005
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**
Serial Number 718937
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20796
Last Calibrated	8/26/2020

Calibration Details

Total Calibration Points	3
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Calibration Point 1

pH of Buffer	4.01 pH
pH mV	171.6 mV
Temperature	28.92 °C

Calibration Point 2

pH of Buffer	6.99 pH
pH mV	-2.4 mV
Temperature	29.05 °C

Calibration Point 3

pH of Buffer	9.96 pH
pH mV	-175.4 mV
Temperature	29.11 °C

Slope and Offset 1

Slope	-58.39 mV/pH
Offset	-3.0 mV

Slope and Offset 2

Slope	-58.23 mV/pH
Offset	-3.0 mV

ORP

ORP Solution	ORP Standard
Offset	11.7 mV
Temperature	29.12 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728638
Created 8/26/2020

Sensor **RDO**
Serial Number 728789
Last Calibrated 8/26/2020

Calibration Details

Slope 1.103059
Offset 0.00 mg/L

Calibration point 100%

Concentration 7.17 mg/L
Temperature 27.68 °C
Barometric Pressure 1,018.4 mbar

Sensor **Conductivity**
Serial Number 728638
Last Calibrated 8/26/2020

Calibration Details

Cell Constant 0.981
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**
Serial Number 726660
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20790
Last Calibrated	8/26/2020

Calibration Details

Total Calibration Points	3
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Calibration Point 1

pH of Buffer	4.01 pH
pH mV	175.0 mV
Temperature	28.28 °C

Calibration Point 2

pH of Buffer	6.99 pH
pH mV	-0.9 mV
Temperature	28.40 °C

Calibration Point 3

pH of Buffer	9.96 pH
pH mV	-174.4 mV
Temperature	28.52 °C

Slope and Offset 1

Slope	-59.03 mV/pH
Offset	-1.5 mV

Slope and Offset 2

Slope	-58.42 mV/pH
Offset	-1.5 mV

ORP

ORP Solution	ZoBell's
Offset	6.0 mV
Temperature	28.51 °C

Low-Flow Test Report:

Test Date / Time: 10/13/2020 10:11:23 AM

Project: October 2020 CCR Sampling

Operator Name: William Laaker

<p>Location Name: MCM-01 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.32 ft Total Depth: 27.32 ft Initial Depth to Water: 3.88 ft</p>	<p>Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 22.32 ft Estimated Total Volume Pumped: 2880 ml Flow Cell Volume: 90 ml Final Flow Rate: 120 ml/min Final Draw Down: 0.02 ft</p>	<p>Instrument Used: Aqua TROLL 400 Serial Number: 728541</p>
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Test Notes:

Prepurged 0.5 L

Well performed well

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/13/2020 10:11 AM	00:00	5.67 pH	25.44 °C	146.30 µS/cm	0.95 mg/L	0.99 NTU	-9.0 mV	3.88 ft	0.07 PSU	120.00 ml/min
10/13/2020 10:15 AM	04:00	5.63 pH	25.35 °C	145.42 µS/cm	0.58 mg/L	1.38 NTU	-1.7 mV	3.90 ft	0.07 PSU	120.00 ml/min
10/13/2020 10:19 AM	08:00	5.68 pH	25.33 °C	148.74 µS/cm	0.88 mg/L	1.45 NTU	3.4 mV	3.90 ft	0.07 PSU	120.00 ml/min
10/13/2020 10:23 AM	12:00	5.68 pH	25.29 °C	148.89 µS/cm	0.67 mg/L	1.29 NTU	5.8 mV	3.90 ft	0.07 PSU	120.00 ml/min
10/13/2020 10:27 AM	16:00	5.67 pH	25.15 °C	149.27 µS/cm	0.45 mg/L	1.27 NTU	7.1 mV	3.90 ft	0.07 PSU	120.00 ml/min
10/13/2020 10:31 AM	20:00	5.68 pH	25.06 °C	150.17 µS/cm	0.39 mg/L	1.29 NTU	8.4 mV	3.90 ft	0.07 PSU	120.00 ml/min
10/13/2020 10:35 AM	24:00	5.69 pH	25.01 °C	150.95 µS/cm	0.34 mg/L	0.93 NTU	8.8 mV	3.90 ft	0.07 PSU	120.00 ml/min

Samples

Sample ID:	Description:
MCM-01	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/13/2020 10:35:35 AM

Project: October 2020 CCR Sampling

Operator Name: Veronica Fay

Location Name: MCM-02 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.35 ft Total Depth: 27.35 ft Initial Depth to Water: 3.86 ft	Pump Type: Geotech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 22.35 ft Estimated Total Volume Pumped: 7800 ml Flow Cell Volume: 90 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.09 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Prepurged 1L

Ants nesting in well casing. Killed as many as possible.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 10	
10/13/2020 10:35 AM	00:00	5.03 pH	23.93 °C	175.25 µS/cm	0.43 mg/L	1.29 NTU	63.5 mV	3.86 ft	0.08 PSU	150.00 ml/min
10/13/2020 10:39 AM	04:00	5.03 pH	23.97 °C	179.21 µS/cm	0.33 mg/L	1.30 NTU	60.5 mV	3.95 ft	0.09 PSU	150.00 ml/min
10/13/2020 10:43 AM	08:00	5.03 pH	24.00 °C	181.54 µS/cm	0.27 mg/L	0.85 NTU	58.9 mV	3.95 ft	0.09 PSU	150.00 ml/min
10/13/2020 10:47 AM	12:00	5.03 pH	24.14 °C	178.70 µS/cm	0.23 mg/L	0.85 NTU	57.2 mV	3.95 ft	0.08 PSU	150.00 ml/min
10/13/2020 10:51 AM	16:00	5.03 pH	24.11 °C	175.58 µS/cm	0.22 mg/L	0.71 NTU	56.5 mV	3.95 ft	0.08 PSU	150.00 ml/min
10/13/2020 10:55 AM	20:00	5.03 pH	23.96 °C	171.39 µS/cm	0.20 mg/L	0.76 NTU	55.2 mV	3.95 ft	0.08 PSU	150.00 ml/min
10/13/2020 10:59 AM	24:00	5.03 pH	23.80 °C	168.61 µS/cm	0.19 mg/L	0.92 NTU	54.6 mV	3.95 ft	0.08 PSU	150.00 ml/min
10/13/2020 11:03 AM	28:00	5.03 pH	23.66 °C	163.71 µS/cm	0.17 mg/L	0.97 NTU	53.6 mV	3.95 ft	0.08 PSU	150.00 ml/min
10/13/2020 11:07 AM	32:00	5.03 pH	23.55 °C	162.60 µS/cm	0.16 mg/L	1.06 NTU	53.1 mV	3.95 ft	0.08 PSU	150.00 ml/min
10/13/2020 11:11 AM	36:00	5.03 pH	23.53 °C	161.14 µS/cm	0.15 mg/L	1.36 NTU	52.6 mV	3.95 ft	0.08 PSU	150.00 ml/min
10/13/2020 11:15 AM	40:00	5.03 pH	23.52 °C	162.03 µS/cm	0.15 mg/L	0.47 NTU	52.4 mV	3.95 ft	0.08 PSU	150.00 ml/min
10/13/2020 11:19 AM	44:00	5.03 pH	23.48 °C	164.42 µS/cm	0.14 mg/L	0.84 NTU	52.0 mV	3.95 ft	0.08 PSU	150.00 ml/min
10/13/2020 11:23 AM	48:00	5.03 pH	23.84 °C	165.81 µS/cm	0.14 mg/L	0.41 NTU	51.0 mV	3.95 ft	0.08 PSU	150.00 ml/min
10/13/2020 11:27 AM	52:00	5.03 pH	24.09 °C	163.82 µS/cm	0.13 mg/L	0.43 NTU	50.3 mV	3.95 ft	0.08 PSU	150.00 ml/min

Samples

Sample ID:	Description:
MCM-02	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/13/2020 8:52:13 AM

Project: October 2020 CCR Sampling

Operator Name: Veronica Fay

Location Name: MCM-04 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.57 ft Total Depth: 28.57 ft Initial Depth to Water: 8.27 ft	Pump Type: Geotech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 23.57 ft Estimated Total Volume Pumped: 2800 ml Flow Cell Volume: 90 ml Final Flow Rate: 140 ml/min Final Draw Down: 0.23 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Prepurged 2L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 10	
10/13/2020 8:52 AM	00:00	5.23 pH	22.11 °C	426.67 µS/cm	0.43 mg/L	0.91 NTU	97.0 mV	8.27 ft	0.21 PSU	140.00 ml/min
10/13/2020 8:56 AM	04:00	5.23 pH	22.09 °C	425.03 µS/cm	0.33 mg/L	1.00 NTU	96.3 mV	8.45 ft	0.21 PSU	140.00 ml/min
10/13/2020 9:00 AM	08:00	5.24 pH	22.09 °C	426.08 µS/cm	0.28 mg/L	1.29 NTU	95.5 mV	8.47 ft	0.21 PSU	140.00 ml/min
10/13/2020 9:04 AM	12:00	5.24 pH	22.05 °C	426.18 µS/cm	0.24 mg/L	1.76 NTU	95.3 mV	8.47 ft	0.21 PSU	140.00 ml/min
10/13/2020 9:08 AM	16:00	5.25 pH	22.05 °C	424.66 µS/cm	0.21 mg/L	1.53 NTU	95.0 mV	8.50 ft	0.21 PSU	140.00 ml/min
10/13/2020 9:12 AM	20:00	5.25 pH	22.05 °C	424.98 µS/cm	0.19 mg/L	1.16 NTU	94.7 mV	8.50 ft	0.21 PSU	140.00 ml/min

Samples

Sample ID:	Description:
MCM-04	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/15/2020 1:28:29 PM

Project: October 2020 CCR Sampling

Operator Name: Kevin Stephenson

Location Name: MCM-05 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.25 ft Total Depth: 28.25 ft Initial Depth to Water: 7.7 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 23.1 ft Estimated Total Volume Pumped: 3840 ml Flow Cell Volume: 90 ml Final Flow Rate: 240 ml/min Final Draw Down: 0.25 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728638
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Test Notes:

Pre-purged 2.5 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/15/2020 1:28 PM	00:00	6.52 pH	26.05 °C	6,296.4 µS/cm	0.13 mg/L	0.87 NTU	-140.9 mV	7.94 ft	3.48 PSU	240.00 ml/min
10/15/2020 1:32 PM	04:00	6.52 pH	25.73 °C	6,308.6 µS/cm	0.10 mg/L	0.99 NTU	-138.6 mV	7.93 ft	3.49 PSU	240.00 ml/min
10/15/2020 1:36 PM	08:00	6.52 pH	25.69 °C	6,347.5 µS/cm	0.10 mg/L	0.75 NTU	-137.1 mV	7.93 ft	3.51 PSU	240.00 ml/min
10/15/2020 1:40 PM	12:00	6.52 pH	25.63 °C	6,372.8 µS/cm	0.10 mg/L	0.57 NTU	-137.0 mV	7.95 ft	3.52 PSU	240.00 ml/min
10/15/2020 1:44 PM	16:00	6.52 pH	25.55 °C	6,398.1 µS/cm	0.10 mg/L	0.60 NTU	-135.2 mV	7.95 ft	3.54 PSU	240.00 ml/min

Samples

Sample ID:	Description:
MCM-05	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/14/2020 4:30:09 PM

Project: October 2020 CCR Sampling

Operator Name: Kevin Stephenson

Location Name: MCM-06 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.23 ft Total Depth: 27.23 ft Initial Depth to Water: 8.69 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 22.23 ft Estimated Total Volume Pumped: 3600 ml Flow Cell Volume: 90 ml Final Flow Rate: 180 ml/min Final Draw Down: -0.18 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728638
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Test Notes:

Pre-purged 1 liter.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/14/2020 4:30 PM	00:00	6.86 pH	32.79 °C	19,375 µS/cm	1.18 mg/L	6.06 NTU	-262.1 mV	8.73 ft	11.70 PSU	180.00 ml/min
10/14/2020 4:34 PM	04:00	6.91 pH	26.55 °C	21,724 µS/cm	0.06 mg/L	5.65 NTU	-267.7 mV	8.69 ft	13.25 PSU	180.00 ml/min
10/14/2020 4:38 PM	08:00	6.91 pH	25.82 °C	21,889 µS/cm	0.05 mg/L	4.86 NTU	-272.4 mV	8.67 ft	13.36 PSU	180.00 ml/min
10/14/2020 4:42 PM	12:00	6.92 pH	25.34 °C	21,983 µS/cm	0.05 mg/L	4.16 NTU	-275.9 mV	8.61 ft	13.42 PSU	180.00 ml/min
10/14/2020 4:46 PM	16:00	6.93 pH	25.38 °C	21,920 µS/cm	0.04 mg/L	3.21 NTU	-278.6 mV	8.55 ft	13.38 PSU	180.00 ml/min
10/14/2020 4:50 PM	20:00	6.93 pH	25.32 °C	21,942 µS/cm	0.04 mg/L	2.85 NTU	-279.5 mV	8.51 ft	13.39 PSU	180.00 ml/min

Samples

Sample ID:	Description:
MCM-06	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/14/2020 11:54:43 AM

Project: October 2020 CCR Sampling

Operator Name: Kevin Stephenson

Location Name: MCM-07 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 13.8 ft Total Depth: 23.8 ft Initial Depth to Water: 7.71 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 18.8 ft Estimated Total Volume Pumped: 29520 ml Flow Cell Volume: 90 ml Final Flow Rate: 180 ml/min Final Draw Down: 0.6 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728638
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Test Notes:

Pre-purged 2 liters

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/14/2020 11:54 AM	00:00	6.32 pH	26.76 °C	24,210 µS/cm	0.37 mg/L	3.53 NTU	-131.6 mV	8.06 ft	14.92 PSU	180.00 ml/min
10/14/2020 11:58 AM	04:00	6.33 pH	26.52 °C	24,594 µS/cm	0.22 mg/L	3.80 NTU	-153.6 mV	8.08 ft	15.18 PSU	180.00 ml/min
10/14/2020 12:02 PM	08:00	6.33 pH	26.64 °C	24,693 µS/cm	0.17 mg/L	4.47 NTU	-161.1 mV	8.09 ft	15.25 PSU	180.00 ml/min
10/14/2020 12:06 PM	12:00	6.33 pH	26.41 °C	24,803 µS/cm	0.12 mg/L	4.92 NTU	-163.4 mV	8.09 ft	15.32 PSU	180.00 ml/min
10/14/2020 12:10 PM	16:00	6.33 pH	26.25 °C	24,916 µS/cm	0.10 mg/L	5.60 NTU	-167.0 mV	8.09 ft	15.39 PSU	180.00 ml/min
10/14/2020 12:14 PM	20:00	6.33 pH	26.37 °C	25,077 µS/cm	0.08 mg/L	6.16 NTU	-170.1 mV	8.09 ft	15.50 PSU	180.00 ml/min
10/14/2020 12:18 PM	24:00	6.33 pH	26.35 °C	25,058 µS/cm	0.08 mg/L	5.78 NTU	-168.9 mV	8.09 ft	15.49 PSU	180.00 ml/min
10/14/2020 12:22 PM	28:00	6.33 pH	26.25 °C	25,191 µS/cm	0.08 mg/L	5.63 NTU	-169.5 mV	8.10 ft	15.58 PSU	180.00 ml/min
10/14/2020 12:26 PM	32:00	6.33 pH	26.25 °C	25,229 µS/cm	0.08 mg/L	6.27 NTU	-169.7 mV	8.11 ft	15.61 PSU	180.00 ml/min
10/14/2020 12:30 PM	36:00	6.33 pH	26.23 °C	25,761 µS/cm	0.08 mg/L	6.78 NTU	-170.3 mV	8.12 ft	15.97 PSU	180.00 ml/min
10/14/2020 12:34 PM	40:00	6.33 pH	26.09 °C	25,346 µS/cm	0.08 mg/L	6.76 NTU	-167.6 mV	8.12 ft	15.69 PSU	180.00 ml/min
10/14/2020 12:38 PM	44:00	6.32 pH	26.08 °C	25,372 µS/cm	0.07 mg/L	7.02 NTU	-168.1 mV	8.12 ft	15.70 PSU	180.00 ml/min
10/14/2020 12:42 PM	48:00	6.32 pH	26.08 °C	25,349 µS/cm	0.07 mg/L	7.20 NTU	-166.7 mV	8.11 ft	15.69 PSU	180.00 ml/min
10/14/2020 12:46 PM	52:00	6.32 pH	26.05 °C	25,431 µS/cm	0.07 mg/L	7.37 NTU	-166.5 mV	8.14 ft	15.74 PSU	180.00 ml/min
10/14/2020 12:50 PM	56:00	6.32 pH	26.10 °C	25,500 µS/cm	0.07 mg/L	7.16 NTU	-165.8 mV	8.15 ft	15.79 PSU	180.00 ml/min

10/14/2020 12:54 PM	01:00:00	6.32 pH	26.14 °C	25,473 µS/cm	0.07 mg/L	7.04 NTU	-164.3 mV	8.16 ft	15.77 PSU	180.00 ml/min
10/14/2020 12:58 PM	01:04:00	6.32 pH	26.69 °C	25,537 µS/cm	0.05 mg/L	7.13 NTU	-165.4 mV	8.15 ft	15.82 PSU	180.00 ml/min
10/14/2020 1:02 PM	01:08:00	6.32 pH	27.01 °C	25,509 µS/cm	0.05 mg/L	7.16 NTU	-165.7 mV	8.15 ft	15.80 PSU	180.00 ml/min
10/14/2020 1:06 PM	01:12:00	6.32 pH	26.60 °C	25,517 µS/cm	0.06 mg/L	6.84 NTU	-163.6 mV	8.16 ft	15.80 PSU	180.00 ml/min
10/14/2020 1:10 PM	01:16:00	6.32 pH	26.42 °C	25,601 µS/cm	0.06 mg/L	6.97 NTU	-164.1 mV	8.16 ft	15.86 PSU	180.00 ml/min
10/14/2020 1:14 PM	01:20:00	6.32 pH	26.50 °C	25,579 µS/cm	0.07 mg/L	7.09 NTU	-163.4 mV	8.17 ft	15.85 PSU	180.00 ml/min
10/14/2020 1:18 PM	01:24:00	6.32 pH	26.81 °C	25,517 µS/cm	0.05 mg/L	7.64 NTU	-162.7 mV	8.16 ft	15.81 PSU	180.00 ml/min
10/14/2020 1:22 PM	01:28:00	6.32 pH	26.83 °C	25,542 µS/cm	0.05 mg/L	7.21 NTU	-162.7 mV	8.17 ft	15.82 PSU	180.00 ml/min
10/14/2020 1:26 PM	01:32:00	6.32 pH	27.15 °C	25,594 µS/cm	0.04 mg/L	7.08 NTU	-163.5 mV	8.18 ft	15.86 PSU	180.00 ml/min
10/14/2020 1:30 PM	01:36:00	6.32 pH	27.21 °C	25,524 µS/cm	0.05 mg/L	6.82 NTU	-163.3 mV	8.18 ft	15.81 PSU	180.00 ml/min
10/14/2020 1:34 PM	01:40:00	6.32 pH	27.19 °C	25,588 µS/cm	0.05 mg/L	6.65 NTU	-163.2 mV	8.18 ft	15.86 PSU	180.00 ml/min
10/14/2020 1:38 PM	01:44:00	6.32 pH	27.45 °C	25,603 µS/cm	0.04 mg/L	6.76 NTU	-162.5 mV	8.19 ft	15.87 PSU	180.00 ml/min
10/14/2020 1:42 PM	01:48:00	6.32 pH	27.24 °C	25,535 µS/cm	0.04 mg/L	6.62 NTU	-162.6 mV	0.19 ft	15.82 PSU	180.00 ml/min
10/14/2020 1:46 PM	01:52:00	6.32 pH	27.24 °C	25,590 µS/cm	0.07 mg/L	6.58 NTU	-161.3 mV	8.20 ft	15.86 PSU	180.00 ml/min
10/14/2020 1:50 PM	01:56:00	6.32 pH	27.15 °C	25,491 µS/cm	0.05 mg/L	6.61 NTU	-161.3 mV	8.20 ft	15.79 PSU	180.00 ml/min
10/14/2020 1:54 PM	02:00:00	6.32 pH	27.24 °C	25,522 µS/cm	0.04 mg/L	6.42 NTU	-161.6 mV	8.22 ft	15.81 PSU	180.00 ml/min
10/14/2020 1:58 PM	02:04:00	6.32 pH	27.38 °C	25,554 µS/cm	0.04 mg/L	5.89 NTU	-162.4 mV	8.23 ft	15.83 PSU	180.00 ml/min
10/14/2020 2:02 PM	02:08:00	6.32 pH	27.44 °C	25,575 µS/cm	0.04 mg/L	5.70 NTU	-162.3 mV	8.25 ft	15.85 PSU	180.00 ml/min
10/14/2020 2:06 PM	02:12:00	6.32 pH	27.47 °C	25,536 µS/cm	0.04 mg/L	5.39 NTU	-161.2 mV	8.26 ft	15.82 PSU	180.00 ml/min
10/14/2020 2:10 PM	02:16:00	6.32 pH	27.53 °C	25,580 µS/cm	0.04 mg/L	5.19 NTU	-160.2 mV	8.26 ft	15.85 PSU	180.00 ml/min
10/14/2020 2:14 PM	02:20:00	6.32 pH	27.25 °C	25,554 µS/cm	0.04 mg/L	5.41 NTU	-160.6 mV	8.27 ft	15.83 PSU	180.00 ml/min
10/14/2020 2:18 PM	02:24:00	6.32 pH	26.98 °C	25,478 µS/cm	0.05 mg/L	5.51 NTU	-159.6 mV	8.28 ft	15.78 PSU	180.00 ml/min
10/14/2020 2:22 PM	02:28:00	6.32 pH	27.33 °C	25,494 µS/cm	0.04 mg/L	5.47 NTU	-160.4 mV	8.29 ft	15.79 PSU	180.00 ml/min
10/14/2020 2:26 PM	02:32:00	6.32 pH	27.43 °C	25,532 µS/cm	0.04 mg/L	5.15 NTU	-160.1 mV	8.30 ft	15.82 PSU	180.00 ml/min
10/14/2020 2:30 PM	02:36:00	6.32 pH	27.47 °C	25,470 µS/cm	0.05 mg/L	4.97 NTU	-157.9 mV	8.30 ft	15.78 PSU	180.00 ml/min
10/14/2020 2:34 PM	02:40:00	6.32 pH	27.28 °C	25,589 µS/cm	0.05 mg/L	4.92 NTU	-158.8 mV	8.31 ft	15.86 PSU	180.00 ml/min
10/14/2020 2:38 PM	02:44:00	6.32 pH	27.30 °C	25,574 µS/cm	0.05 mg/L	4.87 NTU	-158.6 mV	8.31 ft	15.85 PSU	180.00 ml/min

Samples

Sample ID:	Description:
MCM-07	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/12/2020 2:34:39 PM

Project: October 2020 CCR Sampling

Operator Name: Veronica Fay

Location Name: MCM-11 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 14 ft Total Depth: 24 ft Initial Depth to Water: 4.1 ft	Pump Type: Geotech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 19 ft Estimated Total Volume Pumped: 5600 ml Flow Cell Volume: 90 ml Final Flow Rate: 175 ml/min Final Draw Down: 1.36 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Prepurged 2L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 10	
10/12/2020 2:34 PM	00:00	4.97 pH	26.90 °C	112.72 µS/cm	0.22 mg/L	1.57 NTU	37.3 mV	4.10 ft	0.05 PSU	175.00 ml/min
10/12/2020 2:38 PM	04:00	4.97 pH	26.97 °C	112.65 µS/cm	0.18 mg/L	1.44 NTU	36.6 mV	5.27 ft	0.05 PSU	175.00 ml/min
10/12/2020 2:42 PM	08:00	4.97 pH	27.30 °C	113.20 µS/cm	0.16 mg/L	1.31 NTU	37.5 mV	5.32 ft	0.05 PSU	175.00 ml/min
10/12/2020 2:46 PM	12:00	4.97 pH	27.75 °C	113.29 µS/cm	0.16 mg/L	2.03 NTU	38.9 mV	5.36 ft	0.05 PSU	175.00 ml/min
10/12/2020 2:50 PM	16:00	4.98 pH	27.60 °C	113.93 µS/cm	0.22 mg/L	2.78 NTU	42.2 mV	5.39 ft	0.05 PSU	175.00 ml/min
10/12/2020 2:54 PM	20:00	4.99 pH	27.06 °C	116.95 µS/cm	0.31 mg/L	2.30 NTU	44.4 mV	5.41 ft	0.05 PSU	175.00 ml/min
10/12/2020 2:58 PM	24:00	5.00 pH	26.90 °C	119.16 µS/cm	0.39 mg/L	1.42 NTU	46.4 mV	5.43 ft	0.06 PSU	175.00 ml/min
10/12/2020 3:02 PM	28:00	5.00 pH	26.81 °C	121.73 µS/cm	0.40 mg/L	1.29 NTU	47.0 mV	5.45 ft	0.06 PSU	175.00 ml/min
10/12/2020 3:06 PM	32:00	5.00 pH	26.74 °C	123.41 µS/cm	0.41 mg/L	0.87 NTU	48.1 mV	5.46 ft	0.06 PSU	175.00 ml/min

Samples

Sample ID:	Description:
MCM-11	Metals, TDS, Inorganics, Radium
DUP-1	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/12/2020 2:21:39 PM

Project: October 2020 CCR Sampling

Operator Name: William Laaker

Location Name: MCM-12 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 19 ft Total Depth: 29 ft Initial Depth to Water: 8.67 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 24 ft Estimated Total Volume Pumped: 9600 ml Flow Cell Volume: 90 ml Final Flow Rate: 120 ml/min Final Draw Down: 0.94 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728541
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Test Notes:

Prepurged 0.5 L

Water has orange coloration

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/12/2020 2:21 PM	00:00	6.34 pH	26.11 °C	2,540.9 µS/cm	0.18 mg/L	2.05 NTU	34.8 mV	8.67 ft	1.33 PSU	120.00 ml/min
10/12/2020 2:25 PM	04:00	6.33 pH	25.73 °C	2,554.3 µS/cm	0.08 mg/L	2.87 NTU	12.3 mV	9.41 ft	1.33 PSU	120.00 ml/min
10/12/2020 2:29 PM	08:00	6.33 pH	25.63 °C	2,552.8 µS/cm	0.05 mg/L	3.35 NTU	-1.1 mV	9.50 ft	1.33 PSU	120.00 ml/min
10/12/2020 2:33 PM	12:00	6.33 pH	25.65 °C	2,550.8 µS/cm	0.03 mg/L	3.41 NTU	-9.2 mV	9.53 ft	1.33 PSU	120.00 ml/min
10/12/2020 2:37 PM	16:00	6.33 pH	25.71 °C	2,564.3 µS/cm	0.02 mg/L	5.64 NTU	-14.6 mV	9.58 ft	1.34 PSU	120.00 ml/min
10/12/2020 2:41 PM	20:00	6.33 pH	26.20 °C	2,582.8 µS/cm	0.01 mg/L	7.79 NTU	-18.6 mV	9.60 ft	1.35 PSU	120.00 ml/min
10/12/2020 2:45 PM	24:00	6.33 pH	26.42 °C	2,577.9 µS/cm	0.01 mg/L	9.16 NTU	-21.5 mV	9.60 ft	1.35 PSU	120.00 ml/min
10/12/2020 2:49 PM	28:00	6.34 pH	26.18 °C	2,583.8 µS/cm	0.01 mg/L	10.72 NTU	-23.7 mV	9.60 ft	1.35 PSU	120.00 ml/min
10/12/2020 2:53 PM	32:00	6.34 pH	25.69 °C	2,593.8 µS/cm	0.01 mg/L	9.86 NTU	-25.3 mV	9.60 ft	1.36 PSU	120.00 ml/min
10/12/2020 2:57 PM	36:00	6.34 pH	25.56 °C	2,611.5 µS/cm	0.01 mg/L	9.09 NTU	-26.7 mV	9.60 ft	1.37 PSU	120.00 ml/min
10/12/2020 3:01 PM	40:00	6.34 pH	25.48 °C	2,618.9 µS/cm	0.01 mg/L	8.70 NTU	-27.7 mV	9.60 ft	1.37 PSU	120.00 ml/min
10/12/2020 3:05 PM	44:00	6.34 pH	25.44 °C	2,618.5 µS/cm	0.01 mg/L	7.52 NTU	-28.6 mV	9.60 ft	1.37 PSU	120.00 ml/min
10/12/2020 3:09 PM	48:00	6.34 pH	25.37 °C	2,618.0 µS/cm	0.01 mg/L	7.27 NTU	-29.4 mV	9.60 ft	1.37 PSU	120.00 ml/min
10/12/2020 3:13 PM	52:00	6.35 pH	25.29 °C	2,616.6 µS/cm	0.01 mg/L	6.74 NTU	-30.1 mV	9.60 ft	1.37 PSU	120.00 ml/min
10/12/2020 3:17 PM	56:00	6.35 pH	25.24 °C	2,619.4 µS/cm	0.01 mg/L	6.05 NTU	-30.6 mV	9.61 ft	1.37 PSU	120.00 ml/min

10/12/2020 3:21 PM	01:00:00	6.35 pH	25.18 °C	2,618.0 µS/cm	0.01 mg/L	5.78 NTU	-30.8 mV	9.61 ft	1.37 PSU	120.00 ml/min
10/12/2020 3:25 PM	01:04:00	6.35 pH	25.23 °C	2,616.8 µS/cm	0.01 mg/L	5.30 NTU	-31.3 mV	9.61 ft	1.37 PSU	120.00 ml/min
10/12/2020 3:29 PM	01:08:00	6.35 pH	25.20 °C	2,616.8 µS/cm	0.01 mg/L	5.16 NTU	-31.2 mV	9.61 ft	1.37 PSU	120.00 ml/min
10/12/2020 3:33 PM	01:12:00	6.35 pH	25.19 °C	2,616.1 µS/cm	0.01 mg/L	4.91 NTU	-31.4 mV	9.61 ft	1.37 PSU	120.00 ml/min
10/12/2020 3:37 PM	01:16:00	6.35 pH	25.18 °C	2,614.8 µS/cm	0.01 mg/L	4.73 NTU	-31.4 mV	9.61 ft	1.37 PSU	120.00 ml/min
10/12/2020 3:41 PM	01:20:00	6.35 pH	25.23 °C	2,605.7 µS/cm	0.01 mg/L	4.69 NTU	-31.5 mV	9.61 ft	1.36 PSU	120.00 ml/min

Samples

Sample ID:	Description:
MCM-12	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/13/2020 8:47:03 AM

Project: October 2020 CCR Sampling

Operator Name: William Laaker

Location Name: MCM-14 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.11 ft Total Depth: 28.11 ft Initial Depth to Water: 9.13 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 23.11 ft Estimated Total Volume Pumped: 3000 ml Flow Cell Volume: 90 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.41 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728541
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Test Notes:

Prepurged 0.5 L

Water has odor.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/13/2020 8:47 AM	00:00	6.53 pH	24.72 °C	19,544 µS/cm	1.10 mg/L	0.35 NTU	-120.3 mV	9.13 ft	11.80 PSU	150.00 ml/min
10/13/2020 8:51 AM	04:00	6.54 pH	24.65 °C	19,414 µS/cm	0.68 mg/L	0.62 NTU	-127.4 mV	9.36 ft	11.72 PSU	150.00 ml/min
10/13/2020 8:55 AM	08:00	6.55 pH	24.64 °C	19,378 µS/cm	0.44 mg/L	0.73 NTU	-136.2 mV	9.40 ft	11.69 PSU	150.00 ml/min
10/13/2020 8:59 AM	12:00	6.56 pH	24.65 °C	19,369 µS/cm	0.33 mg/L	0.59 NTU	-143.7 mV	9.45 ft	11.69 PSU	150.00 ml/min
10/13/2020 9:03 AM	16:00	6.56 pH	24.62 °C	19,358 µS/cm	0.24 mg/L	0.59 NTU	-149.6 mV	9.50 ft	11.68 PSU	150.00 ml/min
10/13/2020 9:07 AM	20:00	6.56 pH	24.66 °C	19,332 µS/cm	0.18 mg/L	0.42 NTU	-154.9 mV	9.54 ft	11.66 PSU	150.00 ml/min

Samples

Sample ID:	Description:
MCM-14	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/13/2020 1:22:18 PM

Project: October 2020 CCR Sampling

Operator Name: Veronica Fay

Location Name: MCM-15 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 16.6 ft Total Depth: 26.6 ft Initial Depth to Water: 8.43 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 21.6 ft Estimated Total Volume Pumped: 3920 ml Flow Cell Volume: 90 ml Final Flow Rate: 140 ml/min Final Draw Down: 0.02 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Prepurged 1L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 10	
10/13/2020 1:22 PM	00:00	5.06 pH	27.25 °C	55.38 µS/cm	0.44 mg/L	1.33 NTU	101.1 mV	8.43 ft	0.03 PSU	140.00 ml/min
10/13/2020 1:26 PM	04:00	5.04 pH	27.27 °C	54.54 µS/cm	0.34 mg/L	1.31 NTU	101.3 mV	8.45 ft	0.02 PSU	140.00 ml/min
10/13/2020 1:30 PM	08:00	5.03 pH	27.62 °C	54.08 µS/cm	0.27 mg/L	1.22 NTU	101.5 mV	8.45 ft	0.02 PSU	140.00 ml/min
10/13/2020 1:34 PM	12:00	5.03 pH	27.79 °C	54.37 µS/cm	0.29 mg/L	1.41 NTU	101.7 mV	8.45 ft	0.02 PSU	140.00 ml/min
10/13/2020 1:38 PM	16:00	5.04 pH	27.94 °C	55.25 µS/cm	0.38 mg/L	1.47 NTU	102.0 mV	8.45 ft	0.02 PSU	140.00 ml/min
10/13/2020 1:42 PM	20:00	5.03 pH	28.12 °C	55.68 µS/cm	0.44 mg/L	1.79 NTU	102.1 mV	8.45 ft	0.03 PSU	140.00 ml/min
10/13/2020 1:46 PM	24:00	5.03 pH	27.99 °C	55.37 µS/cm	0.44 mg/L	1.70 NTU	102.0 mV	8.45 ft	0.03 PSU	140.00 ml/min
10/13/2020 1:50 PM	28:00	5.02 pH	27.71 °C	53.85 µS/cm	0.31 mg/L	1.60 NTU	102.8 mV	8.45 ft	0.02 PSU	140.00 ml/min

Samples

Sample ID:	Description:
MCM-15	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/13/2020 1:44:11 PM

Project: October 2020 CCR Sampling

Operator Name: Kevin Stephenson

Location Name: MCM-16 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.21 ft Total Depth: 28.21 ft Initial Depth to Water: 8.32 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 23.21 ft Estimated Total Volume Pumped: 2880 ml Flow Cell Volume: 90 ml Final Flow Rate: 180 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728638
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Test Notes:

Pre-purged 2 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/13/2020 1:44 PM	00:00	5.15 pH	23.51 °C	171.93 µS/cm	0.37 mg/L	1.49 NTU	104.4 mV	8.34 ft	0.08 PSU	180.00 ml/min
10/13/2020 1:48 PM	04:00	5.16 pH	23.29 °C	171.37 µS/cm	0.30 mg/L	2.10 NTU	98.1 mV	8.36 ft	0.08 PSU	180.00 ml/min
10/13/2020 1:52 PM	08:00	5.16 pH	23.16 °C	169.24 µS/cm	0.26 mg/L	2.17 NTU	96.1 mV	8.36 ft	0.08 PSU	180.00 ml/min
10/13/2020 1:56 PM	12:00	5.17 pH	23.06 °C	167.30 µS/cm	0.25 mg/L	2.31 NTU	93.1 mV	8.36 ft	0.08 PSU	180.00 ml/min
10/13/2020 2:00 PM	16:00	5.17 pH	23.01 °C	168.35 µS/cm	0.23 mg/L	2.49 NTU	91.0 mV	8.36 ft	0.08 PSU	180.00 ml/min

Samples

Sample ID:	Description:
MCM-16	Metals, TDS, Inorganics, Radium
DUP-2	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/13/2020 11:48:46 AM

Project: October 2020 CCR Sampling

Operator Name: William Laaker

Location Name: MCM-17 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.44 ft Total Depth: 27.44 ft Initial Depth to Water: 9.18 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 22.44 ft Estimated Total Volume Pumped: 5200 ml Flow Cell Volume: 90 ml Final Flow Rate: 130 ml/min Final Draw Down: 0.13 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728541
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Test Notes:

Prepurged 0.5 L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/13/2020 11:48 AM	00:00	6.41 pH	26.44 °C	11,344 µS/cm	0.70 mg/L	1.04 NTU	-92.5 mV	9.18 ft	6.55 PSU	130.00 ml/min
10/13/2020 11:52 AM	04:00	6.35 pH	25.92 °C	11,927 µS/cm	0.34 mg/L	1.13 NTU	-95.5 mV	9.23 ft	6.91 PSU	130.00 ml/min
10/13/2020 11:56 AM	08:00	6.33 pH	25.79 °C	12,170 µS/cm	0.19 mg/L	1.72 NTU	-99.2 mV	9.24 ft	7.06 PSU	130.00 ml/min
10/13/2020 12:00 PM	12:00	6.32 pH	25.78 °C	12,320 µS/cm	0.12 mg/L	2.24 NTU	-101.7 mV	9.24 ft	7.16 PSU	130.00 ml/min
10/13/2020 12:04 PM	16:00	6.31 pH	25.65 °C	12,450 µS/cm	0.09 mg/L	2.75 NTU	-104.6 mV	9.25 ft	7.24 PSU	130.00 ml/min
10/13/2020 12:08 PM	20:00	6.31 pH	25.69 °C	12,544 µS/cm	0.08 mg/L	3.12 NTU	-107.3 mV	9.26 ft	7.30 PSU	130.00 ml/min
10/13/2020 12:12 PM	24:00	6.32 pH	25.70 °C	12,572 µS/cm	0.08 mg/L	3.75 NTU	-107.9 mV	9.27 ft	7.31 PSU	130.00 ml/min
10/13/2020 12:16 PM	28:00	6.32 pH	25.68 °C	12,633 µS/cm	0.07 mg/L	4.00 NTU	-111.4 mV	9.28 ft	7.35 PSU	130.00 ml/min
10/13/2020 12:20 PM	32:00	6.32 pH	25.72 °C	12,674 µS/cm	0.07 mg/L	4.48 NTU	-112.3 mV	9.29 ft	7.38 PSU	130.00 ml/min
10/13/2020 12:24 PM	36:00	6.33 pH	25.62 °C	12,678 µS/cm	0.07 mg/L	4.36 NTU	-111.1 mV	9.30 ft	7.38 PSU	130.00 ml/min
10/13/2020 12:28 PM	40:00	6.34 pH	25.70 °C	12,694 µS/cm	0.07 mg/L	4.23 NTU	-113.5 mV	9.31 ft	7.39 PSU	130.00 ml/min

Samples

Sample ID:	Description:
MCM-17	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/12/2020 3:16:39 PM

Project: October 2020 CCR Sampling

Operator Name: Kevin Stephenson

Location Name: MCM-18 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.86 ft Total Depth: 27.86 ft Initial Depth to Water: 5.86 ft	Pump Type: GeoTech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 22.86 ft Estimated Total Volume Pumped: 2880 ml Flow Cell Volume: 90 ml Final Flow Rate: 180 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728638
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Test Notes:

Pre-purged 2 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/12/2020 3:16 PM	00:00	4.28 pH	26.01 °C	4,821.4 µS/cm	0.61 mg/L	0.40 NTU	105.5 mV	5.86 ft	2.62 PSU	180.00 ml/min
10/12/2020 3:20 PM	04:00	4.28 pH	24.74 °C	4,846.1 µS/cm	0.41 mg/L	0.30 NTU	103.2 mV	5.86 ft	2.63 PSU	180.00 ml/min
10/12/2020 3:24 PM	08:00	4.29 pH	24.53 °C	4,880.4 µS/cm	0.26 mg/L	0.44 NTU	103.7 mV	5.86 ft	2.65 PSU	180.00 ml/min
10/12/2020 3:28 PM	12:00	4.29 pH	24.34 °C	4,841.8 µS/cm	0.30 mg/L	0.37 NTU	103.7 mV	5.86 ft	2.63 PSU	180.00 ml/min
10/12/2020 3:32 PM	16:00	4.29 pH	24.28 °C	4,853.8 µS/cm	0.23 mg/L	0.33 NTU	103.6 mV	5.86 ft	2.64 PSU	180.00 ml/min

Samples

Sample ID:	Description:
MCM-18	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/13/2020 9:34:44 AM

Project: October 2020 CCR Sampling

Operator Name: Kevin Stephenson

Location Name: MCM-19 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.32 ft Total Depth: 28.32 ft Initial Depth to Water: 6.15 ft	Pump Type: GeoTech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 23.32 ft Estimated Total Volume Pumped: 4320 ml Flow Cell Volume: 90 ml Final Flow Rate: 180 ml/min Final Draw Down: 0.4 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728638
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Test Notes:

Pre-purged 2 liters

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/13/2020 9:34 AM	00:00	5.03 pH	24.03 °C	17,294 µS/cm	1.54 mg/L	1.51 NTU	87.2 mV	6.40 ft	10.33 PSU	180.00 ml/min
10/13/2020 9:38 AM	04:00	5.03 pH	23.33 °C	17,076 µS/cm	0.61 mg/L	0.64 NTU	82.4 mV	6.42 ft	10.18 PSU	180.00 ml/min
10/13/2020 9:42 AM	08:00	5.03 pH	23.24 °C	16,935 µS/cm	0.80 mg/L	0.44 NTU	82.2 mV	6.46 ft	10.09 PSU	180.00 ml/min
10/13/2020 9:46 AM	12:00	5.04 pH	23.19 °C	17,190 µS/cm	0.59 mg/L	0.38 NTU	82.4 mV	6.48 ft	10.26 PSU	180.00 ml/min
10/13/2020 9:50 AM	16:00	5.04 pH	23.18 °C	17,108 µS/cm	0.16 mg/L	0.68 NTU	80.9 mV	6.51 ft	10.20 PSU	180.00 ml/min
10/13/2020 9:54 AM	20:00	5.04 pH	23.16 °C	16,733 µS/cm	0.11 mg/L	0.59 NTU	79.8 mV	6.53 ft	9.96 PSU	180.00 ml/min
10/13/2020 9:58 AM	24:00	5.04 pH	23.02 °C	17,047 µS/cm	0.10 mg/L	0.31 NTU	79.2 mV	6.55 ft	10.16 PSU	180.00 ml/min

Samples

Sample ID:	Description:
MCM-19	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 10/13/2020 10:56:44 AM

Project: October 2020 CCR Sampling

Operator Name: Kevin Stephenson

<p>Location Name: MCM-20 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 13.05 ft Total Depth: 23.05 ft Initial Depth to Water: 7.7 ft</p>	<p>Pump Type: GeoTech Peristaltic Tubing Type: LDPE Pump Intake From TOC: 18.05 ft Estimated Total Volume Pumped: 3520 ml Flow Cell Volume: 90 ml Final Flow Rate: 220 ml/min Final Draw Down: 0.65 ft</p>	<p>Instrument Used: Aqua TROLL 400 Serial Number: 728638</p>
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Test Notes:

Pre-purged 2 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
10/13/2020 10:56 AM	00:00	3.75 pH	27.16 °C	18,921 µS/cm	0.35 mg/L	0.50 NTU	164.0 mV	8.27 ft	11.40 PSU	220.00 ml/min
10/13/2020 11:00 AM	04:00	3.73 pH	25.99 °C	19,083 µS/cm	0.13 mg/L	0.79 NTU	168.5 mV	8.29 ft	11.50 PSU	220.00 ml/min
10/13/2020 11:04 AM	08:00	3.73 pH	26.04 °C	19,068 µS/cm	0.11 mg/L	0.53 NTU	172.2 mV	8.31 ft	11.49 PSU	220.00 ml/min
10/13/2020 11:08 AM	12:00	3.73 pH	26.00 °C	19,071 µS/cm	0.10 mg/L	0.74 NTU	174.5 mV	8.32 ft	11.50 PSU	220.00 ml/min
10/13/2020 11:12 AM	16:00	3.72 pH	25.66 °C	19,161 µS/cm	0.09 mg/L	0.75 NTU	175.7 mV	8.35 ft	11.55 PSU	220.00 ml/min

Samples

Sample ID:	Description:
MCM-20	Metals, TDS, Inorganics, Radium

Low-Flow Test Report:

Test Date / Time: 1/4/2021 2:39:24 PM

Project: McManus Dike Re-Sample

Operator Name: William Laaker

Location Name: MCM-05 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.25 ft Total Depth: 28.25 ft Initial Depth to Water: 7.81 ft	Pump Type: QED Dedicated Tubing Type: LDPE Pump Intake From TOC: 23.25 ft Estimated Total Volume Pumped: 3800 ml Flow Cell Volume: 90 ml Final Flow Rate: 190 ml/min Final Draw Down: 0.2 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Prepurged 1 L

Water has odor.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000 %	
1/4/2021 2:39 PM	00:00	6.57 pH	22.68 °C	10,690 µS/cm	1.21 mg/L	0.55 NTU	-130.4 mV	7.81 ft	6.13 PSU	190.00 ml/min
1/4/2021 2:43 PM	04:00	6.61 pH	22.67 °C	11,790 µS/cm	0.29 mg/L	0.47 NTU	-146.6 mV	7.93 ft	6.82 PSU	190.00 ml/min
1/4/2021 2:47 PM	08:00	6.64 pH	22.62 °C	12,182 µS/cm	0.15 mg/L	0.44 NTU	-154.2 mV	7.93 ft	7.06 PSU	190.00 ml/min
1/4/2021 2:51 PM	12:00	6.65 pH	22.63 °C	12,258 µS/cm	0.14 mg/L	0.43 NTU	-158.1 mV	7.96 ft	7.11 PSU	190.00 ml/min
1/4/2021 2:55 PM	16:00	6.65 pH	22.84 °C	12,308 µS/cm	0.13 mg/L	0.42 NTU	-161.6 mV	7.99 ft	7.14 PSU	190.00 ml/min
1/4/2021 2:59 PM	20:00	6.66 pH	22.96 °C	12,319 µS/cm	0.13 mg/L	0.42 NTU	-161.8 mV	8.01 ft	7.15 PSU	190.00 ml/min

Samples

Sample ID:	Description:
MCM-05	Metals, TDS, Inorganics, Radium

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728541
Created 10/12/2020

Sensor **RDO**

Serial Number 728741
Last Calibrated 10/12/2020

Calibration Details

Slope 1.195382
Offset 0.00 mg/L

Calibration point 100%

Concentration 7.13 mg/L
Temperature 23.41 °C
Barometric Pressure 1,014.4 mbar

Sensor **Conductivity**

Serial Number 728541
Last Calibrated 10/12/2020

Calibration Details

Cell Constant 0.98
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**

Serial Number 724053
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20773
Last Calibrated	10/12/2020

Calibration Details

Total Calibration Points	3
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Calibration Point 1

pH of Buffer	4.00 pH
pH mV	154.6 mV
Temperature	23.61 °C

Calibration Point 2

pH of Buffer	7.00 pH
pH mV	-15.3 mV
Temperature	23.50 °C

Calibration Point 3

pH of Buffer	10.00 pH
pH mV	-191.4 mV
Temperature	23.52 °C

Slope and Offset 1

Slope	-56.63 mV/pH
Offset	-15.3 mV

Slope and Offset 2

Slope	-58.68 mV/pH
Offset	-15.3 mV

ORP

ORP Solution	ORP Standard
Offset	17.9 mV
Temperature	23.54 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728563
Created 10/12/2020

Sensor **RDO**

Serial Number 728772
Last Calibrated 10/12/2020

Calibration Details

Slope 1.095372
Offset 0.00 mg/L

Calibration point 100%

Concentration 7.41 mg/L
Temperature 26.06 °C
Barometric Pressure 1,014.5 mbar

Sensor **Conductivity**

Serial Number 728563
Last Calibrated 10/12/2020

Calibration Details

Cell Constant 1.01
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**

Serial Number 728332
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20788
Last Calibrated	10/12/2020

Calibration Details

Total Calibration Points 3

Calibration Point 1

pH of Buffer 4.00 pH
pH mV 171.3 mV
Temperature 25.06 °C

Calibration Point 2

pH of Buffer 7.00 pH
pH mV -2.4 mV
Temperature 24.92 °C

Calibration Point 3

pH of Buffer 10.00 pH
pH mV -177.0 mV
Temperature 24.87 °C

Slope and Offset 1

Slope -57.87 mV/pH
Offset -2.4 mV

Slope and Offset 2

Slope -58.2 mV/pH
Offset -2.4 mV

ORP

ORP Solution ORP Standard
Offset 1.9 mV
Temperature 24.78 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728638
Created 10/12/2020

Sensor **RDO**

Serial Number 728789
Last Calibrated 10/12/2020

Calibration Details

Slope 1.158638
Offset 0.00 mg/L

Calibration point 100%

Concentration 6.38 mg/L
Temperature 31.40 °C
Barometric Pressure 1,014.5 mbar

Sensor **Conductivity**

Serial Number 728638
Last Calibrated 10/12/2020

Calibration Details

Cell Constant 1.002
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**

Serial Number 726660
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20790
Last Calibrated	10/12/2020

Calibration Details

Total Calibration Points	3
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Calibration Point 1

pH of Buffer	4.01 pH
pH mV	163.1 mV
Temperature	28.03 °C

Calibration Point 2

pH of Buffer	7.00 pH
pH mV	-12.9 mV
Temperature	27.10 °C

Calibration Point 3

pH of Buffer	10.00 pH
pH mV	-184.3 mV
Temperature	26.74 °C

Slope and Offset 1

Slope	-58.87 mV/pH
Offset	-12.9 mV

Slope and Offset 2

Slope	-57.13 mV/pH
Offset	-12.9 mV

ORP

ORP Solution	ORP Standard
Offset	15.0 mV
Temperature	26.59 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728541
Created 10/13/2020

Sensor **RDO**

Serial Number 728741
Last Calibrated 10/13/2020

Calibration Details

Slope 1.102095
Offset 0.00 mg/L

Calibration point 100%

Concentration 8.16 mg/L
Temperature 20.70 °C
Barometric Pressure 1,015.7 mbar

Sensor **Conductivity**

Serial Number 728541
Last Calibrated 10/13/2020

Calibration Details

Cell Constant 0.966
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**

Serial Number 724053
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20773
Last Calibrated	10/13/2020

Calibration Details

Total Calibration Points	3
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Calibration Point 1

pH of Buffer	4.00 pH
pH mV	154.4 mV
Temperature	21.22 °C

Calibration Point 2

pH of Buffer	7.02 pH
pH mV	-11.1 mV
Temperature	22.23 °C

Calibration Point 3

pH of Buffer	10.00 pH
pH mV	-185.2 mV
Temperature	22.73 °C

Slope and Offset 1

Slope	-54.83 mV/pH
Offset	-10.1 mV

Slope and Offset 2

Slope	-58.41 mV/pH
Offset	-10.0 mV

ORP

ORP Solution	ORP Standard
Offset	16.9 mV
Temperature	22.80 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728563
Created 10/13/2020

Sensor **RDO**

Serial Number 728772
Last Calibrated 10/13/2020

Calibration Details

Slope 1.136797
Offset 0.00 mg/L

Calibration point 100%

Concentration 7.75 mg/L
Temperature 21.70 °C
Barometric Pressure 1,015.7 mbar

Sensor **Conductivity**

Serial Number 728563
Last Calibrated 10/13/2020

Calibration Details

Cell Constant 0.989
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**

Serial Number 728332
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20788
Last Calibrated	10/13/2020

Calibration Details

Total Calibration Points	3
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Calibration Point 1

pH of Buffer	4.00 pH
pH mV	169.7 mV
Temperature	22.04 °C

Calibration Point 2

pH of Buffer	7.02 pH
pH mV	-2.4 mV
Temperature	22.48 °C

Calibration Point 3

pH of Buffer	10.00 pH
pH mV	-176.1 mV
Temperature	22.73 °C

Slope and Offset 1

Slope	-56.97 mV/pH
Offset	-1.2 mV

Slope and Offset 2

Slope	-58.28 mV/pH
Offset	-1.2 mV

ORP

ORP Solution	ORP Standard
Offset	0.5 mV
Temperature	22.74 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728638
Created 10/13/2020

Sensor **RDO**

Serial Number 728789
Last Calibrated 10/13/2020

Calibration Details

Slope 1.121803
Offset 0.00 mg/L

Calibration point 100%

Concentration 7.85 mg/L
Temperature 21.77 °C
Barometric Pressure 1,016.5 mbar

Sensor **Conductivity**

Serial Number 728638
Last Calibrated 10/13/2020

Calibration Details

Cell Constant 0.989
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**

Serial Number 726660
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20790
Last Calibrated	10/13/2020

Calibration Details

Total Calibration Points	3
--------------------------	---

Calibration Point 1

pH of Buffer	4.00 pH
pH mV	160.9 mV
Temperature	22.16 °C

Calibration Point 2

pH of Buffer	7.02 pH
pH mV	-12.3 mV
Temperature	22.35 °C

Calibration Point 3

pH of Buffer	10.04 pH
pH mV	-185.6 mV
Temperature	22.48 °C

Slope and Offset 1

Slope	-57.36 mV/pH
Offset	-11.2 mV

Slope and Offset 2

Slope	-57.36 mV/pH
Offset	-11.2 mV

ORP

ORP Solution	ORP Standard
Offset	9.5 mV
Temperature	22.42 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728638
Created 10/14/2020

Sensor **RDO**

Serial Number 728789
Last Calibrated 10/14/2020

Calibration Details

Slope 1.103364
Offset 0.00 mg/L

Calibration point 100%

Concentration 7.94 mg/L
Temperature 22.17 °C
Barometric Pressure 1,018.0 mbar

Sensor **Conductivity**

Serial Number 728638
Last Calibrated 10/14/2020

Calibration Details

Cell Constant 1.003
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**

Serial Number 726660
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20790
Last Calibrated	10/14/2020

Calibration Details

Total Calibration Points	3
--------------------------	---

Calibration Point 1

pH of Buffer	4.00 pH
pH mV	161.4 mV
Temperature	21.65 °C

Calibration Point 2

pH of Buffer	7.00 pH
pH mV	-13.1 mV
Temperature	22.66 °C

Calibration Point 3

pH of Buffer	10.00 pH
pH mV	-185.9 mV
Temperature	23.08 °C

Slope and Offset 1

Slope	-58.17 mV/pH
Offset	-13.1 mV

Slope and Offset 2

Slope	-57.6 mV/pH
Offset	-13.1 mV

ORP

ORP Solution	ORP Standard
Offset	10.9 mV
Temperature	23.13 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728638
Created 10/15/2020

Sensor **RDO**
Serial Number 728789
Last Calibrated 10/15/2020

Calibration Details

Slope 1.095903
Offset 0.00 mg/L

Calibration point 100%

Concentration 7.82 mg/L
Temperature 23.34 °C
Barometric Pressure 1,018.4 mbar

Sensor **Conductivity**
Serial Number 728638
Last Calibrated 10/15/2020

Calibration Details

Cell Constant 0.991
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**
Serial Number 726660
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20790
Last Calibrated	10/15/2020

Calibration Details

Total Calibration Points	3
--------------------------	---

Calibration Point 1

pH of Buffer	4.00 pH
pH mV	159.8 mV
Temperature	23.96 °C

Calibration Point 2

pH of Buffer	7.00 pH
pH mV	-13.3 mV
Temperature	24.06 °C

Calibration Point 3

pH of Buffer	10.00 pH
pH mV	-188.7 mV
Temperature	24.23 °C

Slope and Offset 1

Slope	-57.71 mV/pH
Offset	-13.3 mV

Slope and Offset 2

Slope	-58.44 mV/pH
Offset	-13.3 mV

ORP

ORP Solution	ORP Standard
Offset	13.2 mV
Temperature	24.19 °C

Calibration Report

Instrument Aqua TROLL 400
Serial Number 728563
Created 1/4/2021

Sensor **RDO**
Serial Number 728772
Last Calibrated 1/4/2021

Calibration Details

Slope 1.151102
Offset 0.00 mg/L

Calibration point 100%

Concentration 8.16 mg/L
Temperature 18.61 °C
Barometric Pressure 1,018.1 mbar

Sensor **Conductivity**
Serial Number 728563
Last Calibrated 1/4/2021

Calibration Details

Cell Constant 0.991
Reference Temperature 25.00 °C
TDS Conversion Factor (ppm) 0.65

Sensor **Level**
Serial Number 728332
Last Calibrated Factory Defaults

Sensor	pH/ORP
Serial Number	20788
Last Calibrated	1/4/2021

Calibration Details

Total Calibration Points	3
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Calibration Point 1

pH of Buffer	4.00 pH
pH mV	168.8 mV
Temperature	17.23 °C

Calibration Point 2

pH of Buffer	7.02 pH
pH mV	3.1 mV
Temperature	16.92 °C

Calibration Point 3

pH of Buffer	10.08 pH
pH mV	-164.6 mV
Temperature	16.60 °C

Slope and Offset 1

Slope	-54.86 mV/pH
Offset	4.2 mV

Slope and Offset 2

Slope	-54.8 mV/pH
Offset	4.2 mV

ORP

ORP Solution	ORP Standard
Offset	-12.8 mV
Temperature	16.38 °C

APPENDIX B

Monitoring Well Redevelopment Logs

Low-Flow Test Report:

Test Date / Time: 8/12/2020 4:04:24 PM
Project: Plant McManus Well Development
Operator Name: Kevin Stephenson

Location Name: MCM-01 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.3 ft Total Depth: 28.3 ft Initial Depth to Water: 5.19 ft	Pump Type: Proactive 12V Tubing Type: LDPE Pump Intake From TOC: 27.3 ft Estimated Total Volume Pumped: 60000 ml Flow Cell Volume: 90 ml Final Flow Rate: 3000 ml/min Final Draw Down: 0.52 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728648
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 1000 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000	
8/12/2020 4:04 PM	00:00	6.07 pH	23.54 °C	170.33 µS/cm	0.04 mg/L	11.90 NTU	48.3 mV	5.75 ft	0.08 PSU	3,000.0 ml/min
8/12/2020 4:08 PM	04:00	5.88 pH	22.89 °C	171.41 µS/cm	0.03 mg/L	3.98 NTU	52.7 mV	5.74 ft	0.08 PSU	3,000.0 ml/min
8/12/2020 4:12 PM	08:00	5.85 pH	22.87 °C	171.52 µS/cm	0.02 mg/L	3.11 NTU	53.1 mV	5.72 ft	0.08 PSU	3,000.0 ml/min
8/12/2020 4:16 PM	12:00	5.84 pH	22.86 °C	172.74 µS/cm	0.02 mg/L	2.76 NTU	53.5 mV	5.71 ft	0.08 PSU	3,000.0 ml/min
8/12/2020 4:20 PM	16:00	5.82 pH	22.84 °C	172.57 µS/cm	0.02 mg/L	2.48 NTU	54.2 mV	5.71 ft	0.08 PSU	3,000.0 ml/min
8/12/2020 4:24 PM	20:00	5.82 pH	22.83 °C	172.89 µS/cm	0.02 mg/L	2.55 NTU	54.0 mV	5.71 ft	0.08 PSU	3,000.0 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/13/2020 9:55:49 AM
Project: Plant McManus Well Development
Operator Name: Kevin Stephenson

Location Name: MCM-02 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.4 ft Total Depth: 27.4 ft Initial Depth to Water: 5.44 ft	Pump Type: Proactive 12V Tubing Type: LDPE Pump Intake From TOC: 26.4 ft Estimated Total Volume Pumped: 80866 ml Flow Cell Volume: 90 ml Final Flow Rate: 4000 ml/min Final Draw Down: 2.95 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728648
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Test Notes:
Pre-purged 170 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 1000 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000	
8/13/2020 9:55 AM	00:00	4.91 pH	21.62 °C	177.30 µS/cm	0.04 mg/L	5.46 NTU	74.6 mV	8.40 ft	0.08 PSU	4,000.0 ml/min
8/13/2020 9:56 AM	00:13	4.92 pH	21.61 °C	185.06 µS/cm	0.04 mg/L	3.66 NTU	80.8 mV	8.38 ft	0.09 PSU	4,000.0 ml/min
8/13/2020 10:00 AM	04:13	4.91 pH	21.47 °C	178.28 µS/cm	0.02 mg/L	1.98 NTU	72.6 mV	8.36 ft	0.08 PSU	4,000.0 ml/min
8/13/2020 10:04 AM	08:13	4.91 pH	21.46 °C	175.25 µS/cm	0.02 mg/L	2.00 NTU	68.5 mV	8.34 ft	0.08 PSU	4,000.0 ml/min
8/13/2020 10:08 AM	12:13	4.91 pH	21.45 °C	178.21 µS/cm	0.01 mg/L	2.59 NTU	65.5 mV	8.34 ft	0.08 PSU	4,000.0 ml/min
8/13/2020 10:12 AM	16:13	4.92 pH	21.46 °C	180.36 µS/cm	0.01 mg/L	1.87 NTU	63.7 mV	8.35 ft	0.09 PSU	4,000.0 ml/min
8/13/2020 10:16 AM	20:13	4.92 pH	21.45 °C	176.59 µS/cm	0.01 mg/L	1.19 NTU	62.2 mV	8.39 ft	0.08 PSU	4,000.0 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/13/2020 11:56:35 AM

Project: CCR Well Redevelopment

Operator Name: Veronica Fay

Location Name: MCM-04 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.6 ft Total Depth: 28.6 ft Initial Depth to Water: 10.59 ft	Pump Type: Proactive Cyclone Tubing Type: LDPE 3/8 Pump Intake From TOC: 23.6 ft Estimated Total Volume Pumped: 36 liter Flow Cell Volume: 90 ml Final Flow Rate: 3000 ml/min Final Draw Down: 3.31 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Prepurged 125.56 L at 8.5 L/min

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 5	
8/13/2020 11:56 AM	00:00	4.93 pH	21.32 °C	436.43 µS/cm	0.14 mg/L	8.20 NTU	90.8 mV	13.90 ft	3,000.0 ml/min
8/13/2020 11:59 AM	03:00	4.95 pH	21.32 °C	428.17 µS/cm	0.10 mg/L	5.69 NTU	89.1 mV	13.90 ft	3,000.0 ml/min
8/13/2020 12:02 PM	06:00	4.94 pH	21.29 °C	433.92 µS/cm	0.11 mg/L	3.74 NTU	88.8 mV	13.90 ft	3,000.0 ml/min
8/13/2020 12:05 PM	09:00	4.94 pH	21.30 °C	431.21 µS/cm	0.10 mg/L	2.06 NTU	88.1 mV	13.90 ft	3,000.0 ml/min
8/13/2020 12:08 PM	12:00	4.95 pH	21.33 °C	430.30 µS/cm	0.09 mg/L	1.51 NTU	87.6 mV	13.90 ft	3,000.0 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/13/2020 2:27:20 PM

Project: CCR Well Redevelopment

Operator Name: Veronica Fay

Location Name: MCM-05 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.1 ft Total Depth: 28.1 ft Initial Depth to Water: 9.08 ft	Pump Type: Proactive Cyclone Tubing Type: LDPE 3/8 Pump Intake From TOC: 23.1 ft Estimated Total Volume Pumped: 199.5 liter Flow Cell Volume: 90 ml Final Flow Rate: 9500 ml/min Final Draw Down: 2.42 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Prepurged 293.9 L at 9.5 L/ min

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 5	
8/13/2020 2:27 PM	00:00	6.51 pH	28.54 °C	3,739.7 µS/cm	1.42 mg/L	6.07 NTU	35.7 mV	11.50 ft	9,500.0 ml/min
8/13/2020 2:30 PM	03:00	6.53 pH	22.91 °C	3,977.2 µS/cm	0.03 mg/L	6.07 NTU	2.1 mV	11.50 ft	9,500.0 ml/min
8/13/2020 2:33 PM	06:00	6.54 pH	22.61 °C	4,127.0 µS/cm	0.02 mg/L	2.20 NTU	-20.1 mV	11.57 ft	9,500.0 ml/min
8/13/2020 2:36 PM	09:00	6.54 pH	22.58 °C	4,320.6 µS/cm	0.02 mg/L	1.06 NTU	-35.8 mV	11.57 ft	9,500.0 ml/min
8/13/2020 2:39 PM	12:00	6.54 pH	22.56 °C	4,349.0 µS/cm	0.02 mg/L	1.22 NTU	-46.5 mV	11.57 ft	9,500.0 ml/min
8/13/2020 2:42 PM	15:00	6.54 pH	22.55 °C	4,287.8 µS/cm	0.02 mg/L	0.86 NTU	-53.4 mV	11.50 ft	9,500.0 ml/min
8/13/2020 2:45 PM	18:00	6.54 pH	22.56 °C	4,394.0 µS/cm	0.02 mg/L	0.68 NTU	-59.2 mV	11.50 ft	9,500.0 ml/min
8/13/2020 2:48 PM	21:00	6.54 pH	22.58 °C	4,365.8 µS/cm	0.01 mg/L	0.64 NTU	-62.4 mV	11.50 ft	9,500.0 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/14/2020 10:54:30 AM
Project: Plant McManus Well Development
Operator Name: Kevin Stephenson

Location Name: MCM-06 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 17.23 ft Total Depth: 27.23 ft Initial Depth to Water: 9.51 ft	Pump Type: Proactive 12V Tubing Type: LDPE Pump Intake From TOC: 26.23 ft Estimated Total Volume Pumped: 120000 ml Flow Cell Volume: 90 ml Final Flow Rate: 7500 ml/min Final Draw Down: 4 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728648
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Test Notes:
Pre-purged 135 liter.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 1000 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000	
8/14/2020 10:54 AM	00:00	6.88 pH	23.96 °C	23,844 µS/cm	0.09 mg/L	7.52 NTU	-203.2 mV	13.43 ft	14.66 PSU	7,500.0 ml/min
8/14/2020 10:58 AM	04:00	6.87 pH	22.38 °C	24,973 µS/cm	0.07 mg/L	3.96 NTU	-297.0 mV	13.49 ft	15.40 PSU	7,500.0 ml/min
8/14/2020 11:02 AM	08:00	6.87 pH	22.34 °C	25,052 µS/cm	0.07 mg/L	3.75 NTU	-304.8 mV	13.51 ft	15.45 PSU	7,500.0 ml/min
8/14/2020 11:06 AM	12:00	6.87 pH	22.33 °C	25,071 µS/cm	0.06 mg/L	3.32 NTU	-308.6 mV	13.50 ft	15.47 PSU	7,500.0 ml/min
8/14/2020 11:10 AM	16:00	6.87 pH	22.34 °C	25,213 µS/cm	0.06 mg/L	2.61 NTU	-310.6 mV	13.51 ft	15.56 PSU	7,500.0 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/14/2020 9:24:29 AM
Project: Plant McManus Well Development
Operator Name: Kevin Stephenson

Location Name: MCM-07 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 13.8 ft Total Depth: 23.8 ft Initial Depth to Water: 8.48 ft	Pump Type: Proactive 12V Tubing Type: LDPE Pump Intake From TOC: 22.8 ft Estimated Total Volume Pumped: 48000 ml Flow Cell Volume: 90 ml Final Flow Rate: 3000 ml/min Final Draw Down: 13.73 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728648
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Test Notes:
Pre-purged 108 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 1000 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000	
8/14/2020 9:24 AM	00:00	6.31 pH	24.07 °C	25,429 µS/cm	1.88 mg/L	12.40 NTU	-102.6 mV	22.38 ft	15.73 PSU	3,000.0 ml/min
8/14/2020 9:28 AM	04:00	6.31 pH	24.27 °C	25,312 µS/cm	1.52 mg/L	10.08 NTU	-102.3 mV	22.08 ft	15.65 PSU	3,000.0 ml/min
8/14/2020 9:32 AM	08:00	6.31 pH	24.19 °C	25,883 µS/cm	1.83 mg/L	8.97 NTU	-101.8 mV	22.14 ft	16.03 PSU	3,000.0 ml/min
8/14/2020 9:36 AM	12:00	6.31 pH	24.26 °C	26,042 µS/cm	1.56 mg/L	8.25 NTU	-103.5 mV	22.38 ft	16.14 PSU	3,000.0 ml/min
8/14/2020 9:40 AM	16:00	6.31 pH	24.27 °C	26,092 µS/cm	1.78 mg/L	6.23 NTU	-102.1 mV	22.21 ft	16.18 PSU	3,000.0 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/12/2020 12:06:19 PM

Project: CCR Well Redevelopment

Operator Name: Veronica Fay

Location Name: MCM-11 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 14 ft Total Depth: 24 ft Initial Depth to Water: 5.35 ft	Pump Type: Proactive Cyclone Tubing Type: 3/8 LDPE Pump Intake From TOC: 19 ft Flow Cell Volume: - 0 ml Final Flow Rate: 2100 ml/min Final Draw Down: 5.3 ft Estimated Total Volume Pumped: 145.2 L	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Prepurged 139.5 L at 5L/min. Well would go dry, had to adjust pump rate several times.

Had to adjust/ decrease flow rate several times to try and get parameters to stabilize.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 5	
8/12/2020 12:06 PM	00:00	5.11 pH	27.34 °C	387.07 µS/cm	1.96 mg/L	9.14 NTU	67.3 mV	17.85 ft	2100.00 ml/min
8/12/2020 12:10 PM	03:51	5.14 pH	25.39 °C	248.13 µS/cm	7.66 mg/L		73.8 mV	17.85 ft	2100.00 ml/min
8/12/2020 12:11 PM	04:46	5.28 pH	25.78 °C	220.21 µS/cm	8.16 mg/L	1.17 NTU	73.5 mV	17.78 ft	2100.00 ml/min
8/12/2020 12:15 PM	08:46	5.15 pH	24.96 °C	433.57 µS/cm	1.72 mg/L	2.31 NTU	56.1 mV	17.65 ft	2100.00 ml/min
8/12/2020 12:19 PM	12:46	5.17 pH	25.00 °C	448.15 µS/cm	1.58 mg/L	1.10 NTU	56.6 mV	17.65 ft	2100.00 ml/min
8/12/2020 12:23 PM	16:46	5.18 pH	25.00 °C	429.27 µS/cm	1.51 mg/L	0.58 NTU	57.4 mV	17.00 ft	2100.00 ml/min
8/12/2020 12:27 PM	20:46	5.18 pH	25.03 °C	435.85 µS/cm	1.41 mg/L	0.58 NTU	58.1 mV	16.90 ft	2100.00 ml/min
8/12/2020 12:31 PM	24:46	5.18 pH	25.08 °C	434.86 µS/cm	1.32 mg/L	0.23 NTU	59.1 mV	16.90 ft	2100.00 ml/min
8/12/2020 12:35 PM	28:46	5.20 pH	25.06 °C	437.92 µS/cm	1.17 mg/L	0.30 NTU	60.0 mV	16.90 ft	2100.00 ml/min
8/12/2020 12:39 PM	32:46	5.22 pH	25.01 °C	448.65 µS/cm	1.50 mg/L	0.23 NTU	58.6 mV	16.80 ft	2100.00 ml/min
8/12/2020 12:43 PM	36:46	5.18 pH	25.04 °C	431.91 µS/cm	1.10 mg/L	0.14 NTU	58.6 mV	16.80 ft	2100.00 ml/min
8/12/2020 12:47 PM	40:46	5.20 pH	25.07 °C	428.32 µS/cm	1.04 mg/L	0.10 NTU	60.8 mV	16.75 ft	2100.00 ml/min
8/12/2020 12:51 PM	44:46	5.22 pH	25.06 °C	436.30 µS/cm	0.97 mg/L	0.18 NTU	62.3 mV	16.75 ft	2100.00 ml/min
8/12/2020 12:55 PM	48:46	5.20 pH	25.13 °C	434.21 µS/cm	0.97 mg/L	0.50 NTU	62.5 mV	16.00 ft	2100.00 ml/min
8/12/2020 12:59 PM	52:46	5.18 pH	25.24 °C	430.10 µS/cm	1.07 mg/L	0.43 NTU	65.7 mV	15.68 ft	2100.00 ml/min
8/12/2020 1:03 PM	56:46	5.17 pH	25.26 °C	401.12 µS/cm	1.08 mg/L	0.38 NTU	68.5 mV	15.68 ft	2100.00 ml/min

8/12/2020 1:07 PM	01:00:46	5.19 pH	25.24 °C	413.05 µS/cm	0.94 mg/L	0.17 NTU	70.9 mV	15.72 ft	2100.00 ml/min
8/12/2020 1:08 PM	01:02:00	5.20 pH	25.22 °C	421.65 µS/cm	0.89 mg/L	0.17 NTU	76.6 mV	15.72 ft	2100.00 ml/min
8/12/2020 1:11 PM	01:05:00	5.20 pH	25.24 °C	412.52 µS/cm	0.84 mg/L	0.11 NTU	72.1 mV	15.50 ft	2100.00 ml/min
8/12/2020 1:14 PM	01:08:00	5.27 pH	25.43 °C	510.13 µS/cm	0.56 mg/L	0.18 NTU	71.7 mV	13.30 ft	2100.00 ml/min
8/12/2020 1:17 PM	01:11:00	5.27 pH	25.46 °C	474.86 µS/cm	0.54 mg/L	0.26 NTU	69.4 mV	13.30 ft	2100.00 ml/min
8/12/2020 1:20 PM	01:14:00	5.17 pH	25.51 °C	396.18 µS/cm	0.86 mg/L	0.37 NTU	72.8 mV	11.30 ft	2100.00 ml/min
8/12/2020 1:23 PM	01:17:00	5.17 pH	26.10 °C	415.24 µS/cm	0.63 mg/L	0.37 NTU	74.1 mV	11.30 ft	2100.00 ml/min
8/12/2020 1:26 PM	01:20:00	5.26 pH	26.24 °C	520.98 µS/cm	0.42 mg/L	0.45 NTU	73.7 mV	11.27 ft	2100.00 ml/min
8/12/2020 1:29 PM	01:23:00	5.20 pH	25.92 °C	402.65 µS/cm	0.54 mg/L	0.56 NTU	73.0 mV	11.00 ft	2100.00 ml/min
8/12/2020 1:32 PM	01:26:00	5.16 pH	26.06 °C	385.75 µS/cm	0.59 mg/L	0.43 NTU	76.4 mV	10.85 ft	2100.00 ml/min
8/12/2020 1:35 PM	01:29:00	5.16 pH	26.00 °C	381.31 µS/cm	0.50 mg/L	0.54 NTU	79.2 mV	10.85 ft	2100.00 ml/min
8/12/2020 1:38 PM	01:32:00	5.16 pH	25.96 °C	387.00 µS/cm	0.40 mg/L	0.63 NTU	81.2 mV	10.87 ft	2100.00 ml/min
8/12/2020 1:41 PM	01:35:00	5.17 pH	26.01 °C	395.38 µS/cm	0.38 mg/L	0.51 NTU	82.7 mV	10.87 ft	2100.00 ml/min
8/12/2020 1:44 PM	01:38:00	5.17 pH	26.06 °C	386.43 µS/cm	0.36 mg/L	0.58 NTU	83.3 mV	10.65 ft	2100.00 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/12/2020 11:24:16 AM
Project: Plant McManus Well Development
Operator Name: Kevin Stephenson

Location Name: MCM-12 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 19.02 ft Total Depth: 29.02 ft Initial Depth to Water: 9.55 ft	Pump Type: Proactive 12V Tubing Type: LDPE Pump Intake From TOC: 28.02 ft Estimated Total Volume Pumped: 32000 ml Flow Cell Volume: 90 ml Final Flow Rate: 2000 ml/min Final Draw Down: 18.27 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728648
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Test Notes:
Pre-purged 105 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000	+/- 5 %	+/- 1000 %	+/- 5	+/- 1000	+/- 0.3	+/- 1000	
8/12/2020 11:24 AM	00:00	6.32 pH	23.19 °C	2,794.4 µS/cm	3.72 mg/L	9.40 NTU	33.4 mV	27.51 ft	1.47 PSU	2.00 ml/min
8/12/2020 11:28 AM	04:00	6.32 pH	23.37 °C	2,797.4 µS/cm	3.47 mg/L	9.86 NTU	23.5 mV	27.60 ft	1.47 PSU	2.00 ml/min
8/12/2020 11:32 AM	08:00	6.32 pH	23.25 °C	2,794.8 µS/cm	3.39 mg/L	9.51 NTU	20.0 mV	27.82 ft	1.47 PSU	2.00 ml/min
8/12/2020 11:36 AM	12:00	6.32 pH	23.28 °C	2,795.7 µS/cm	3.30 mg/L	9.67 NTU	18.8 mV	27.82 ft	1.47 PSU	2.00 ml/min
8/12/2020 11:40 AM	16:00	6.32 pH	23.32 °C	2,799.8 µS/cm	3.40 mg/L	7.80 NTU	18.3 mV	27.82 ft	1.47 PSU	2.00 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/12/2020 3:26:44 PM

Project: CCR Well Redevelopment

Operator Name: Veronica Fay

Location Name: MCM-14 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.1 ft Total Depth: 28.1 ft Initial Depth to Water: 9.65 ft	Pump Type: Proactive Cyclone Tubing Type: 3/8 LDPE Pump Intake From TOC: 23.1 ft Estimated Total Volume Pumped: 14.4 liter Flow Cell Volume: 90 ml Final Flow Rate: 1200 ml/min Final Draw Down: 0.1 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Weather Conditions:

Prepurged 351.69 L

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 5	
8/12/2020 3:26 PM	00:00	6.57 pH	24.01 °C	20,981 µS/cm	0.04 mg/L	2.33 NTU	-149.3 mV	9.85 ft	1200.00 ml/min
8/12/2020 3:29 PM	03:00	6.50 pH	23.79 °C	21,054 µS/cm	0.04 mg/L	2.34 NTU	-156.0 mV	9.78 ft	1200.00 ml/min
8/12/2020 3:32 PM	06:00	6.51 pH	23.66 °C	21,194 µS/cm	0.03 mg/L	2.46 NTU	-161.9 mV	9.76 ft	1200.00 ml/min
8/12/2020 3:35 PM	09:00	6.51 pH	23.64 °C	21,191 µS/cm	0.03 mg/L	3.64 NTU	-168.0 mV	9.88 ft	1200.00 ml/min
8/12/2020 3:38 PM	12:00	6.52 pH	23.27 °C	21,208 µS/cm	0.03 mg/L	3.64 NTU	-166.9 mV	9.75 ft	1200.00 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/13/2020 9:55:56 AM

Project: CCR Well Redevelopment

Operator Name: Veronica Fay

Location Name: MCM-15 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 16.6 ft Total Depth: 26.6 ft Initial Depth to Water: 10.03 ft	Pump Type: Proactive Cyclone Tubing Type: LDPE 3/8 Pump Intake From TOC: 21.6 ft Estimated Total Volume Pumped: 47 liter Flow Cell Volume: 90 ml Final Flow Rate: 2750 ml/min Final Draw Down: 1.37 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728563
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Test Notes:

Prepurged 188.8 L at 9 L/min

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 10 %	+/- 5	+/- 1000 %	+/- 5	
8/13/2020 9:55 AM	00:00	8.30 pH	34.36 °C	5.79 µS/cm	7.02 mg/L	13.10 NTU	299.8 mV	11.49 ft	2,750.0 ml/min
8/13/2020 9:58 AM	02:15	8.32 pH	35.28 °C	5.54 µS/cm	6.93 mg/L	12.30 NTU	303.8 mV	11.51 ft	2,750.0 ml/min
8/13/2020 10:01 AM	05:15	5.24 pH	24.87 °C	122.44 µS/cm	0.06 mg/L	12.00 NTU	91.3 mV	11.45 ft	2,750.0 ml/min
8/13/2020 10:04 AM	08:15	5.20 pH	22.79 °C	125.33 µS/cm	0.03 mg/L	11.80 NTU	78.1 mV	11.43 ft	2,750.0 ml/min
8/13/2020 10:07 AM	11:15	5.21 pH	22.85 °C	122.80 µS/cm	0.03 mg/L	9.50 NTU	74.2 mV	11.41 ft	2,750.0 ml/min
8/13/2020 10:10 AM	14:15	5.22 pH	22.85 °C	124.20 µS/cm	0.02 mg/L	9.70 NTU	72.5 mV	11.40 ft	2,750.0 ml/min
8/13/2020 10:13 AM	17:15	5.22 pH	22.88 °C	125.87 µS/cm	0.02 mg/L	8.26 NTU	71.5 mV	11.40 ft	2,750.0 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/13/2020 11:38:50 AM
Project: Plant McManus Well Development
Operator Name: Kevin Stephenson

Location Name: MCM-16 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 18.21 ft Total Depth: 28.21 ft Initial Depth to Water: 10.13 ft	Pump Type: Proactive 12V Tubing Type: LDPE Pump Intake From TOC: 27.21 ft Estimated Total Volume Pumped: 64000 ml Flow Cell Volume: 90 ml Final Flow Rate: 4000 ml/min Final Draw Down: 1.62 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728648
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Test Notes:
Pre-purged 150 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 1000 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000	
8/13/2020 11:38 AM	00:00	4.88 pH	21.92 °C	160.77 µS/cm	0.04 mg/L	3.67 NTU	97.7 mV	11.65 ft	0.08 PSU	4,000.0 ml/min
8/13/2020 11:42 AM	04:00	4.88 pH	21.70 °C	161.09 µS/cm	0.02 mg/L	2.08 NTU	86.6 mV	11.70 ft	0.08 PSU	4,000.0 ml/min
8/13/2020 11:46 AM	08:00	4.89 pH	21.67 °C	161.33 µS/cm	0.02 mg/L	1.72 NTU	82.0 mV	11.74 ft	0.08 PSU	4,000.0 ml/min
8/13/2020 11:50 AM	12:00	4.89 pH	21.67 °C	161.44 µS/cm	0.01 mg/L	1.45 NTU	78.4 mV	11.75 ft	0.08 PSU	4,000.0 ml/min
8/13/2020 11:54 AM	16:00	4.91 pH	21.66 °C	161.84 µS/cm	0.01 mg/L	1.78 NTU	76.0 mV	11.75 ft	0.08 PSU	4,000.0 ml/min

Samples

Sample ID:	Description:
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Low-Flow Test Report:

Test Date / Time: 8/12/2020 2:11:59 PM
Project: Plant McManus Well Development
Operator Name: Kevin Stephenson

Location Name: MCM-17 Well Diameter: 2 in Screen Length: 10 ft Top of Screen: 10.13 ft Total Depth: 27.44 ft Initial Depth to Water: 10.13 ft	Pump Type: Proactive 12V Tubing Type: LDPE Pump Intake From TOC: 26.44 ft Estimated Total Volume Pumped: 128000 ml Flow Cell Volume: 90 ml Final Flow Rate: 4000 ml/min Final Draw Down: 1.21 ft	Instrument Used: Aqua TROLL 400 Serial Number: 728648
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Test Notes:
 Pre-purged 152 liters.

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Salinity	Flow
		+/- 0.1	+/- 1000 %	+/- 5 %	+/- 1000 %	+/- 5	+/- 1000 %	+/- 0.3	+/- 1000	
8/12/2020 2:11 PM	00:00	6.83 pH	23.37 °C	16,351 µS/cm	0.04 mg/L	20.10 NTU	-27.3 mV	11.42 ft	9.71 PSU	4.00 ml/min
8/12/2020 2:15 PM	04:00	6.82 pH	21.96 °C	16,919 µS/cm	0.02 mg/L	18.50 NTU	-54.4 mV	11.42 ft	10.07 PSU	4.00 ml/min
8/12/2020 2:19 PM	08:00	6.82 pH	21.90 °C	17,051 µS/cm	0.01 mg/L	17.40 NTU	-58.9 mV	11.42 ft	10.16 PSU	4.00 ml/min
8/12/2020 2:23 PM	12:00	6.82 pH	21.89 °C	17,186 µS/cm	0.01 mg/L	15.60 NTU	-61.7 mV	11.41 ft	10.24 PSU	4.00 ml/min
8/12/2020 2:27 PM	16:00	6.82 pH	21.89 °C	17,061 µS/cm	0.01 mg/L	12.10 NTU	-66.3 mV	11.38 ft	10.16 PSU	4.00 ml/min
8/12/2020 2:31 PM	20:00	6.82 pH	21.89 °C	17,258 µS/cm	0.00 mg/L	11.50 NTU	-68.5 mV	11.36 ft	10.29 PSU	4.00 ml/min
8/12/2020 2:35 PM	24:00	6.82 pH	21.89 °C	17,255 µS/cm	0.00 mg/L	11.30 NTU	-71.1 mV	11.35 ft	10.29 PSU	4.00 ml/min
8/12/2020 2:39 PM	28:00	6.82 pH	21.89 °C	17,262 µS/cm	0.00 mg/L	10.61 NTU	-73.3 mV	11.34 ft	10.29 PSU	4.00 ml/min
8/12/2020 2:43 PM	32:00	6.82 pH	21.89 °C	17,341 µS/cm	0.00 mg/L	9.59 NTU	-76.1 mV	11.34 ft	10.35 PSU	4.00 ml/min

Samples

Sample ID:	Description:
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APPENDIX C

Surface Water Sampling Laboratory Results October – November 2020

November 17, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 30, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92503105001	T1-1HT	Water	10/28/20 09:55	10/30/20 10:30
92503105002	T1-1LT	Water	10/27/20 16:38	10/30/20 10:30
92503105003	T1-2HT	Water	10/28/20 10:07	10/30/20 10:30
92503105004	T1-2HTS	Water	10/28/20 10:00	10/30/20 10:30
92503105005	T1-2LT	Water	10/27/20 16:30	10/30/20 10:30
92503105006	T1-3HT	Water	10/28/20 10:28	10/30/20 10:30
92503105007	T1-3HTS	Water	10/28/20 10:20	10/30/20 10:30
92503105008	T1-3LT	Water	10/27/20 14:14	10/30/20 10:30
92503105009	T1-4HT	Water	10/28/20 12:06	10/30/20 10:30
92503105010	T1-4HTS	Water	10/28/20 11:52	10/30/20 10:30
92503105011	T1-4HLT	Water	10/27/20 10:50	10/30/20 10:30
92503105012	T2-1HT	Water	10/28/20 09:29	10/30/20 10:30
92503105013	T2-2HT	Water	10/28/20 09:41	10/30/20 10:30
92503105014	T2-2HTS	Water	10/28/20 09:33	10/30/20 10:30
92503105015	T2-2LT	Water	10/27/20 15:38	10/30/20 10:30
92503105016	T2-3HT	Water	10/28/20 10:53	10/30/20 10:30
92503105017	T2-3HTS	Water	10/28/20 10:46	10/30/20 10:30
92503105018	T2-3LT	Water	10/27/20 15:08	10/30/20 10:30
92503105019	T2-4HT	Water	10/28/20 11:38	10/30/20 10:30
92503105020	T2-4HTS	Water	10/28/20 11:30	10/30/20 10:30
92503105021	T2-4LT	Water	10/27/20 11:32	10/30/20 10:30
92503105022	T3-1HT	Water	10/28/20 08:40	10/30/20 10:30
92503105023	T3-2HT	Water	10/28/20 08:54	10/30/20 10:30
92503105024	T3-2HTS	Water	10/28/20 08:45	10/30/20 10:30
92503105025	T3-2LT	Water	10/27/20 16:16	10/30/20 10:30
92503105026	T3-3HT	Water	10/28/20 09:13	10/30/20 10:30
92503105027	T3-3HTS	Water	10/28/20 11:11	10/30/20 10:30
92503105028	T3-3LT	Water	10/27/20 15:58	10/30/20 10:30
92503105029	T3-4HT	Water	10/28/20 11:19	10/30/20 10:30
92503105030	T3-4HTS	Water	10/28/20 11:11	10/30/20 10:30
92503105031	T3-4LT	Water	10/27/20 11:46	10/30/20 10:30
92503105032	T4-1HS	Water	10/29/20 09:14	10/30/20 10:30
92503105033	T4-1HB	Water	10/29/20 09:22	10/30/20 10:30
92503105034	T4-1L	Water	10/28/20 16:16	10/30/20 10:30
92503105035	T4-2HS	Water	10/29/20 09:36	10/30/20 10:30
92503105036	T4-2HB	Water	10/29/20 09:50	10/30/20 10:30
92503105037	T4-2L	Water	10/28/20 15:41	10/30/20 10:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92503105038	T4-3HS	Water	10/29/20 09:59	10/30/20 10:30
92503105039	T4-3HB	Water	10/29/20 10:06	10/30/20 10:30
92503105040	T4-3L	Water	10/28/20 15:26	10/30/20 10:30
92503105041	T4-4HS	Water	10/29/20 10:25	10/30/20 10:30
92503105042	T4-4HB	Water	10/29/20 10:33	10/30/20 10:30
92503105043	T4-4L	Water	10/28/20 15:03	10/30/20 10:30
92503105044	BG-1LT	Water	10/28/20 12:33	10/30/20 10:30
92503105045	BG-2HT	Water	10/27/20 17:20	10/30/20 10:30
92503105046	DUP-1	Water	10/27/20 00:00	10/30/20 10:30
92503105047	DUP-2	Water	10/28/20 00:00	10/30/20 10:30
92503105048	DUP-3	Water	10/28/20 00:00	10/30/20 10:30
92503105049	DUP-4	Water	10/28/20 00:00	10/30/20 10:30
92503105050	DUP-5	Water	10/29/20 00:00	10/30/20 10:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92503105001	T1-1HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105002	T1-1LT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105003	T1-2HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105004	T1-2HTS	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105005	T1-2LT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105006	T1-3HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105007	T1-3HTS	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105008	T1-3LT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92503105009	T1-4HT	SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
92503105010	T1-4HTS	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
92503105011	T1-4HLT	EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105012	T2-1HT	SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105013	T2-2HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
92503105014	T2-2HTS	SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
92503105015	T2-2LT	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A

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SAMPLE ANALYTE COUNT

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92503105016	T2-3HT	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
92503105017	T2-3HTS	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
92503105018	T2-3LT	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
92503105019	T2-4HT	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
92503105020	T2-4HTS	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
92503105021	T2-4LT	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
92503105022	T3-1HT	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105023	T3-2HT	EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A

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SAMPLE ANALYTE COUNT

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92503105024	T3-2HTS	EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105025	T3-2LT	EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105026	T3-3HT	EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105027	T3-3HTS	EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105028	T3-3LT	EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105029	T3-4HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105030	T3-4HTS	EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105031	T3-4LT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105032	T4-1HS	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105033	T4-1HB	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105034	T4-1L	EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A

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SAMPLE ANALYTE COUNT

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92503105035	T4-2HS	SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105036	T4-2HB	SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105037	T4-2L	SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105038	T4-3HS	SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105039	T4-3HB	SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105040	T4-3L	SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105041	T4-4HS	SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A

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SAMPLE ANALYTE COUNT

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92503105042	T4-4HB	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105043	T4-4L	EPA 6010D	DS, SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92503105044	BG-1LT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105045	BG-2HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105046	DUP-1	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105047	DUP-2	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105048	DUP-3	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105049	DUP-4	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92503105050	DUP-5	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105001	T1-1HT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.43	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	202	mg/L	2.0	11/03/20 21:47	
EPA 6010D	Magnesium	647	mg/L	2.0	11/03/20 21:47	
EPA 6010D	Potassium	189	mg/L	100	11/03/20 21:47	
EPA 6010D	Sodium	3070	mg/L	500	11/04/20 12:10	
EPA 6020B	Arsenic	0.0022J	mg/L	0.0050	11/04/20 19:04	
EPA 6020B	Boron	2.4	mg/L	1.2	11/04/20 17:29	
EPA 6020B	Lithium	0.089	mg/L	0.030	11/04/20 19:04	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	103	mg/L	5.0	11/05/20 16:41	
SM 2320B-2011	Alkalinity, Total as CaCO3	103	mg/L	5.0	11/05/20 16:41	
SM 2540C-2011	Total Dissolved Solids	21900	mg/L	2500	10/31/20 14:43	
EPA 300.0 Rev 2.1 1993	Chloride	10300	mg/L	200	11/01/20 23:37	M6, R1
EPA 300.0 Rev 2.1 1993	Sulfate	1460	mg/L	200	11/01/20 23:37	M6, R1
92503105002	T1-1LT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.48	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	180	mg/L	2.0	11/03/20 21:50	
EPA 6010D	Magnesium	562	mg/L	2.0	11/03/20 21:50	
EPA 6010D	Potassium	169	mg/L	100	11/03/20 21:50	
EPA 6010D	Sodium	2940	mg/L	500	11/04/20 12:14	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/04/20 19:08	
EPA 6020B	Boron	2.2	mg/L	1.2	11/04/20 17:33	
EPA 6020B	Lithium	0.075	mg/L	0.030	11/04/20 19:08	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	99.2	mg/L	5.0	11/05/20 16:49	
SM 2320B-2011	Alkalinity, Total as CaCO3	99.2	mg/L	5.0	11/05/20 16:49	
SM 2540C-2011	Total Dissolved Solids	18900	mg/L	2500	10/31/20 14:42	
EPA 300.0 Rev 2.1 1993	Chloride	9880	mg/L	200	11/02/20 01:14	
EPA 300.0 Rev 2.1 1993	Sulfate	1360	mg/L	200	11/02/20 01:14	
92503105003	T1-2HT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.30	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	197	mg/L	2.0	11/03/20 21:54	
EPA 6010D	Magnesium	636	mg/L	2.0	11/03/20 21:54	
EPA 6010D	Potassium	187	mg/L	100	11/03/20 21:54	
EPA 6010D	Sodium	3500	mg/L	500	11/04/20 12:17	
EPA 6020B	Arsenic	0.0023J	mg/L	0.0050	11/04/20 19:12	
EPA 6020B	Boron	2.5	mg/L	1.2	11/04/20 17:37	
EPA 6020B	Lithium	0.090	mg/L	0.030	11/04/20 19:12	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	110	mg/L	5.0	11/05/20 16:57	
SM 2320B-2011	Alkalinity, Total as CaCO3	110	mg/L	5.0	11/05/20 16:57	
SM 2540C-2011	Total Dissolved Solids	21800	mg/L	2500	10/31/20 14:43	
EPA 300.0 Rev 2.1 1993	Chloride	11700	mg/L	200	11/02/20 01:28	
EPA 300.0 Rev 2.1 1993	Sulfate	1620	mg/L	200	11/02/20 01:28	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105004	T1-2HTS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.37	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	210	mg/L	2.0	11/03/20 21:58	
EPA 6010D	Magnesium	668	mg/L	2.0	11/03/20 21:58	
EPA 6010D	Potassium	199	mg/L	100	11/03/20 21:58	
EPA 6010D	Sodium	3990	mg/L	500	11/04/20 12:21	
EPA 6020B	Arsenic	0.0023J	mg/L	0.0050	11/04/20 19:16	
EPA 6020B	Boron	2.5	mg/L	1.2	11/04/20 17:41	
EPA 6020B	Lithium	0.089	mg/L	0.030	11/04/20 19:16	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	111	mg/L	5.0	11/05/20 17:05	
SM 2320B-2011	Alkalinity, Total as CaCO3	111	mg/L	5.0	11/05/20 17:05	
SM 2540C-2011	Total Dissolved Solids	20800	mg/L	2500	10/31/20 14:43	
EPA 300.0 Rev 2.1 1993	Chloride	17100	mg/L	200	11/02/20 01:43	
EPA 300.0 Rev 2.1 1993	Sulfate	2480	mg/L	200	11/02/20 01:43	
92503105005	T1-2LT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.51	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	182	mg/L	2.0	11/03/20 22:01	
EPA 6010D	Magnesium	560	mg/L	2.0	11/03/20 22:01	
EPA 6010D	Potassium	175	mg/L	100	11/03/20 22:01	
EPA 6010D	Sodium	3870	mg/L	500	11/04/20 12:24	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/04/20 19:19	
EPA 6020B	Boron	2.3	mg/L	1.2	11/04/20 17:45	
EPA 6020B	Lithium	0.083	mg/L	0.030	11/04/20 19:19	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	102	mg/L	5.0	11/05/20 17:13	
SM 2320B-2011	Alkalinity, Total as CaCO3	102	mg/L	5.0	11/05/20 17:13	
SM 2540C-2011	Total Dissolved Solids	18700	mg/L	2500	10/31/20 14:42	
EPA 300.0 Rev 2.1 1993	Chloride	14500	mg/L	200	11/02/20 02:57	
EPA 300.0 Rev 2.1 1993	Sulfate	2060	mg/L	200	11/02/20 02:57	
92503105006	T1-3HT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.26	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	221	mg/L	2.0	11/03/20 22:05	
EPA 6010D	Magnesium	683	mg/L	2.0	11/03/20 22:05	
EPA 6010D	Potassium	214	mg/L	100	11/03/20 22:05	
EPA 6010D	Sodium	4000	mg/L	500	11/04/20 12:28	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/04/20 19:31	
EPA 6020B	Boron	2.5	mg/L	1.2	11/04/20 18:00	
EPA 6020B	Lithium	0.091	mg/L	0.030	11/04/20 19:31	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	109	mg/L	5.0	11/05/20 17:20	
SM 2320B-2011	Alkalinity, Total as CaCO3	109	mg/L	5.0	11/05/20 17:20	
SM 2540C-2011	Total Dissolved Solids	21400	mg/L	2500	11/02/20 18:03	
EPA 300.0 Rev 2.1 1993	Chloride	17300	mg/L	200	11/02/20 03:12	
EPA 300.0 Rev 2.1 1993	Sulfate	1410	mg/L	100	11/01/20 05:57	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105007	T1-3HTS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.34	Std. Units		11/17/20 08:45	
EPA 6020B	Arsenic	0.0023J	mg/L	0.0050	11/04/20 18:41	
EPA 6020B	Boron	2.5	mg/L	1.2	11/05/20 11:44	
EPA 6020B	Lithium	0.096	mg/L	0.030	11/04/20 18:41	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	107	mg/L	5.0	11/05/20 17:28	
SM 2320B-2011	Alkalinity, Total as CaCO3	107	mg/L	5.0	11/05/20 17:28	
SM 2540C-2011	Total Dissolved Solids	20600	mg/L	2500	11/02/20 18:04	
EPA 300.0 Rev 2.1 1993	Chloride	15400	mg/L	200	11/02/20 03:27	
EPA 300.0 Rev 2.1 1993	Sulfate	2220	mg/L	200	11/02/20 03:27	
92503105008	T1-3LT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.92	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	66.4	mg/L	2.0	11/03/20 22:12	
EPA 6010D	Magnesium	139	mg/L	2.0	11/03/20 22:12	
EPA 6010D	Sodium	1200	mg/L	100	11/03/20 22:12	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/04/20 18:45	
EPA 6020B	Boron	0.78	mg/L	0.50	11/04/20 18:45	
EPA 6020B	Lithium	0.027J	mg/L	0.030	11/04/20 18:45	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	48.6	mg/L	5.0	11/05/20 17:36	
SM 2320B-2011	Alkalinity, Total as CaCO3	48.6	mg/L	5.0	11/05/20 17:36	
SM 2540C-2011	Total Dissolved Solids	7400	mg/L	2500	10/31/20 14:42	
EPA 300.0 Rev 2.1 1993	Chloride	2190	mg/L	100	11/01/20 06:26	
EPA 300.0 Rev 2.1 1993	Fluoride	0.32	mg/L	0.10	10/31/20 19:01	
EPA 300.0 Rev 2.1 1993	Sulfate	359	mg/L	100	11/01/20 06:26	
92503105009	T1-4HT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.39	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	202	mg/L	2.0	11/03/20 22:23	
EPA 6010D	Magnesium	658	mg/L	2.0	11/03/20 22:23	
EPA 6010D	Potassium	187	mg/L	100	11/03/20 22:23	
EPA 6010D	Sodium	4340	mg/L	500	11/04/20 12:32	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/04/20 19:35	
EPA 6020B	Boron	2.6	mg/L	1.2	11/04/20 18:04	
EPA 6020B	Lithium	0.090	mg/L	0.030	11/04/20 19:35	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	104	mg/L	5.0	11/05/20 17:44	
SM 2320B-2011	Alkalinity, Total as CaCO3	104	mg/L	5.0	11/05/20 17:44	
SM 2540C-2011	Total Dissolved Solids	19100	mg/L	2500	11/02/20 18:04	
EPA 300.0 Rev 2.1 1993	Chloride	14700	mg/L	200	11/02/20 03:56	
EPA 300.0 Rev 2.1 1993	Sulfate	2120	mg/L	200	11/02/20 03:56	
92503105010	T1-4HTS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.36	Std. Units		11/17/20 08:45	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105010	T1-4HTS					
EPA 6010D	Calcium	202	mg/L	2.0	11/03/20 22:27	
EPA 6010D	Magnesium	665	mg/L	2.0	11/03/20 22:27	
EPA 6010D	Potassium	186	mg/L	100	11/03/20 22:27	
EPA 6010D	Sodium	3540	mg/L	500	11/04/20 12:35	
EPA 6020B	Arsenic	0.0025J	mg/L	0.0050	11/04/20 19:38	
EPA 6020B	Boron	2.6	mg/L	1.2	11/04/20 18:07	
EPA 6020B	Lithium	0.085	mg/L	0.030	11/04/20 19:38	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	105	mg/L	5.0	11/05/20 18:01	
SM 2320B-2011	Alkalinity, Total as CaCO3	105	mg/L	5.0	11/05/20 18:01	
SM 2540C-2011	Total Dissolved Solids	19800	mg/L	2500	11/02/20 18:04	
EPA 300.0 Rev 2.1 1993	Chloride	11200	mg/L	200	11/02/20 04:11	
EPA 300.0 Rev 2.1 1993	Sulfate	1540	mg/L	200	11/02/20 04:11	
92503105011	T1-4HLT					
	Performed by	CUSTOMER			11/17/20 08:45	
	pH	7.34	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	203	mg/L	2.0	11/03/20 22:31	
EPA 6010D	Magnesium	671	mg/L	2.0	11/03/20 22:31	
EPA 6010D	Potassium	188	mg/L	100	11/03/20 22:31	
EPA 6010D	Sodium	4650	mg/L	500	11/04/20 12:39	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/04/20 19:50	
EPA 6020B	Boron	2.5	mg/L	1.2	11/04/20 18:11	
EPA 6020B	Lithium	0.090	mg/L	0.030	11/04/20 19:50	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	104	mg/L	5.0	11/05/20 18:27	
SM 2320B-2011	Alkalinity, Total as CaCO3	104	mg/L	5.0	11/05/20 18:27	
SM 2540C-2011	Total Dissolved Solids	22300	mg/L	2500	10/31/20 14:42	
EPA 300.0 Rev 2.1 1993	Chloride	12600	mg/L	200	11/02/20 04:25	M6, R1
EPA 300.0 Rev 2.1 1993	Sulfate	1800	mg/L	200	11/02/20 04:25	M6, R1
92503105012	T2-1HT					
	Performed by	CUSTOMER			11/17/20 08:45	
	pH	7.44	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	192	mg/L	2.0	11/03/20 22:34	
EPA 6010D	Magnesium	651	mg/L	2.0	11/03/20 22:34	
EPA 6010D	Potassium	179	mg/L	100	11/03/20 22:34	
EPA 6010D	Sodium	4450	mg/L	500	11/04/20 12:43	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/04/20 19:53	
EPA 6020B	Boron	2.6	mg/L	1.2	11/04/20 18:15	
EPA 6020B	Lithium	0.091	mg/L	0.030	11/04/20 19:53	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	106	mg/L	5.0	11/05/20 18:38	
SM 2320B-2011	Alkalinity, Total as CaCO3	106	mg/L	5.0	11/05/20 18:38	
SM 2540C-2011	Total Dissolved Solids	19800	mg/L	2500	11/02/20 18:04	
EPA 300.0 Rev 2.1 1993	Chloride	12800	mg/L	200	11/02/20 06:09	
EPA 300.0 Rev 2.1 1993	Sulfate	1820	mg/L	200	11/02/20 06:09	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105013	T2-2HT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.30	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	207	mg/L	2.0	11/03/20 22:38	
EPA 6010D	Magnesium	690	mg/L	2.0	11/03/20 22:38	
EPA 6010D	Potassium	193	mg/L	100	11/03/20 22:38	
EPA 6010D	Sodium	3940	mg/L	500	11/04/20 12:53	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/04/20 19:57	
EPA 6020B	Boron	2.5	mg/L	1.2	11/04/20 18:30	
EPA 6020B	Lithium	0.093	mg/L	0.030	11/04/20 19:57	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	108	mg/L	5.0	11/05/20 18:48	
SM 2320B-2011	Alkalinity, Total as CaCO3	108	mg/L	5.0	11/05/20 18:48	
SM 2540C-2011	Total Dissolved Solids	20800	mg/L	2500	11/02/20 18:04	
EPA 300.0 Rev 2.1 1993	Chloride	11600	mg/L	200	11/02/20 06:23	
EPA 300.0 Rev 2.1 1993	Sulfate	1590	mg/L	200	11/02/20 06:23	
92503105014	T2-2HTS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.38	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	192	mg/L	2.0	11/03/20 22:42	
EPA 6010D	Magnesium	639	mg/L	2.0	11/03/20 22:42	
EPA 6010D	Potassium	179	mg/L	100	11/03/20 22:42	
EPA 6010D	Sodium	3590	mg/L	500	11/04/20 12:57	
EPA 6020B	Arsenic	0.0025J	mg/L	0.0050	11/04/20 20:01	
EPA 6020B	Boron	2.6	mg/L	1.2	11/04/20 18:34	
EPA 6020B	Lithium	0.091	mg/L	0.030	11/04/20 20:01	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	105	mg/L	5.0	11/05/20 18:59	
SM 2320B-2011	Alkalinity, Total as CaCO3	105	mg/L	5.0	11/05/20 18:59	
SM 2540C-2011	Total Dissolved Solids	19400	mg/L	2500	11/02/20 18:04	
EPA 300.0 Rev 2.1 1993	Chloride	11300	mg/L	200	11/02/20 06:38	
EPA 300.0 Rev 2.1 1993	Sulfate	1540	mg/L	200	11/02/20 06:38	
92503105015	T2-2LT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.47	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	191	mg/L	2.0	11/03/20 22:45	
EPA 6010D	Magnesium	622	mg/L	2.0	11/03/20 22:45	
EPA 6010D	Potassium	177	mg/L	100	11/03/20 22:45	
EPA 6010D	Sodium	3910	mg/L	500	11/04/20 13:01	
EPA 6020B	Arsenic	0.0033J	mg/L	0.0050	11/04/20 20:05	
EPA 6020B	Boron	2.5	mg/L	1.2	11/04/20 18:38	
EPA 6020B	Lithium	0.087	mg/L	0.030	11/04/20 20:05	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	111	mg/L	5.0	11/05/20 19:10	
SM 2320B-2011	Alkalinity, Total as CaCO3	111	mg/L	5.0	11/05/20 19:10	
SM 2540C-2011	Total Dissolved Solids	20200	mg/L	2500	10/31/20 14:42	
EPA 300.0 Rev 2.1 1993	Chloride	11000	mg/L	200	11/02/20 06:53	
EPA 300.0 Rev 2.1 1993	Sulfate	1560	mg/L	200	11/02/20 06:53	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105016	T2-3HT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.26	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	206	mg/L	2.0	11/03/20 22:49	
EPA 6010D	Magnesium	669	mg/L	2.0	11/03/20 22:49	
EPA 6010D	Potassium	193	mg/L	100	11/03/20 22:49	
EPA 6010D	Sodium	3910	mg/L	500	11/04/20 13:04	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/05/20 16:05	
EPA 6020B	Boron	2.4	mg/L	1.2	11/05/20 12:18	M6
EPA 6020B	Lithium	0.093	mg/L	0.030	11/05/20 16:05	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	106	mg/L	5.0	11/05/20 19:20	
SM 2320B-2011	Alkalinity, Total as CaCO3	106	mg/L	5.0	11/05/20 19:20	
SM 2540C-2011	Total Dissolved Solids	19700	mg/L	2500	11/02/20 18:04	
EPA 300.0 Rev 2.1 1993	Chloride	11000	mg/L	200	11/02/20 07:07	
EPA 300.0 Rev 2.1 1993	Sulfate	1520	mg/L	200	11/02/20 07:07	
92503105017	T2-3HTS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.37	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	199	mg/L	2.0	11/03/20 22:53	
EPA 6010D	Magnesium	660	mg/L	2.0	11/03/20 22:53	
EPA 6010D	Potassium	187	mg/L	100	11/03/20 22:53	
EPA 6010D	Sodium	4070	mg/L	500	11/04/20 13:08	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/05/20 16:31	
EPA 6020B	Boron	2.5	mg/L	1.2	11/05/20 12:33	
EPA 6020B	Lithium	0.092	mg/L	0.030	11/05/20 16:31	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	104	mg/L	5.0	11/05/20 19:31	
SM 2320B-2011	Alkalinity, Total as CaCO3	104	mg/L	5.0	11/05/20 19:31	
SM 2540C-2011	Total Dissolved Solids	19800	mg/L	2500	11/02/20 18:04	
EPA 300.0 Rev 2.1 1993	Chloride	12700	mg/L	200	11/02/20 07:22	
EPA 300.0 Rev 2.1 1993	Sulfate	1870	mg/L	200	11/02/20 07:22	
92503105018	T2-3LT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.31	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	153	mg/L	2.0	11/03/20 22:56	
EPA 6010D	Magnesium	535	mg/L	2.0	11/03/20 22:56	
EPA 6010D	Potassium	143	mg/L	100	11/03/20 22:56	
EPA 6010D	Sodium	3120	mg/L	500	11/04/20 13:11	
EPA 6020B	Arsenic	0.0029J	mg/L	0.0050	11/05/20 16:35	
EPA 6020B	Boron	2.2	mg/L	1.2	11/05/20 12:37	
EPA 6020B	Lithium	0.084	mg/L	0.030	11/05/20 16:35	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	104	mg/L	5.0	11/05/20 19:51	
SM 2320B-2011	Alkalinity, Total as CaCO3	104	mg/L	5.0	11/05/20 19:51	
SM 2540C-2011	Total Dissolved Solids	19300	mg/L	2500	10/31/20 14:42	
EPA 300.0 Rev 2.1 1993	Chloride	9330	mg/L	200	11/02/20 21:26	
EPA 300.0 Rev 2.1 1993	Sulfate	1260	mg/L	200	11/02/20 21:26	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105019	T2-4HT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.33	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	205	mg/L	2.0	11/04/20 03:58	
EPA 6010D	Magnesium	654	mg/L	2.0	11/04/20 03:58	
EPA 6010D	Potassium	202	mg/L	100	11/04/20 03:58	
EPA 6010D	Sodium	4200	mg/L	500	11/05/20 00:57	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/05/20 16:39	
EPA 6020B	Boron	2.4	mg/L	1.2	11/05/20 12:40	
EPA 6020B	Lithium	0.092	mg/L	0.030	11/05/20 16:39	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	105	mg/L	5.0	11/05/20 20:02	
SM 2320B-2011	Alkalinity, Total as CaCO3	105	mg/L	5.0	11/05/20 20:02	
SM 2540C-2011	Total Dissolved Solids	20600	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	9790	mg/L	200	11/02/20 21:40	
EPA 300.0 Rev 2.1 1993	Sulfate	1330	mg/L	200	11/02/20 21:40	
92503105020	T2-4HTS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.35	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	198	mg/L	2.0	11/04/20 04:01	
EPA 6010D	Magnesium	635	mg/L	2.0	11/04/20 04:01	
EPA 6010D	Potassium	195	mg/L	100	11/04/20 04:01	
EPA 6010D	Sodium	5200	mg/L	500	11/05/20 01:01	
EPA 6020B	Arsenic	0.0025J	mg/L	0.0050	11/05/20 17:05	
EPA 6020B	Boron	2.6	mg/L	1.2	11/05/20 12:44	
EPA 6020B	Lithium	0.093	mg/L	0.030	11/05/20 17:05	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	106	mg/L	5.0	11/05/20 20:22	
SM 2320B-2011	Alkalinity, Total as CaCO3	106	mg/L	5.0	11/05/20 20:22	
SM 2540C-2011	Total Dissolved Solids	19900	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	13800	mg/L	200	11/02/20 21:55	
EPA 300.0 Rev 2.1 1993	Sulfate	2150	mg/L	200	11/02/20 21:55	
92503105021	T2-4LT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.33	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	196	mg/L	2.0	11/04/20 04:05	
EPA 6010D	Magnesium	618	mg/L	2.0	11/04/20 04:05	
EPA 6010D	Potassium	193	mg/L	100	11/04/20 04:05	
EPA 6010D	Sodium	5270	mg/L	500	11/05/20 01:04	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/05/20 17:09	
EPA 6020B	Boron	2.5	mg/L	1.2	11/05/20 12:48	
EPA 6020B	Lithium	0.089	mg/L	0.030	11/05/20 17:09	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	105	mg/L	5.0	11/05/20 20:50	
SM 2320B-2011	Alkalinity, Total as CaCO3	105	mg/L	5.0	11/05/20 20:50	
SM 2540C-2011	Total Dissolved Solids	19600	mg/L	2500	10/31/20 14:42	
EPA 300.0 Rev 2.1 1993	Chloride	10300	mg/L	200	11/02/20 22:10	M6
EPA 300.0 Rev 2.1 1993	Sulfate	1430	mg/L	200	11/02/20 22:10	M6

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105022	T3-1HT					
	Performed by	CUSTOMER			11/17/20 08:45	
	pH	7.24	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	187	mg/L	2.0	11/04/20 22:41	M6, R1
EPA 6010D	Magnesium	605	mg/L	2.0	11/04/20 22:41	M6
EPA 6010D	Potassium	182	mg/L	100	11/04/20 22:41	M6, R1
EPA 6010D	Sodium	5770	mg/L	500	11/05/20 18:00	M6
EPA 6020B	Arsenic	0.0021J	mg/L	0.0050	11/09/20 16:57	
EPA 6020B	Boron	2.4	mg/L	1.2	11/10/20 11:00	
EPA 6020B	Lithium	0.095	mg/L	0.030	11/09/20 16:57	
SM 2320B-2011	Alkalinity, Bicarbonate (CaCO3)	106	mg/L	5.0	11/05/20 21:00	
SM 2320B-2011	Alkalinity, Total as CaCO3	106	mg/L	5.0	11/05/20 21:00	
92503105023	T3-2HT					
	Performed by	CUSTOMER			11/17/20 08:45	
	pH	7.25	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	228	mg/L	2.0	11/04/20 23:10	
EPA 6010D	Magnesium	704	mg/L	2.0	11/04/20 23:10	
EPA 6010D	Potassium	219	mg/L	100	11/04/20 23:10	
EPA 6010D	Sodium	5790	mg/L	500	11/05/20 18:22	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/09/20 17:01	
EPA 6020B	Boron	2.5	mg/L	1.2	11/10/20 11:04	M6
EPA 6020B	Lithium	0.10	mg/L	0.030	11/09/20 17:01	
SM 2320B-2011	Alkalinity, Bicarbonate (CaCO3)	106	mg/L	5.0	11/05/20 21:11	
SM 2320B-2011	Alkalinity, Total as CaCO3	106	mg/L	5.0	11/05/20 21:11	
92503105024	T3-2HTS					
	Performed by	CUSTOMER			11/17/20 08:45	
	pH	7.17	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	199	mg/L	2.0	11/04/20 23:14	
EPA 6010D	Magnesium	620	mg/L	2.0	11/04/20 23:14	
EPA 6010D	Potassium	191	mg/L	100	11/04/20 23:14	
EPA 6010D	Sodium	5880	mg/L	500	11/05/20 18:26	
EPA 6020B	Arsenic	0.0023J	mg/L	0.0050	11/09/20 17:42	
EPA 6020B	Boron	2.6	mg/L	1.2	11/10/20 11:23	
EPA 6020B	Lithium	0.099	mg/L	0.030	11/09/20 17:42	
SM 2320B-2011	Alkalinity, Bicarbonate (CaCO3)	106	mg/L	5.0	11/05/20 21:30	
SM 2320B-2011	Alkalinity, Total as CaCO3	106	mg/L	5.0	11/05/20 21:30	
92503105025	T3-2LT					
	Performed by	CUSTOMER			11/17/20 08:45	
	pH	7.50	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	190	mg/L	2.0	11/04/20 23:18	
EPA 6010D	Magnesium	588	mg/L	2.0	11/04/20 23:18	
EPA 6010D	Potassium	181	mg/L	100	11/04/20 23:18	
EPA 6010D	Sodium	4660	mg/L	500	11/05/20 18:29	
EPA 6020B	Arsenic	0.0029J	mg/L	0.0050	11/09/20 17:46	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105025	T3-2LT					
EPA 6020B	Boron	2.6	mg/L	1.2	11/10/20 11:27	
EPA 6020B	Lithium	0.095	mg/L	0.030	11/09/20 17:46	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	108	mg/L	5.0	11/05/20 21:41	
SM 2320B-2011	Alkalinity, Total as CaCO3	108	mg/L	5.0	11/05/20 21:41	
92503105026	T3-3HT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.29	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	206	mg/L	2.0	11/04/20 23:22	
EPA 6010D	Magnesium	647	mg/L	2.0	11/04/20 23:22	
EPA 6010D	Potassium	199	mg/L	100	11/04/20 23:22	
EPA 6010D	Sodium	3980	mg/L	500	11/05/20 18:33	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/09/20 17:54	
EPA 6020B	Boron	2.7	mg/L	1.2	11/10/20 11:31	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/09/20 17:54	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	106	mg/L	5.0	11/05/20 21:51	
SM 2320B-2011	Alkalinity, Total as CaCO3	106	mg/L	5.0	11/05/20 21:51	
92503105027	T3-3HTS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.40	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	188	mg/L	2.0	11/04/20 23:25	
EPA 6010D	Magnesium	586	mg/L	2.0	11/04/20 23:25	
EPA 6010D	Potassium	180	mg/L	100	11/04/20 23:25	
EPA 6010D	Sodium	5610	mg/L	500	11/05/20 18:37	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/09/20 17:58	
EPA 6020B	Boron	2.6	mg/L	1.2	11/10/20 11:35	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/09/20 17:58	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	107	mg/L	5.0	11/05/20 22:01	
SM 2320B-2011	Alkalinity, Total as CaCO3	107	mg/L	5.0	11/05/20 22:01	
92503105028	T3-3LT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.42	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	167	mg/L	2.0	11/04/20 23:29	
EPA 6010D	Magnesium	542	mg/L	2.0	11/04/20 23:29	
EPA 6010D	Potassium	159	mg/L	100	11/04/20 23:29	
EPA 6010D	Sodium	5680	mg/L	500	11/05/20 18:40	
EPA 6020B	Arsenic	0.0022J	mg/L	0.0050	11/09/20 18:01	
EPA 6020B	Boron	2.4	mg/L	1.2	11/10/20 11:46	
EPA 6020B	Lithium	0.098	mg/L	0.030	11/09/20 18:01	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	105	mg/L	5.0	11/05/20 22:11	
SM 2320B-2011	Alkalinity, Total as CaCO3	105	mg/L	5.0	11/05/20 22:11	
92503105029	T3-4HT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105029	T3-4HT					
	pH	7.30	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	172	mg/L	2.0	11/04/20 23:33	
EPA 6010D	Magnesium	570	mg/L	2.0	11/04/20 23:33	
EPA 6010D	Potassium	165	mg/L	100	11/04/20 23:33	
EPA 6010D	Sodium	5480	mg/L	1000	11/06/20 15:25	
EPA 6020B	Arsenic	0.0025J	mg/L	0.0050	11/09/20 18:32	
EPA 6020B	Boron	2.6	mg/L	1.2	11/10/20 11:50	
EPA 6020B	Lithium	0.093	mg/L	0.030	11/09/20 18:32	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	104	mg/L	5.0	11/05/20 22:21	
SM 2320B-2011	Alkalinity, Total as CaCO3	104	mg/L	5.0	11/05/20 22:21	
92503105030	T3-4HTS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.39	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	171	mg/L	2.0	11/04/20 23:37	
EPA 6010D	Magnesium	544	mg/L	2.0	11/04/20 23:37	
EPA 6010D	Potassium	163	mg/L	100	11/04/20 23:37	
EPA 6010D	Sodium	5840	mg/L	500	11/05/20 18:47	
EPA 6020B	Arsenic	0.0027J	mg/L	0.0050	11/09/20 18:35	
EPA 6020B	Boron	2.6	mg/L	1.2	11/10/20 11:54	
EPA 6020B	Lithium	0.095	mg/L	0.030	11/09/20 18:35	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	103	mg/L	5.0	11/05/20 22:32	
SM 2320B-2011	Alkalinity, Total as CaCO3	103	mg/L	5.0	11/05/20 22:32	
92503105031	T3-4LT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.29	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	149	mg/L	2.0	11/04/20 23:40	
EPA 6010D	Magnesium	497	mg/L	2.0	11/04/20 23:40	
EPA 6010D	Potassium	142	mg/L	100	11/04/20 23:40	
EPA 6010D	Sodium	5090	mg/L	500	11/06/20 12:48	
EPA 6020B	Arsenic	0.0029J	mg/L	0.0050	11/09/20 18:43	
EPA 6020B	Boron	2.6	mg/L	1.2	11/10/20 11:58	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/09/20 18:43	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	107	mg/L	5.0	11/05/20 22:59	
SM 2320B-2011	Alkalinity, Total as CaCO3	107	mg/L	5.0	11/05/20 22:59	
92503105032	T4-1HS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.19	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	213	mg/L	2.0	11/04/20 04:09	
EPA 6010D	Magnesium	675	mg/L	2.0	11/04/20 04:09	
EPA 6010D	Potassium	213	mg/L	100	11/04/20 04:09	
EPA 6010D	Sodium	5760	mg/L	500	11/05/20 01:08	
EPA 6020B	Arsenic	0.0030J	mg/L	0.0050	11/05/20 17:13	
EPA 6020B	Boron	2.8	mg/L	1.2	11/05/20 12:52	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105032	T4-1HS					
EPA 6020B	Lithium	0.11	mg/L	0.030	11/05/20 17:13	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	114	mg/L	5.0	11/05/20 23:19	
SM 2320B-2011	Alkalinity, Total as CaCO3	114	mg/L	5.0	11/05/20 23:19	
SM 2540C-2011	Total Dissolved Solids	20300	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	10700	mg/L	200	11/02/20 22:54	
EPA 300.0 Rev 2.1 1993	Sulfate	1480	mg/L	100	11/01/20 11:50	
92503105033	T4-1HB					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.25	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	218	mg/L	2.0	11/04/20 04:12	
EPA 6010D	Magnesium	686	mg/L	2.0	11/04/20 04:12	
EPA 6010D	Potassium	220	mg/L	100	11/04/20 04:12	
EPA 6010D	Sodium	5970	mg/L	500	11/05/20 01:12	
EPA 6020B	Arsenic	0.0029J	mg/L	0.0050	11/05/20 17:28	
EPA 6020B	Boron	2.6	mg/L	1.2	11/05/20 13:14	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/05/20 17:28	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	114	mg/L	5.0	11/05/20 23:30	
SM 2320B-2011	Alkalinity, Total as CaCO3	114	mg/L	5.0	11/05/20 23:30	
SM 2540C-2011	Total Dissolved Solids	21100	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	14600	mg/L	200	11/02/20 23:08	
EPA 300.0 Rev 2.1 1993	Sulfate	1450	mg/L	100	11/01/20 12:04	
92503105034	T4-1L					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.66	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	199	mg/L	2.0	11/04/20 04:30	
EPA 6010D	Magnesium	667	mg/L	2.0	11/04/20 04:30	
EPA 6010D	Potassium	193	mg/L	100	11/04/20 04:30	
EPA 6010D	Sodium	5870	mg/L	500	11/05/20 13:20	
EPA 6020B	Arsenic	0.0037J	mg/L	0.0050	11/05/20 17:32	
EPA 6020B	Boron	2.6	mg/L	1.2	11/05/20 13:18	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/05/20 17:32	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	110	mg/L	5.0	11/05/20 23:40	
SM 2320B-2011	Alkalinity, Total as CaCO3	110	mg/L	5.0	11/05/20 23:40	
SM 2540C-2011	Total Dissolved Solids	21000	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	11200	mg/L	200	11/02/20 23:23	
EPA 300.0 Rev 2.1 1993	Sulfate	1570	mg/L	200	11/02/20 23:23	
92503105035	T4-2HS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.37	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	190	mg/L	2.0	11/04/20 04:34	
EPA 6010D	Magnesium	667	mg/L	2.0	11/04/20 04:34	
EPA 6010D	Potassium	184	mg/L	100	11/04/20 04:34	
EPA 6010D	Sodium	5140	mg/L	500	11/05/20 13:24	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105035	T4-2HS					
EPA 6020B	Arsenic	0.0029J	mg/L	0.0050	11/05/20 17:35	
EPA 6020B	Boron	2.6	mg/L	1.2	11/05/20 13:22	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/05/20 17:35	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	114	mg/L	5.0	11/05/20 23:50	
SM 2320B-2011	Alkalinity, Total as CaCO3	114	mg/L	5.0	11/05/20 23:50	
SM 2540C-2011	Total Dissolved Solids	20200	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	13300	mg/L	200	11/02/20 23:38	
EPA 300.0 Rev 2.1 1993	Sulfate	1440	mg/L	100	11/01/20 12:34	
92503105036	T4-2HB					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.34	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	174	mg/L	2.0	11/04/20 04:38	
EPA 6010D	Magnesium	623	mg/L	2.0	11/04/20 04:38	
EPA 6010D	Potassium	171	mg/L	100	11/04/20 04:38	
EPA 6010D	Sodium	5820	mg/L	500	11/05/20 13:27	
EPA 6020B	Arsenic	0.0028J	mg/L	0.0050	11/05/20 18:02	
EPA 6020B	Boron	2.6	mg/L	1.2	11/05/20 13:26	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/05/20 18:02	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	113	mg/L	5.0	11/06/20 00:01	
SM 2320B-2011	Alkalinity, Total as CaCO3	113	mg/L	5.0	11/06/20 00:01	
SM 2540C-2011	Total Dissolved Solids	22300	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	17100	mg/L	200	11/03/20 00:37	
EPA 300.0 Rev 2.1 1993	Sulfate	1460	mg/L	100	11/01/20 12:49	
92503105037	T4-2L					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.49	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	196	mg/L	2.0	11/04/20 04:41	
EPA 6010D	Magnesium	662	mg/L	2.0	11/04/20 04:41	
EPA 6010D	Potassium	193	mg/L	100	11/04/20 04:41	
EPA 6010D	Sodium	5680	mg/L	500	11/05/20 13:31	
EPA 6020B	Arsenic	0.0034J	mg/L	0.0050	11/05/20 18:06	
EPA 6020B	Boron	2.5	mg/L	1.2	11/05/20 13:45	
EPA 6020B	Lithium	0.098	mg/L	0.030	11/05/20 18:06	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	114	mg/L	5.0	11/06/20 00:12	
SM 2320B-2011	Alkalinity, Total as CaCO3	114	mg/L	5.0	11/06/20 00:12	
SM 2540C-2011	Total Dissolved Solids	22200	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	13200	mg/L	200	11/03/20 00:52	
EPA 300.0 Rev 2.1 1993	Sulfate	1430	mg/L	100	11/01/20 13:03	
92503105038	T4-3HS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.37	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	170	mg/L	2.0	11/04/20 04:45	
EPA 6010D	Magnesium	579	mg/L	2.0	11/04/20 04:45	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105038	T4-3HS					
EPA 6010D	Potassium	172	mg/L	100	11/04/20 04:45	
EPA 6010D	Sodium	4650	mg/L	500	11/05/20 13:35	
EPA 6020B	Arsenic	0.0028J	mg/L	0.0050	11/05/20 18:09	
EPA 6020B	Boron	2.7	mg/L	1.2	11/05/20 13:48	
EPA 6020B	Lithium	0.11	mg/L	0.030	11/05/20 18:09	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	113	mg/L	5.0	11/06/20 00:22	
SM 2320B-2011	Alkalinity, Total as CaCO3	113	mg/L	5.0	11/06/20 00:22	
SM 2540C-2011	Total Dissolved Solids	22100	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	12700	mg/L	200	11/03/20 01:06	
EPA 300.0 Rev 2.1 1993	Sulfate	1450	mg/L	100	11/01/20 13:18	
92503105039	T4-3HB					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.29	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	199	mg/L	2.0	11/04/20 04:49	
EPA 6010D	Magnesium	650	mg/L	2.0	11/04/20 04:49	
EPA 6010D	Potassium	200	mg/L	100	11/04/20 04:49	
EPA 6010D	Sodium	5370	mg/L	500	11/05/20 13:45	
EPA 6020B	Arsenic	0.0027J	mg/L	0.0050	11/05/20 18:25	
EPA 6020B	Boron	2.6	mg/L	1.2	11/05/20 13:52	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/05/20 18:25	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	114	mg/L	5.0	11/06/20 00:32	
SM 2320B-2011	Alkalinity, Total as CaCO3	114	mg/L	5.0	11/06/20 00:32	
SM 2540C-2011	Total Dissolved Solids	20700	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	13600	mg/L	200	11/03/20 01:21	
EPA 300.0 Rev 2.1 1993	Sulfate	1440	mg/L	100	11/01/20 14:02	
92503105040	T4-3L					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.49	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	206	mg/L	2.0	11/04/20 04:52	
EPA 6010D	Magnesium	668	mg/L	2.0	11/04/20 04:52	
EPA 6010D	Potassium	205	mg/L	100	11/04/20 04:52	
EPA 6010D	Sodium	5020	mg/L	500	11/05/20 13:49	
EPA 6020B	Arsenic	0.0037J	mg/L	0.0050	11/05/20 18:28	
EPA 6020B	Boron	2.7	mg/L	1.2	11/05/20 13:56	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/05/20 18:28	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	114	mg/L	5.0	11/06/20 11:54	
SM 2320B-2011	Alkalinity, Total as CaCO3	114	mg/L	5.0	11/06/20 11:54	
SM 2540C-2011	Total Dissolved Solids	23800	mg/L	2500	11/02/20 18:05	
EPA 300.0 Rev 2.1 1993	Chloride	13600	mg/L	200	11/03/20 01:36	
EPA 300.0 Rev 2.1 1993	Sulfate	1460	mg/L	100	11/01/20 14:17	
92503105041	T4-4HS					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.40	Std. Units		11/17/20 08:45	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105041	T4-4HS					
EPA 6010D	Calcium	207	mg/L	2.0	11/04/20 04:56	
EPA 6010D	Magnesium	670	mg/L	2.0	11/04/20 04:56	
EPA 6010D	Potassium	207	mg/L	100	11/04/20 04:56	
EPA 6010D	Sodium	4770	mg/L	500	11/05/20 13:53	
EPA 6020B	Arsenic	0.0028J	mg/L	0.0050	11/05/20 18:32	
EPA 6020B	Boron	2.7	mg/L	1.2	11/05/20 14:00	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/05/20 18:32	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	111	mg/L	5.0	11/06/20 12:24	
SM 2320B-2011	Alkalinity, Total as CaCO3	111	mg/L	5.0	11/06/20 12:24	
SM 2540C-2011	Total Dissolved Solids	20700	mg/L	2500	11/03/20 17:09	
EPA 300.0 Rev 2.1 1993	Chloride	14900	mg/L	200	11/03/20 01:51	M6
EPA 300.0 Rev 2.1 1993	Sulfate	1470	mg/L	100	11/01/20 14:32	M6
92503105042	T4-4HB					
	Performed by	CUSTOMER			11/17/20 08:45	
	pH	7.33	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	157	mg/L	2.0	11/04/20 23:44	
EPA 6010D	Magnesium	552	mg/L	2.0	11/04/20 23:44	
EPA 6010D	Potassium	150	mg/L	100	11/04/20 23:44	
EPA 6010D	Sodium	5380	mg/L	500	11/06/20 12:52	
EPA 6020B	Arsenic	0.0023J	mg/L	0.0050	11/09/20 18:47	
EPA 6020B	Boron	2.8	mg/L	1.2	11/10/20 12:01	
EPA 6020B	Lithium	0.11	mg/L	0.030	11/09/20 18:47	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	109	mg/L	5.0	11/06/20 12:36	
SM 2320B-2011	Alkalinity, Total as CaCO3	109	mg/L	5.0	11/06/20 12:36	
92503105043	T4-4L					
	Performed by	CUSTOMER			11/17/20 08:45	
	pH	7.53	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	208	mg/L	2.0	11/04/20 05:00	
EPA 6010D	Magnesium	678	mg/L	2.0	11/04/20 05:00	
EPA 6010D	Potassium	208	mg/L	100	11/04/20 05:00	
EPA 6010D	Sodium	5430	mg/L	500	11/05/20 13:56	
EPA 6020B	Arsenic	0.0034J	mg/L	0.0050	11/05/20 18:47	
EPA 6020B	Boron	2.6	mg/L	1.2	11/05/20 14:04	
EPA 6020B	Lithium	0.098	mg/L	0.030	11/05/20 18:47	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	114	mg/L	5.0	11/06/20 12:47	
SM 2320B-2011	Alkalinity, Total as CaCO3	114	mg/L	5.0	11/06/20 12:47	
SM 2540C-2011	Total Dissolved Solids	22300	mg/L	2500	11/03/20 17:09	
EPA 300.0 Rev 2.1 1993	Chloride	11700	mg/L	200	11/03/20 02:35	
EPA 300.0 Rev 2.1 1993	Sulfate	1420	mg/L	100	11/01/20 15:16	
92503105044	BG-1LT					
	Performed by	CUSTOMER			11/17/20 08:45	
	pH	7.33	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	171	mg/L	2.0	11/04/20 23:55	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92503105044	BG-1LT					
EPA 6010D	Magnesium	548	mg/L	2.0	11/04/20 23:55	
EPA 6010D	Potassium	160	mg/L	100	11/04/20 23:55	
EPA 6010D	Sodium	5690	mg/L	500	11/06/20 12:55	
EPA 6020B	Arsenic	0.0021J	mg/L	0.0050	11/09/20 18:51	
EPA 6020B	Boron	2.5	mg/L	1.2	11/10/20 12:16	
EPA 6020B	Lithium	0.095	mg/L	0.030	11/09/20 18:51	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	107	mg/L	5.0	11/06/20 12:59	
SM 2320B-2011	Alkalinity, Total as CaCO3	107	mg/L	5.0	11/06/20 12:59	
92503105045	BG-2HT					
	Performed by	CUSTOME			11/17/20 08:45	
		R				
	pH	7.40	Std. Units		11/17/20 08:45	
EPA 6010D	Calcium	175	mg/L	2.0	11/04/20 23:59	
EPA 6010D	Magnesium	601	mg/L	2.0	11/04/20 23:59	
EPA 6010D	Potassium	168	mg/L	100	11/04/20 23:59	
EPA 6010D	Sodium	6230	mg/L	500	11/06/20 13:06	
EPA 6020B	Arsenic	0.0025J	mg/L	0.0050	11/09/20 19:09	
EPA 6020B	Boron	2.9	mg/L	1.2	11/10/20 12:20	
EPA 6020B	Lithium	0.11	mg/L	0.030	11/09/20 19:09	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	111	mg/L	5.0	11/06/20 13:11	
SM 2320B-2011	Alkalinity, Total as CaCO3	111	mg/L	5.0	11/06/20 13:11	
92503105046	DUP-1					
EPA 6010D	Calcium	138	mg/L	2.0	11/05/20 00:03	
EPA 6010D	Magnesium	453	mg/L	2.0	11/05/20 00:03	
EPA 6010D	Potassium	130	mg/L	100	11/05/20 00:03	
EPA 6010D	Sodium	5040	mg/L	500	11/06/20 13:10	
EPA 6020B	Arsenic	0.0025J	mg/L	0.0050	11/09/20 19:13	
EPA 6020B	Boron	2.4	mg/L	1.2	11/10/20 12:35	
EPA 6020B	Lithium	0.093	mg/L	0.030	11/09/20 19:13	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	105	mg/L	5.0	11/06/20 13:32	
SM 2320B-2011	Alkalinity, Total as CaCO3	105	mg/L	5.0	11/06/20 13:32	
92503105047	DUP-2					
EPA 6010D	Calcium	147	mg/L	2.0	11/05/20 00:06	
EPA 6010D	Magnesium	520	mg/L	2.0	11/05/20 00:06	
EPA 6010D	Potassium	138	mg/L	100	11/05/20 00:06	
EPA 6010D	Sodium	5240	mg/L	500	11/06/20 13:13	
EPA 6020B	Arsenic	0.0023J	mg/L	0.0050	11/09/20 19:17	
EPA 6020B	Boron	2.5	mg/L	1.2	11/10/20 12:39	
EPA 6020B	Lithium	0.097	mg/L	0.030	11/09/20 19:17	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	104	mg/L	5.0	11/06/20 13:44	
SM 2320B-2011	Alkalinity, Total as CaCO3	104	mg/L	5.0	11/06/20 13:44	
92503105048	DUP-3					
EPA 6010D	Calcium	148	mg/L	2.0	11/05/20 00:10	
EPA 6010D	Magnesium	493	mg/L	2.0	11/05/20 00:10	
EPA 6010D	Potassium	140	mg/L	100	11/05/20 00:10	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92503105048	DUP-3					
EPA 6010D	Sodium	5330	mg/L	500	11/06/20 13:17	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/09/20 19:25	
EPA 6020B	Boron	2.6	mg/L	1.2	11/10/20 12:43	
EPA 6020B	Lithium	0.098	mg/L	0.030	11/09/20 19:25	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	105	mg/L	5.0	11/06/20 13:55	
SM 2320B-2011	Alkalinity, Total as CaCO3	105	mg/L	5.0	11/06/20 13:55	
92503105049	DUP-4					
EPA 6010D	Calcium	167	mg/L	2.0	11/05/20 00:14	
EPA 6010D	Magnesium	567	mg/L	2.0	11/05/20 00:14	
EPA 6010D	Potassium	159	mg/L	100	11/05/20 00:14	
EPA 6010D	Sodium	5620	mg/L	500	11/06/20 13:21	
EPA 6020B	Arsenic	0.0031J	mg/L	0.0050	11/09/20 19:28	
EPA 6020B	Boron	2.8	mg/L	1.2	11/10/20 12:47	
EPA 6020B	Lithium	0.11	mg/L	0.030	11/09/20 19:28	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	113	mg/L	5.0	11/06/20 14:06	
SM 2320B-2011	Alkalinity, Total as CaCO3	113	mg/L	5.0	11/06/20 14:06	
92503105050	DUP-5					
EPA 6010D	Calcium	170	mg/L	2.0	11/05/20 00:18	
EPA 6010D	Magnesium	578	mg/L	2.0	11/05/20 00:18	
EPA 6010D	Potassium	162	mg/L	100	11/05/20 00:18	
EPA 6010D	Sodium	5180	mg/L	500	11/06/20 13:24	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/09/20 19:32	
EPA 6020B	Boron	2.9	mg/L	1.2	11/10/20 12:50	
EPA 6020B	Lithium	0.11	mg/L	0.030	11/09/20 19:32	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	113	mg/L	5.0	11/06/20 14:17	
SM 2320B-2011	Alkalinity, Total as CaCO3	113	mg/L	5.0	11/06/20 14:17	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T1-1HT		Lab ID: 92503105001		Collected: 10/28/20 09:55		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.43	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	202	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 21:47	7440-70-2	
Magnesium	647	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 21:47	7439-95-4	
Potassium	189	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 21:47	7440-09-7	
Sodium	3070	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:10	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0022J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:04	7440-38-2	
Boron	2.4	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 17:29	7440-42-8	
Lithium	0.089	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:04	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	103	mg/L	5.0	5.0	1		11/05/20 16:41		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 16:41		
Alkalinity, Total as CaCO ₃	103	mg/L	5.0	5.0	1		11/05/20 16:41		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	21900	mg/L	2500	2500	1		10/31/20 14:43		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	10300	mg/L	200	120	200		11/01/20 23:37	16887-00-6	M6,R1
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 16:17	16984-48-8	M1
Sulfate	1460	mg/L	200	100	200		11/01/20 23:37	14808-79-8	M6,R1

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T1-1LT		Lab ID: 92503105002		Collected: 10/27/20 16:38		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.48	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	180	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 21:50	7440-70-2	
Magnesium	562	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 21:50	7439-95-4	
Potassium	169	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 21:50	7440-09-7	
Sodium	2940	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:14	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:08	7440-38-2	
Boron	2.2	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 17:33	7440-42-8	
Lithium	0.075	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:08	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	99.2	mg/L	5.0	5.0	1		11/05/20 16:49		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 16:49		
Alkalinity, Total as CaCO ₃	99.2	mg/L	5.0	5.0	1		11/05/20 16:49		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	18900	mg/L	2500	2500	1		10/31/20 14:42		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	9880	mg/L	200	120	200		11/02/20 01:14	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 17:01	16984-48-8	
Sulfate	1360	mg/L	200	100	200		11/02/20 01:14	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T1-2HT		Lab ID: 92503105003		Collected: 10/28/20 10:07		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.30	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	197	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 21:54	7440-70-2	
Magnesium	636	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 21:54	7439-95-4	
Potassium	187	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 21:54	7440-09-7	
Sodium	3500	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:17	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0023J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:12	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 17:37	7440-42-8	
Lithium	0.090	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:12	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	110	mg/L	5.0	5.0	1		11/05/20 16:57		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 16:57		
Alkalinity, Total as CaCO ₃	110	mg/L	5.0	5.0	1		11/05/20 16:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	21800	mg/L	2500	2500	1		10/31/20 14:43		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11700	mg/L	200	120	200		11/02/20 01:28	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 17:16	16984-48-8	
Sulfate	1620	mg/L	200	100	200		11/02/20 01:28	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T1-2HTS		Lab ID: 92503105004		Collected: 10/28/20 10:00		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.37	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	210	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 21:58	7440-70-2	
Magnesium	668	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 21:58	7439-95-4	
Potassium	199	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 21:58	7440-09-7	
Sodium	3990	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:21	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0023J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:16	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 17:41	7440-42-8	
Lithium	0.089	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:16	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	111	mg/L	5.0	5.0	1		11/05/20 17:05		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 17:05		
Alkalinity, Total as CaCO ₃	111	mg/L	5.0	5.0	1		11/05/20 17:05		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20800	mg/L	2500	2500	1		10/31/20 14:43		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	17100	mg/L	200	120	200		11/02/20 01:43	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 17:31	16984-48-8	
Sulfate	2480	mg/L	200	100	200		11/02/20 01:43	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T1-2LT **Lab ID: 92503105005** Collected: 10/27/20 16:30 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.51	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	182	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:01	7440-70-2	
Magnesium	560	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:01	7439-95-4	
Potassium	175	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:01	7440-09-7	
Sodium	3870	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:24	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:19	7440-38-2	
Boron	2.3	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 17:45	7440-42-8	
Lithium	0.083	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:19	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	102	mg/L	5.0	5.0	1		11/05/20 17:13		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/05/20 17:13		
Alkalinity, Total as CaCO3	102	mg/L	5.0	5.0	1		11/05/20 17:13		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	18700	mg/L	2500	2500	1		10/31/20 14:42		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	14500	mg/L	200	120	200		11/02/20 02:57	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 18:16	16984-48-8	
Sulfate	2060	mg/L	200	100	200		11/02/20 02:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T1-3HT		Lab ID: 92503105006		Collected: 10/28/20 10:28		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.26	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	221	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:05	7440-70-2	
Magnesium	683	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:05	7439-95-4	
Potassium	214	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:05	7440-09-7	
Sodium	4000	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:28	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:31	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 18:00	7440-42-8	
Lithium	0.091	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:31	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	109	mg/L	5.0	5.0	1		11/05/20 17:20		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 17:20		
Alkalinity, Total as CaCO ₃	109	mg/L	5.0	5.0	1		11/05/20 17:20		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	21400	mg/L	2500	2500	1		11/02/20 18:03		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	17300	mg/L	200	120	200		11/02/20 03:12	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 18:31	16984-48-8	
Sulfate	1410	mg/L	100	50.0	100		11/01/20 05:57	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T1-3HTS		Lab ID: 92503105007		Collected: 10/28/20 10:20		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.34	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	ND	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:09	7440-70-2	
Magnesium	ND	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:09	7439-95-4	
Potassium	ND	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:09	7440-09-7	
Sodium	ND	mg/L	100	12.2	20	11/03/20 01:45	11/03/20 22:09	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0023J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 18:41	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 11:44	7440-42-8	
Lithium	0.096	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 18:41	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	107	mg/L	5.0	5.0	1		11/05/20 17:28		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 17:28		
Alkalinity, Total as CaCO ₃	107	mg/L	5.0	5.0	1		11/05/20 17:28		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20600	mg/L	2500	2500	1		11/02/20 18:04		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	15400	mg/L	200	120	200		11/02/20 03:27	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 18:46	16984-48-8	
Sulfate	2220	mg/L	200	100	200		11/02/20 03:27	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T1-3LT **Lab ID: 92503105008** Collected: 10/27/20 14:14 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.92	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	66.4	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:12	7440-70-2	
Magnesium	139	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:12	7439-95-4	
Potassium	ND	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:12	7440-09-7	
Sodium	1200	mg/L	100	12.2	20	11/03/20 01:45	11/03/20 22:12	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 18:45	7440-38-2	
Boron	0.78	mg/L	0.50	0.12	20	11/03/20 01:04	11/04/20 18:45	7440-42-8	
Lithium	0.027J	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 18:45	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	48.6	mg/L	5.0	5.0	1		11/05/20 17:36		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/05/20 17:36		
Alkalinity, Total as CaCO3	48.6	mg/L	5.0	5.0	1		11/05/20 17:36		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	7400	mg/L	2500	2500	1		10/31/20 14:42		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	2190	mg/L	100	60.0	100		11/01/20 06:26	16887-00-6	
Fluoride	0.32	mg/L	0.10	0.050	1		10/31/20 19:01	16984-48-8	
Sulfate	359	mg/L	100	50.0	100		11/01/20 06:26	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Sample: T1-4HT		Lab ID: 92503105009		Collected: 10/28/20 12:06		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.39	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	202	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:23	7440-70-2	
Magnesium	658	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:23	7439-95-4	
Potassium	187	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:23	7440-09-7	
Sodium	4340	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:32	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:35	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 18:04	7440-42-8	
Lithium	0.090	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:35	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	104	mg/L	5.0	5.0	1		11/05/20 17:44		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 17:44		
Alkalinity, Total as CaCO ₃	104	mg/L	5.0	5.0	1		11/05/20 17:44		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19100	mg/L	2500	2500	1		11/02/20 18:04		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	14700	mg/L	200	120	200		11/02/20 03:56	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 19:16	16984-48-8	
Sulfate	2120	mg/L	200	100	200		11/02/20 03:56	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Sample: T1-4HTS		Lab ID: 92503105010		Collected: 10/28/20 11:52		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.36	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	202	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:27	7440-70-2	
Magnesium	665	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:27	7439-95-4	
Potassium	186	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:27	7440-09-7	
Sodium	3540	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:35	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0025J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:38	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 18:07	7440-42-8	
Lithium	0.085	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:38	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	105	mg/L	5.0	5.0	1		11/05/20 18:01		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 18:01		
Alkalinity, Total as CaCO ₃	105	mg/L	5.0	5.0	1		11/05/20 18:01		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19800	mg/L	2500	2500	1		11/02/20 18:04		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11200	mg/L	200	120	200		11/02/20 04:11	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 19:31	16984-48-8	
Sulfate	1540	mg/L	200	100	200		11/02/20 04:11	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T1-4HLT		Lab ID: 92503105011		Collected: 10/27/20 10:50		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.34	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	203	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:31	7440-70-2	
Magnesium	671	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:31	7439-95-4	
Potassium	188	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:31	7440-09-7	
Sodium	4650	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:39	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:50	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 18:11	7440-42-8	
Lithium	0.090	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:50	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	104	mg/L	5.0	5.0	1		11/05/20 18:27		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 18:27		
Alkalinity, Total as CaCO ₃	104	mg/L	5.0	5.0	1		11/05/20 18:27		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	22300	mg/L	2500	2500	1		10/31/20 14:42		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	12600	mg/L	200	120	200		11/02/20 04:25	16887-00-6	M6,R1
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 19:46	16984-48-8	M1
Sulfate	1800	mg/L	200	100	200		11/02/20 04:25	14808-79-8	M6,R1

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T2-1HT **Lab ID:** 92503105012 **Collected:** 10/28/20 09:29 **Received:** 10/30/20 10:30 **Matrix:** Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.44	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	192	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:34	7440-70-2	
Magnesium	651	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:34	7439-95-4	
Potassium	179	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:34	7440-09-7	
Sodium	4450	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:43	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:53	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 18:15	7440-42-8	
Lithium	0.091	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:53	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	106	mg/L	5.0	5.0	1		11/05/20 18:38		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/05/20 18:38		
Alkalinity, Total as CaCO3	106	mg/L	5.0	5.0	1		11/05/20 18:38		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19800	mg/L	2500	2500	1		11/02/20 18:04		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	12800	mg/L	200	120	200		11/02/20 06:09	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 20:31	16984-48-8	
Sulfate	1820	mg/L	200	100	200		11/02/20 06:09	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T2-2HT **Lab ID: 92503105013** Collected: 10/28/20 09:41 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.30	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	207	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:38	7440-70-2	
Magnesium	690	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:38	7439-95-4	
Potassium	193	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:38	7440-09-7	
Sodium	3940	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:53	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 19:57	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 18:30	7440-42-8	
Lithium	0.093	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 19:57	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	108	mg/L	5.0	5.0	1		11/05/20 18:48		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/05/20 18:48		
Alkalinity, Total as CaCO3	108	mg/L	5.0	5.0	1		11/05/20 18:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20800	mg/L	2500	2500	1		11/02/20 18:04		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11600	mg/L	200	120	200		11/02/20 06:23	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 21:16	16984-48-8	
Sulfate	1590	mg/L	200	100	200		11/02/20 06:23	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T2-2HTS **Lab ID: 92503105014** Collected: 10/28/20 09:33 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.38	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	192	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:42	7440-70-2	
Magnesium	639	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:42	7439-95-4	
Potassium	179	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:42	7440-09-7	
Sodium	3590	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 12:57	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0025J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 20:01	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 18:34	7440-42-8	
Lithium	0.091	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 20:01	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	105	mg/L	5.0	5.0	1		11/05/20 18:59		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/05/20 18:59		
Alkalinity, Total as CaCO3	105	mg/L	5.0	5.0	1		11/05/20 18:59		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19400	mg/L	2500	2500	1		11/02/20 18:04		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11300	mg/L	200	120	200		11/02/20 06:38	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 21:31	16984-48-8	
Sulfate	1540	mg/L	200	100	200		11/02/20 06:38	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T2-2LT		Lab ID: 92503105015		Collected: 10/27/20 15:38		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.47	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	191	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:45	7440-70-2	
Magnesium	622	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:45	7439-95-4	
Potassium	177	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:45	7440-09-7	
Sodium	3910	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 13:01	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0033J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/04/20 20:05	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/03/20 01:04	11/04/20 18:38	7440-42-8	
Lithium	0.087	mg/L	0.030	0.0078	20	11/03/20 01:04	11/04/20 20:05	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	111	mg/L	5.0	5.0	1		11/05/20 19:10		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 19:10		
Alkalinity, Total as CaCO ₃	111	mg/L	5.0	5.0	1		11/05/20 19:10		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20200	mg/L	2500	2500	1		10/31/20 14:42		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11000	mg/L	200	120	200		11/02/20 06:53	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 21:46	16984-48-8	
Sulfate	1560	mg/L	200	100	200		11/02/20 06:53	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T2-3HT		Lab ID: 92503105016		Collected: 10/28/20 10:53		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.26	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	206	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:49	7440-70-2	
Magnesium	669	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:49	7439-95-4	
Potassium	193	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:49	7440-09-7	
Sodium	3910	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 13:04	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 16:05	7440-38-2	
Boron	2.4	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 12:18	7440-42-8	M6
Lithium	0.093	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 16:05	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	106	mg/L	5.0	5.0	1		11/05/20 19:20		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 19:20		
Alkalinity, Total as CaCO ₃	106	mg/L	5.0	5.0	1		11/05/20 19:20		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19700	mg/L	2500	2500	1		11/02/20 18:04		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11000	mg/L	200	120	200		11/02/20 07:07	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 22:01	16984-48-8	
Sulfate	1520	mg/L	200	100	200		11/02/20 07:07	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T2-3HTS **Lab ID: 92503105017** Collected: 10/28/20 10:46 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.37	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	199	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:53	7440-70-2	
Magnesium	660	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:53	7439-95-4	
Potassium	187	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:53	7440-09-7	
Sodium	4070	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 13:08	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 16:31	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 12:33	7440-42-8	
Lithium	0.092	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 16:31	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	104	mg/L	5.0	5.0	1		11/05/20 19:31		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 19:31		
Alkalinity, Total as CaCO ₃	104	mg/L	5.0	5.0	1		11/05/20 19:31		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19800	mg/L	2500	2500	1		11/02/20 18:04		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	12700	mg/L	200	120	200		11/02/20 07:22	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 22:15	16984-48-8	
Sulfate	1870	mg/L	200	100	200		11/02/20 07:22	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T2-3LT		Lab ID: 92503105018		Collected: 10/27/20 15:08		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.31	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	153	mg/L	2.0	1.9	20	11/03/20 01:45	11/03/20 22:56	7440-70-2	
Magnesium	535	mg/L	2.0	1.4	20	11/03/20 01:45	11/03/20 22:56	7439-95-4	
Potassium	143	mg/L	100	60.8	20	11/03/20 01:45	11/03/20 22:56	7440-09-7	
Sodium	3120	mg/L	500	61.1	100	11/03/20 01:45	11/04/20 13:11	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0029J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 16:35	7440-38-2	
Boron	2.2	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 12:37	7440-42-8	
Lithium	0.084	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 16:35	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	104	mg/L	5.0	5.0	1		11/05/20 19:51		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 19:51		
Alkalinity, Total as CaCO ₃	104	mg/L	5.0	5.0	1		11/05/20 19:51		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19300	mg/L	2500	2500	1		10/31/20 14:42		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	9330	mg/L	200	120	200		11/02/20 21:26	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 22:30	16984-48-8	
Sulfate	1260	mg/L	200	100	200		11/02/20 21:26	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T2-4HT **Lab ID: 92503105019** Collected: 10/28/20 11:38 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.33	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	205	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 03:58	7440-70-2	
Magnesium	654	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 03:58	7439-95-4	
Potassium	202	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 03:58	7440-09-7	
Sodium	4200	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 00:57	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 16:39	7440-38-2	
Boron	2.4	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 12:40	7440-42-8	
Lithium	0.092	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 16:39	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	105	mg/L	5.0	5.0	1		11/05/20 20:02		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/05/20 20:02		
Alkalinity, Total as CaCO3	105	mg/L	5.0	5.0	1		11/05/20 20:02		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20600	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	9790	mg/L	200	120	200		11/02/20 21:40	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 22:45	16984-48-8	
Sulfate	1330	mg/L	200	100	200		11/02/20 21:40	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T2-4HTS		Lab ID: 92503105020		Collected: 10/28/20 11:30		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.35	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	198	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:01	7440-70-2	
Magnesium	635	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:01	7439-95-4	
Potassium	195	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:01	7440-09-7	
Sodium	5200	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 01:01	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0025J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 17:05	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 12:44	7440-42-8	
Lithium	0.093	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 17:05	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	106	mg/L	5.0	5.0	1		11/05/20 20:22		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 20:22		
Alkalinity, Total as CaCO ₃	106	mg/L	5.0	5.0	1		11/05/20 20:22		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19900	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	13800	mg/L	200	120	200		11/02/20 21:55	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/31/20 23:00	16984-48-8	
Sulfate	2150	mg/L	200	100	200		11/02/20 21:55	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T2-4LT		Lab ID: 92503105021		Collected: 10/27/20 11:32		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.33	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	196	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:05	7440-70-2	
Magnesium	618	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:05	7439-95-4	
Potassium	193	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:05	7440-09-7	
Sodium	5270	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 01:04	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 17:09	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 12:48	7440-42-8	
Lithium	0.089	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 17:09	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	105	mg/L	5.0	5.0	1		11/05/20 20:50		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 20:50		
Alkalinity, Total as CaCO ₃	105	mg/L	5.0	5.0	1		11/05/20 20:50		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19600	mg/L	2500	2500	1		10/31/20 14:42		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	10300	mg/L	200	120	200		11/02/20 22:10	16887-00-6	M6
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 00:15	16984-48-8	M1
Sulfate	1430	mg/L	200	100	200		11/02/20 22:10	14808-79-8	M6

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T3-1HT **Lab ID:** 92503105022 Collected: 10/28/20 08:40 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.24	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	187	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 22:41	7440-70-2	M6, R1
Magnesium	605	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 22:41	7439-95-4	M6
Potassium	182	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 22:41	7440-09-7	M6, R1
Sodium	5770	mg/L	500	61.1	100	11/04/20 01:51	11/05/20 18:00	7440-23-5	M6
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0021J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 16:57	7440-38-2	
Boron	2.4	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 11:00	7440-42-8	
Lithium	0.095	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 16:57	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	106	mg/L	5.0	5.0	1		11/05/20 21:00		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 21:00		
Alkalinity, Total as CaCO ₃	106	mg/L	5.0	5.0	1		11/05/20 21:00		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T3-2HT		Lab ID: 92503105023		Collected: 10/28/20 08:54		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.25	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	228	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:10	7440-70-2	
Magnesium	704	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:10	7439-95-4	
Potassium	219	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:10	7440-09-7	
Sodium	5790	mg/L	500	61.1	100	11/04/20 01:51	11/05/20 18:22	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 17:01	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 11:04	7440-42-8	M6
Lithium	0.10	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 17:01	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	106	mg/L	5.0	5.0	1		11/05/20 21:11		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/05/20 21:11		
Alkalinity, Total as CaCO3	106	mg/L	5.0	5.0	1		11/05/20 21:11		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T3-2HTS		Lab ID: 92503105024		Collected: 10/28/20 08:45		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.17	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	199	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:14	7440-70-2	
Magnesium	620	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:14	7439-95-4	
Potassium	191	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:14	7440-09-7	
Sodium	5880	mg/L	500	61.1	100	11/04/20 01:51	11/05/20 18:26	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0023J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 17:42	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 11:23	7440-42-8	
Lithium	0.099	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 17:42	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	106	mg/L	5.0	5.0	1		11/05/20 21:30		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 21:30		
Alkalinity, Total as CaCO ₃	106	mg/L	5.0	5.0	1		11/05/20 21:30		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T3-2LT		Lab ID: 92503105025		Collected: 10/27/20 16:16		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.50	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	190	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:18	7440-70-2	
Magnesium	588	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:18	7439-95-4	
Potassium	181	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:18	7440-09-7	
Sodium	4660	mg/L	500	61.1	100	11/04/20 01:51	11/05/20 18:29	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0029J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 17:46	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 11:27	7440-42-8	
Lithium	0.095	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 17:46	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	108	mg/L	5.0	5.0	1		11/05/20 21:41		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 21:41		
Alkalinity, Total as CaCO ₃	108	mg/L	5.0	5.0	1		11/05/20 21:41		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T3-3HT **Lab ID: 92503105026** Collected: 10/28/20 09:13 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.29	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	206	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:22	7440-70-2	
Magnesium	647	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:22	7439-95-4	
Potassium	199	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:22	7440-09-7	
Sodium	3980	mg/L	500	61.1	100	11/04/20 01:51	11/05/20 18:33	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 17:54	7440-38-2	
Boron	2.7	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 11:31	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 17:54	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	106	mg/L	5.0	5.0	1		11/05/20 21:51		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 21:51		
Alkalinity, Total as CaCO ₃	106	mg/L	5.0	5.0	1		11/05/20 21:51		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T3-3HTS		Lab ID: 92503105027		Collected: 10/28/20 11:11		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.40	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	188	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:25	7440-70-2	
Magnesium	586	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:25	7439-95-4	
Potassium	180	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:25	7440-09-7	
Sodium	5610	mg/L	500	61.1	100	11/04/20 01:51	11/05/20 18:37	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 17:58	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 11:35	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 17:58	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	107	mg/L	5.0	5.0	1		11/05/20 22:01		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 22:01		
Alkalinity, Total as CaCO ₃	107	mg/L	5.0	5.0	1		11/05/20 22:01		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T3-3LT **Lab ID: 92503105028** Collected: 10/27/20 15:58 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.42	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	167	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:29	7440-70-2	
Magnesium	542	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:29	7439-95-4	
Potassium	159	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:29	7440-09-7	
Sodium	5680	mg/L	500	61.1	100	11/04/20 01:51	11/05/20 18:40	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0022J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 18:01	7440-38-2	
Boron	2.4	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 11:46	7440-42-8	
Lithium	0.098	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 18:01	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	105	mg/L	5.0	5.0	1		11/05/20 22:11		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 22:11		
Alkalinity, Total as CaCO ₃	105	mg/L	5.0	5.0	1		11/05/20 22:11		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T3-4HT **Lab ID: 92503105029** Collected: 10/28/20 11:19 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.30	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	172	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:33	7440-70-2	
Magnesium	570	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:33	7439-95-4	
Potassium	165	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:33	7440-09-7	
Sodium	5480	mg/L	1000	122	200	11/04/20 01:51	11/06/20 15:25	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0025J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 18:32	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 11:50	7440-42-8	
Lithium	0.093	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 18:32	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	104	mg/L	5.0	5.0	1		11/05/20 22:21		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 22:21		
Alkalinity, Total as CaCO ₃	104	mg/L	5.0	5.0	1		11/05/20 22:21		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T3-4HTS		Lab ID: 92503105030		Collected: 10/28/20 11:11		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.39	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	171	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:37	7440-70-2	
Magnesium	544	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:37	7439-95-4	
Potassium	163	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:37	7440-09-7	
Sodium	5840	mg/L	500	61.1	100	11/04/20 01:51	11/05/20 18:47	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0027J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 18:35	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 11:54	7440-42-8	
Lithium	0.095	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 18:35	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	103	mg/L	5.0	5.0	1		11/05/20 22:32		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 22:32		
Alkalinity, Total as CaCO ₃	103	mg/L	5.0	5.0	1		11/05/20 22:32		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T3-4LT		Lab ID: 92503105031		Collected: 10/27/20 11:46		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.29	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	149	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:40	7440-70-2	
Magnesium	497	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:40	7439-95-4	
Potassium	142	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:40	7440-09-7	
Sodium	5090	mg/L	500	61.1	100	11/04/20 01:51	11/06/20 12:48	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0029J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 18:43	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 11:58	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 18:43	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	107	mg/L	5.0	5.0	1		11/05/20 22:59		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 22:59		
Alkalinity, Total as CaCO ₃	107	mg/L	5.0	5.0	1		11/05/20 22:59		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-1HS **Lab ID: 92503105032** Collected: 10/29/20 09:14 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.19	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	213	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:09	7440-70-2	
Magnesium	675	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:09	7439-95-4	
Potassium	213	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:09	7440-09-7	
Sodium	5760	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 01:08	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0030J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 17:13	7440-38-2	
Boron	2.8	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 12:52	7440-42-8	
Lithium	0.11	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 17:13	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	114	mg/L	5.0	5.0	1		11/05/20 23:19		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/05/20 23:19		
Alkalinity, Total as CaCO3	114	mg/L	5.0	5.0	1		11/05/20 23:19		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20300	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	10700	mg/L	200	120	200		11/02/20 22:54	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 01:00	16984-48-8	
Sulfate	1480	mg/L	100	50.0	100		11/01/20 11:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-1HB **Lab ID: 92503105033** Collected: 10/29/20 09:22 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.25	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	218	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:12	7440-70-2	
Magnesium	686	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:12	7439-95-4	
Potassium	220	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:12	7440-09-7	
Sodium	5970	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 01:12	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0029J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 17:28	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 13:14	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 17:28	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	114	mg/L	5.0	5.0	1		11/05/20 23:30		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 23:30		
Alkalinity, Total as CaCO ₃	114	mg/L	5.0	5.0	1		11/05/20 23:30		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	21100	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	14600	mg/L	200	120	200		11/02/20 23:08	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 01:15	16984-48-8	
Sulfate	1450	mg/L	100	50.0	100		11/01/20 12:04	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-1L		Lab ID: 92503105034		Collected: 10/28/20 16:16		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.66	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	199	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:30	7440-70-2	
Magnesium	667	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:30	7439-95-4	
Potassium	193	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:30	7440-09-7	
Sodium	5870	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 13:20	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0037J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 17:32	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 13:18	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 17:32	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	110	mg/L	5.0	5.0	1		11/05/20 23:40		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/05/20 23:40		
Alkalinity, Total as CaCO ₃	110	mg/L	5.0	5.0	1		11/05/20 23:40		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	21000	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11200	mg/L	200	120	200		11/02/20 23:23	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 01:30	16984-48-8	
Sulfate	1570	mg/L	200	100	200		11/02/20 23:23	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-2HS **Lab ID: 92503105035** Collected: 10/29/20 09:36 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.37	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	190	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:34	7440-70-2	
Magnesium	667	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:34	7439-95-4	
Potassium	184	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:34	7440-09-7	
Sodium	5140	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 13:24	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0029J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 17:35	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 13:22	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 17:35	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	114	mg/L	5.0	5.0	1		11/05/20 23:50		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/05/20 23:50		
Alkalinity, Total as CaCO3	114	mg/L	5.0	5.0	1		11/05/20 23:50		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20200	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	13300	mg/L	200	120	200		11/02/20 23:38	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 01:45	16984-48-8	
Sulfate	1440	mg/L	100	50.0	100		11/01/20 12:34	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-2HB		Lab ID: 92503105036		Collected: 10/29/20 09:50	Received: 10/30/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.34	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	174	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:38	7440-70-2	
Magnesium	623	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:38	7439-95-4	
Potassium	171	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:38	7440-09-7	
Sodium	5820	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 13:27	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0028J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 18:02	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 13:26	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 18:02	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	113	mg/L	5.0	5.0	1		11/06/20 00:01		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 00:01		
Alkalinity, Total as CaCO ₃	113	mg/L	5.0	5.0	1		11/06/20 00:01		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	22300	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	17100	mg/L	200	120	200		11/03/20 00:37	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 01:00	16984-48-8	
Sulfate	1460	mg/L	100	50.0	100		11/01/20 12:49	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-2L		Lab ID: 92503105037		Collected: 10/28/20 15:41	Received: 10/30/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.49	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	196	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:41	7440-70-2	
Magnesium	662	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:41	7439-95-4	
Potassium	193	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:41	7440-09-7	
Sodium	5680	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 13:31	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0034J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 18:06	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 13:45	7440-42-8	
Lithium	0.098	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 18:06	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	114	mg/L	5.0	5.0	1		11/06/20 00:12		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 00:12		
Alkalinity, Total as CaCO ₃	114	mg/L	5.0	5.0	1		11/06/20 00:12		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	22200	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	13200	mg/L	200	120	200		11/03/20 00:52	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 01:15	16984-48-8	
Sulfate	1430	mg/L	100	50.0	100		11/01/20 13:03	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-3HS **Lab ID: 92503105038** Collected: 10/29/20 09:59 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.37	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	170	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:45	7440-70-2	
Magnesium	579	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:45	7439-95-4	
Potassium	172	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:45	7440-09-7	
Sodium	4650	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 13:35	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0028J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 18:09	7440-38-2	
Boron	2.7	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 13:48	7440-42-8	
Lithium	0.11	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 18:09	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	113	mg/L	5.0	5.0	1		11/06/20 00:22		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 00:22		
Alkalinity, Total as CaCO ₃	113	mg/L	5.0	5.0	1		11/06/20 00:22		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	22100	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	12700	mg/L	200	120	200		11/03/20 01:06	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 01:29	16984-48-8	
Sulfate	1450	mg/L	100	50.0	100		11/01/20 13:18	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-3HB		Lab ID: 92503105039		Collected: 10/29/20 10:06		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.29	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	199	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:49	7440-70-2	
Magnesium	650	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:49	7439-95-4	
Potassium	200	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:49	7440-09-7	
Sodium	5370	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 13:45	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0027J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 18:25	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 13:52	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 18:25	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	114	mg/L	5.0	5.0	1		11/06/20 00:32		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 00:32		
Alkalinity, Total as CaCO ₃	114	mg/L	5.0	5.0	1		11/06/20 00:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20700	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	13600	mg/L	200	120	200		11/03/20 01:21	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 02:14	16984-48-8	
Sulfate	1440	mg/L	100	50.0	100		11/01/20 14:02	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Sample: T4-3L		Lab ID: 92503105040		Collected: 10/28/20 15:26		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.49	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	206	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:52	7440-70-2	
Magnesium	668	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:52	7439-95-4	
Potassium	205	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:52	7440-09-7	
Sodium	5020	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 13:49	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0037J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 18:28	7440-38-2	
Boron	2.7	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 13:56	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 18:28	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	114	mg/L	5.0	5.0	1		11/06/20 11:54		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 11:54		
Alkalinity, Total as CaCO ₃	114	mg/L	5.0	5.0	1		11/06/20 11:54		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	23800	mg/L	2500	2500	1		11/02/20 18:05		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	13600	mg/L	200	120	200		11/03/20 01:36	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 02:29	16984-48-8	
Sulfate	1460	mg/L	100	50.0	100		11/01/20 14:17	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-4HS		Lab ID: 92503105041		Collected: 10/29/20 10:25		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.40	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	207	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 04:56	7440-70-2	
Magnesium	670	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 04:56	7439-95-4	
Potassium	207	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 04:56	7440-09-7	
Sodium	4770	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 13:53	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0028J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 18:32	7440-38-2	
Boron	2.7	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 14:00	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 18:32	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	111	mg/L	5.0	5.0	1		11/06/20 12:24		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 12:24		
Alkalinity, Total as CaCO ₃	111	mg/L	5.0	5.0	1		11/06/20 12:24		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20700	mg/L	2500	2500	1		11/03/20 17:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	14900	mg/L	200	120	200		11/03/20 01:51	16887-00-6	M6
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 02:44	16984-48-8	M1
Sulfate	1470	mg/L	100	50.0	100		11/01/20 14:32	14808-79-8	M6

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-4HB **Lab ID: 92503105042** Collected: 10/29/20 10:33 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.33	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	157	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:44	7440-70-2	
Magnesium	552	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:44	7439-95-4	
Potassium	150	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:44	7440-09-7	
Sodium	5380	mg/L	500	61.1	100	11/04/20 01:51	11/06/20 12:52	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0023J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 18:47	7440-38-2	
Boron	2.8	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 12:01	7440-42-8	
Lithium	0.11	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 18:47	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	109	mg/L	5.0	5.0	1		11/06/20 12:36		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 12:36		
Alkalinity, Total as CaCO ₃	109	mg/L	5.0	5.0	1		11/06/20 12:36		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: T4-4L		Lab ID: 92503105043		Collected: 10/28/20 15:03		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.53	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	208	mg/L	2.0	1.9	20	11/03/20 01:45	11/04/20 05:00	7440-70-2	
Magnesium	678	mg/L	2.0	1.4	20	11/03/20 01:45	11/04/20 05:00	7439-95-4	
Potassium	208	mg/L	100	60.8	20	11/03/20 01:45	11/04/20 05:00	7440-09-7	
Sodium	5430	mg/L	500	61.1	100	11/03/20 01:45	11/05/20 13:56	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0034J	mg/L	0.0050	0.0017	20	11/03/20 01:04	11/05/20 18:47	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/03/20 01:04	11/05/20 14:04	7440-42-8	
Lithium	0.098	mg/L	0.030	0.0078	20	11/03/20 01:04	11/05/20 18:47	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	114	mg/L	5.0	5.0	1		11/06/20 12:47		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 12:47		
Alkalinity, Total as CaCO ₃	114	mg/L	5.0	5.0	1		11/06/20 12:47		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	22300	mg/L	2500	2500	1		11/03/20 17:09		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11700	mg/L	200	120	200		11/03/20 02:35	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/01/20 03:29	16984-48-8	
Sulfate	1420	mg/L	100	50.0	100		11/01/20 15:16	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: BG-1LT		Lab ID: 92503105044		Collected: 10/28/20 12:33	Received: 10/30/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.33	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	171	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:55	7440-70-2	
Magnesium	548	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:55	7439-95-4	
Potassium	160	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:55	7440-09-7	
Sodium	5690	mg/L	500	61.1	100	11/04/20 01:51	11/06/20 12:55	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0021J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 18:51	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 12:16	7440-42-8	
Lithium	0.095	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 18:51	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	107	mg/L	5.0	5.0	1		11/06/20 12:59		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 12:59		
Alkalinity, Total as CaCO ₃	107	mg/L	5.0	5.0	1		11/06/20 12:59		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: BG-2HT		Lab ID: 92503105045		Collected: 10/27/20 17:20		Received: 10/30/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/17/20 08:45		
pH	7.40	Std. Units			1		11/17/20 08:45		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	175	mg/L	2.0	1.9	20	11/04/20 01:51	11/04/20 23:59	7440-70-2	
Magnesium	601	mg/L	2.0	1.4	20	11/04/20 01:51	11/04/20 23:59	7439-95-4	
Potassium	168	mg/L	100	60.8	20	11/04/20 01:51	11/04/20 23:59	7440-09-7	
Sodium	6230	mg/L	500	61.1	100	11/04/20 01:51	11/06/20 13:06	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0025J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 19:09	7440-38-2	
Boron	2.9	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 12:20	7440-42-8	
Lithium	0.11	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 19:09	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	111	mg/L	5.0	5.0	1		11/06/20 13:11		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 13:11		
Alkalinity, Total as CaCO ₃	111	mg/L	5.0	5.0	1		11/06/20 13:11		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: DUP-1 **Lab ID: 92503105046** Collected: 10/27/20 00:00 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	138	mg/L	2.0	1.9	20	11/04/20 01:51	11/05/20 00:03	7440-70-2	
Magnesium	453	mg/L	2.0	1.4	20	11/04/20 01:51	11/05/20 00:03	7439-95-4	
Potassium	130	mg/L	100	60.8	20	11/04/20 01:51	11/05/20 00:03	7440-09-7	
Sodium	5040	mg/L	500	61.1	100	11/04/20 01:51	11/06/20 13:10	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0025J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 19:13	7440-38-2	
Boron	2.4	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 12:35	7440-42-8	
Lithium	0.093	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 19:13	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	105	mg/L	5.0	5.0	1		11/06/20 13:32		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 13:32		
Alkalinity, Total as CaCO ₃	105	mg/L	5.0	5.0	1		11/06/20 13:32		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: DUP-2 **Lab ID: 92503105047** Collected: 10/28/20 00:00 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	147	mg/L	2.0	1.9	20	11/04/20 01:51	11/05/20 00:06	7440-70-2	
Magnesium	520	mg/L	2.0	1.4	20	11/04/20 01:51	11/05/20 00:06	7439-95-4	
Potassium	138	mg/L	100	60.8	20	11/04/20 01:51	11/05/20 00:06	7440-09-7	
Sodium	5240	mg/L	500	61.1	100	11/04/20 01:51	11/06/20 13:13	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0023J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 19:17	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 12:39	7440-42-8	
Lithium	0.097	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 19:17	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	104	mg/L	5.0	5.0	1		11/06/20 13:44		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 13:44		
Alkalinity, Total as CaCO ₃	104	mg/L	5.0	5.0	1		11/06/20 13:44		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: DUP-3 **Lab ID: 92503105048** Collected: 10/28/20 00:00 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	148	mg/L	2.0	1.9	20	11/04/20 01:51	11/05/20 00:10	7440-70-2	
Magnesium	493	mg/L	2.0	1.4	20	11/04/20 01:51	11/05/20 00:10	7439-95-4	
Potassium	140	mg/L	100	60.8	20	11/04/20 01:51	11/05/20 00:10	7440-09-7	
Sodium	5330	mg/L	500	61.1	100	11/04/20 01:51	11/06/20 13:17	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 19:25	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 12:43	7440-42-8	
Lithium	0.098	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 19:25	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	105	mg/L	5.0	5.0	1		11/06/20 13:55		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/06/20 13:55		
Alkalinity, Total as CaCO3	105	mg/L	5.0	5.0	1		11/06/20 13:55		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: DUP-4 **Lab ID: 92503105049** Collected: 10/28/20 00:00 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	167	mg/L	2.0	1.9	20	11/04/20 01:51	11/05/20 00:14	7440-70-2	
Magnesium	567	mg/L	2.0	1.4	20	11/04/20 01:51	11/05/20 00:14	7439-95-4	
Potassium	159	mg/L	100	60.8	20	11/04/20 01:51	11/05/20 00:14	7440-09-7	
Sodium	5620	mg/L	500	61.1	100	11/04/20 01:51	11/06/20 13:21	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0031J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 19:28	7440-38-2	
Boron	2.8	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 12:47	7440-42-8	
Lithium	0.11	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 19:28	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	113	mg/L	5.0	5.0	1		11/06/20 14:06		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 14:06		
Alkalinity, Total as CaCO ₃	113	mg/L	5.0	5.0	1		11/06/20 14:06		

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ANALYTICAL RESULTS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

Sample: DUP-5 **Lab ID: 92503105050** Collected: 10/29/20 00:00 Received: 10/30/20 10:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	170	mg/L	2.0	1.9	20	11/04/20 01:51	11/05/20 00:18	7440-70-2	
Magnesium	578	mg/L	2.0	1.4	20	11/04/20 01:51	11/05/20 00:18	7439-95-4	
Potassium	162	mg/L	100	60.8	20	11/04/20 01:51	11/05/20 00:18	7440-09-7	
Sodium	5180	mg/L	500	61.1	100	11/04/20 01:51	11/06/20 13:24	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/04/20 01:23	11/09/20 19:32	7440-38-2	
Boron	2.9	mg/L	1.2	0.31	50	11/04/20 01:23	11/10/20 12:50	7440-42-8	
Lithium	0.11	mg/L	0.030	0.0078	20	11/04/20 01:23	11/09/20 19:32	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	113	mg/L	5.0	5.0	1		11/06/20 14:17		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/06/20 14:17		
Alkalinity, Total as CaCO ₃	113	mg/L	5.0	5.0	1		11/06/20 14:17		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

QC Batch:	577480	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010 MET
		Laboratory:	Pace Analytical Services - Asheville
Associated Lab Samples:	92503105001, 92503105002, 92503105003, 92503105004, 92503105005, 92503105006, 92503105007, 92503105008, 92503105009, 92503105010, 92503105011, 92503105012, 92503105013, 92503105014, 92503105015, 92503105016, 92503105017, 92503105018		

METHOD BLANK:	3055574	Matrix:	Water
Associated Lab Samples:	92503105001, 92503105002, 92503105003, 92503105004, 92503105005, 92503105006, 92503105007, 92503105008, 92503105009, 92503105010, 92503105011, 92503105012, 92503105013, 92503105014, 92503105015, 92503105016, 92503105017, 92503105018		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	11/03/20 20:45	
Magnesium	mg/L	ND	0.10	0.068	11/03/20 20:45	
Potassium	mg/L	ND	5.0	3.0	11/03/20 20:45	
Sodium	mg/L	ND	5.0	0.61	11/03/20 20:45	

LABORATORY CONTROL SAMPLE: 3055575						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	4.9	98	80-120	
Magnesium	mg/L	5	5.0	101	80-120	
Potassium	mg/L	5	5.3	106	80-120	
Sodium	mg/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3055576													3055577	
Parameter	Units	92502221014		MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result							
Calcium	mg/L	15500 ug/L	5	5	20.9	20.5	108	100	75-125	2	20			
Magnesium	mg/L	3480 ug/L	5	5	8.6	8.5	103	101	75-125	1	20			
Potassium	mg/L	ND	5	5	8.1	8.1	104	103	75-125	0	20			
Sodium	mg/L	8150 ug/L	5	5	13.5	13.3	108	102	75-125	2	20			

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

QC Batch:	577481	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92503105019, 92503105020, 92503105021, 92503105032, 92503105033, 92503105034, 92503105035, 92503105036, 92503105037, 92503105038, 92503105039, 92503105040, 92503105041, 92503105043

METHOD BLANK:	3055578	Matrix:	Water
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Associated Lab Samples: 92503105019, 92503105020, 92503105021, 92503105032, 92503105033, 92503105034, 92503105035, 92503105036, 92503105037, 92503105038, 92503105039, 92503105040, 92503105041, 92503105043

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	11/04/20 03:25	
Magnesium	mg/L	ND	0.10	0.068	11/04/20 03:25	
Potassium	mg/L	ND	5.0	3.0	11/04/20 03:25	
Sodium	mg/L	2.0J	5.0	0.61	11/04/20 03:25	

LABORATORY CONTROL SAMPLE: 3055579

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	4.7	95	80-120	
Magnesium	mg/L	5	5.2	104	80-120	
Potassium	mg/L	5	5.7	115	80-120	
Sodium	mg/L	5	5.6	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3055580 3055581

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92502798003 Result	Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	336	5	5	342	336	124	8	75-125	2	20 E,M1
Magnesium	mg/L	60.0	5	5	63.7	63.6	74	72	75-125	0	20 M1
Potassium	mg/L	11.1	5	5	16.5	16.3	107	103	75-125	1	20
Sodium	mg/L	131	5	5	137	137	134	122	75-125	0	20 E,M1

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

QC Batch:	577750	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010 MET
		Laboratory:	Pace Analytical Services - Asheville
Associated Lab Samples:	92503105022, 92503105023, 92503105024, 92503105025, 92503105026, 92503105027, 92503105028, 92503105029, 92503105030, 92503105031, 92503105042, 92503105044, 92503105045, 92503105046, 92503105047, 92503105048, 92503105049, 92503105050		

METHOD BLANK:	3056914	Matrix:	Water
Associated Lab Samples:	92503105022, 92503105023, 92503105024, 92503105025, 92503105026, 92503105027, 92503105028, 92503105029, 92503105030, 92503105031, 92503105042, 92503105044, 92503105045, 92503105046, 92503105047, 92503105048, 92503105049, 92503105050		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	11/04/20 22:34	
Magnesium	mg/L	ND	0.10	0.068	11/04/20 22:34	
Potassium	mg/L	ND	5.0	3.0	11/04/20 22:34	
Sodium	mg/L	ND	5.0	0.61	11/04/20 22:34	

LABORATORY CONTROL SAMPLE: 3056915						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	5.0	100	80-120	
Magnesium	mg/L	5	5.2	104	80-120	
Potassium	mg/L	5	5.1	101	80-120	
Sodium	mg/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3056916												3056917	
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92503105022 Result	Spike Conc.	Spike Conc.	Conc.								
Calcium	mg/L	187	5	5	174	215	-266	554	75-125	21	20	M6, R1	
Magnesium	mg/L	605	5	5	564	642	-816	732	75-125	13	20	M6	
Potassium	mg/L	182	5	5	170	209	-238	541	75-125	21	20	M6, R1	
Sodium	mg/L	5770	5	5	6090	5740	6280	-660	75-125	6	20	M6	

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

QC Batch:	577484	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3010A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92503105001, 92503105002, 92503105003, 92503105004, 92503105005, 92503105006, 92503105007, 92503105008, 92503105009, 92503105010, 92503105011, 92503105012, 92503105013, 92503105014, 92503105015

METHOD BLANK: 3055590 Matrix: Water
Associated Lab Samples: 92503105001, 92503105002, 92503105003, 92503105004, 92503105005, 92503105006, 92503105007, 92503105008, 92503105009, 92503105010, 92503105011, 92503105012, 92503105013, 92503105014, 92503105015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	11/04/20 14:24	
Boron	mg/L	ND	0.025	0.0062	11/04/20 14:24	
Lithium	mg/L	ND	0.030	0.00039	11/04/20 14:24	

LABORATORY CONTROL SAMPLE: 3055591

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.011	107	80-120	
Boron	mg/L	0.05	0.053	107	80-120	
Lithium	mg/L	0.05	0.053	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3055592 3055593

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92502427001 Result	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	0.52 ug/L	0.01	0.01	0.010	0.0098	96	93	75-125	3	20
Boron	mg/L	ND	0.05	0.05	0.056	0.056	103	102	75-125	0	20
Lithium	mg/L	0.79J ug/L	0.05	0.05	0.054	0.053	107	104	75-125	3	20

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

QC Batch:	577485	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3010A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92503105016, 92503105017, 92503105018, 92503105019, 92503105020, 92503105021, 92503105032, 92503105033, 92503105034, 92503105035, 92503105036, 92503105037, 92503105038, 92503105039, 92503105040, 92503105041, 92503105043

METHOD BLANK: 3055594 Matrix: Water

Associated Lab Samples: 92503105016, 92503105017, 92503105018, 92503105019, 92503105020, 92503105021, 92503105032, 92503105033, 92503105034, 92503105035, 92503105036, 92503105037, 92503105038, 92503105039, 92503105040, 92503105041, 92503105043

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	11/04/20 16:02	
Boron	mg/L	ND	0.025	0.0062	11/04/20 16:02	
Lithium	mg/L	ND	0.030	0.00039	11/04/20 16:02	

LABORATORY CONTROL SAMPLE: 3055595

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	102	80-120	
Boron	mg/L	0.05	0.054	108	80-120	
Lithium	mg/L	0.05	0.053	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3055596 3055597

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92503105016 Result	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	0.0024J	0.01	0.01	0.014	0.014	117	120	75-125	2	20
Boron	mg/L	2.4	0.05	0.05	2.5	2.5	241	306	75-125	1	20 M6
Lithium	mg/L	0.093	0.05	0.05	0.15	0.15	107	105	75-125	1	20

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

QC Batch:	577753	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3010A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Asheville
Associated Lab Samples:	92503105022, 92503105023, 92503105024, 92503105025, 92503105026, 92503105027, 92503105028, 92503105029, 92503105030, 92503105031, 92503105042, 92503105044, 92503105045, 92503105046, 92503105047, 92503105048, 92503105049, 92503105050		

METHOD BLANK:	3056926	Matrix:	Water
Associated Lab Samples:	92503105022, 92503105023, 92503105024, 92503105025, 92503105026, 92503105027, 92503105028, 92503105029, 92503105030, 92503105031, 92503105042, 92503105044, 92503105045, 92503105046, 92503105047, 92503105048, 92503105049, 92503105050		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	11/04/20 15:55	
Boron	mg/L	ND	0.025	0.0062	11/04/20 15:55	
Lithium	mg/L	ND	0.030	0.00039	11/04/20 15:55	

LABORATORY CONTROL SAMPLE: 3056927						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	103	80-120	
Boron	mg/L	0.05	0.054	108	80-120	
Lithium	mg/L	0.05	0.054	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3056928												3056929	
Parameter	Units	92503105023 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Arsenic	mg/L	0.0024J	0.01	0.01	0.013	0.013	110	111	75-125	1	20		
Boron	mg/L	2.5	0.05	0.05	2.5	2.6	-11	58	75-125	1	20	M6	
Lithium	mg/L	0.10	0.05	0.05	0.16	0.16	109	109	75-125	0	20		

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

QC Batch: 578191 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92503105001, 92503105002, 92503105003, 92503105004, 92503105005, 92503105006, 92503105007, 92503105008, 92503105009, 92503105010, 92503105011, 92503105012, 92503105013, 92503105014, 92503105015, 92503105016, 92503105017, 92503105018, 92503105019

METHOD BLANK: 3058784 Matrix: Water

Associated Lab Samples: 92503105001, 92503105002, 92503105003, 92503105004, 92503105005, 92503105006, 92503105007, 92503105008, 92503105009, 92503105010, 92503105011, 92503105012, 92503105013, 92503105014, 92503105015, 92503105016, 92503105017, 92503105018, 92503105019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	11/05/20 15:54	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	11/05/20 15:54	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	11/05/20 15:54	

LABORATORY CONTROL SAMPLE: 3058785

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	54.3	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3058786 3058787

Parameter	Units	92503097001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	116	50	50	162	163	93	93	80-120	0	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3058788 3058789

Parameter	Units	92503105010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	105	50	50	152	155	93	100	80-120	2	25	

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

QC Batch: 578192 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92503105020, 92503105021, 92503105022, 92503105023, 92503105024, 92503105025, 92503105026, 92503105027, 92503105028, 92503105029, 92503105030, 92503105031, 92503105032, 92503105033, 92503105034, 92503105035, 92503105036, 92503105037, 92503105038, 92503105039

METHOD BLANK: 3058793 Matrix: Water

Associated Lab Samples: 92503105020, 92503105021, 92503105022, 92503105023, 92503105024, 92503105025, 92503105026, 92503105027, 92503105028, 92503105029, 92503105030, 92503105031, 92503105032, 92503105033, 92503105034, 92503105035, 92503105036, 92503105037, 92503105038, 92503105039

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	11/05/20 20:12	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	11/05/20 20:12	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	11/05/20 20:12	

LABORATORY CONTROL SAMPLE: 3058794

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	54.0	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3058795 3058796

Parameter	Units	92503105020		3058795		3058796		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Alkalinity, Total as CaCO3	mg/L	106	50	50	153	157	94	102	80-120	3	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3058797 3058798

Parameter	Units	92503105030		3058797		3058798		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Alkalinity, Total as CaCO3	mg/L	103	50	50	154	155	101	103	80-120	1	25	

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

QC Batch: 578505 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92503105040, 92503105041, 92503105042, 92503105043, 92503105044, 92503105045, 92503105046, 92503105047, 92503105048, 92503105049, 92503105050

METHOD BLANK: 3060593 Matrix: Water
Associated Lab Samples: 92503105040, 92503105041, 92503105042, 92503105043, 92503105044, 92503105045, 92503105046, 92503105047, 92503105048, 92503105049, 92503105050

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	11/06/20 11:43	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	11/06/20 11:43	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	11/06/20 11:43	

LABORATORY CONTROL SAMPLE: 3060594

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	53.4	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3060595 3060596

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	Conc.	Spike Conc.	Spike Conc.							
Alkalinity, Total as CaCO3	mg/L	114	50	50	160	159	91	89	80-120	1	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3060597 3060598

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	Conc.	Spike Conc.	Spike Conc.							
Alkalinity, Total as CaCO3	mg/L	113	50	50	162	161	98	96	80-120	1	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

QC Batch: 577170 Analysis Method: SM 2540C-2011
 QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
 Laboratory: Pace Analytical Services - Asheville
 Associated Lab Samples: 92503105001, 92503105002, 92503105003, 92503105004, 92503105005, 92503105008, 92503105011,
 92503105015, 92503105018, 92503105021

METHOD BLANK: 3054185 Matrix: Water
 Associated Lab Samples: 92503105001, 92503105002, 92503105003, 92503105004, 92503105005, 92503105008, 92503105011,
 92503105015, 92503105018, 92503105021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	10/31/20 14:41	

LABORATORY CONTROL SAMPLE: 3054186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	246	98	90-110	

SAMPLE DUPLICATE: 3054187

Parameter	Units	92502500004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	558	573	3	25	

SAMPLE DUPLICATE: 3054188

Parameter	Units	92503105015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	20200	20200	0	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

QC Batch: 577417 Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92503105006, 92503105007, 92503105009, 92503105010, 92503105012, 92503105013, 92503105014, 92503105016, 92503105017, 92503105019, 92503105020, 92503105032, 92503105033, 92503105034, 92503105035, 92503105036, 92503105037, 92503105038, 92503105039, 92503105040

METHOD BLANK: 3055349 Matrix: Water
Associated Lab Samples: 92503105006, 92503105007, 92503105009, 92503105010, 92503105012, 92503105013, 92503105014, 92503105016, 92503105017, 92503105019, 92503105020, 92503105032, 92503105033, 92503105034, 92503105035, 92503105036, 92503105037, 92503105038, 92503105039, 92503105040

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	11/02/20 18:03	

LABORATORY CONTROL SAMPLE: 3055350

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	260	104	90-110	

SAMPLE DUPLICATE: 3055426

Parameter	Units	92503105006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	21400	20100	6	25	

SAMPLE DUPLICATE: 3055427

Parameter	Units	92503105020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	19900	19800	1	25	

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

QC Batch: 577709 Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92503105041, 92503105043

METHOD BLANK: 3056702 Matrix: Water
Associated Lab Samples: 92503105041, 92503105043

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	11/03/20 17:09	

LABORATORY CONTROL SAMPLE: 3056703

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	256	102	90-110	

SAMPLE DUPLICATE: 3056704

Parameter	Units	92503105043 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	22300	21500	4	25	

SAMPLE DUPLICATE: 3056705

Parameter	Units	92503186007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	266000 ug/L	280	5	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

QC Batch: 577108 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92503105001, 92503105002, 92503105003, 92503105004, 92503105005, 92503105006, 92503105007, 92503105008, 92503105009, 92503105010, 92503105011, 92503105012, 92503105013, 92503105014, 92503105015, 92503105016, 92503105017, 92503105018, 92503105019, 92503105020

METHOD BLANK: 3053865 Matrix: Water
Associated Lab Samples: 92503105001, 92503105002, 92503105003, 92503105004, 92503105005, 92503105006, 92503105007, 92503105008, 92503105009, 92503105010, 92503105011, 92503105012, 92503105013, 92503105014, 92503105015, 92503105016, 92503105017, 92503105018, 92503105019, 92503105020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/31/20 15:17	
Fluoride	mg/L	ND	0.10	0.050	10/31/20 15:17	
Sulfate	mg/L	ND	1.0	0.50	10/31/20 15:17	

LABORATORY CONTROL SAMPLE: 3053866

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.7	107	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	50	54.1	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3053867 3053868

Parameter	Units	92503105001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Chloride	mg/L	10300	50	50	10200	12100	-26	3750	90-110	17	10	M6,R1
Fluoride	mg/L	ND	2.5	2.5	ND	ND	0	0	90-110		10	M1
Sulfate	mg/L	1460	50	50	1450	1750	-24	594	90-110	19	10	M6,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3053869 3053870

Parameter	Units	92503105011 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Chloride	mg/L	12600	50	50	14500	10100	3820	-5120	90-110	36	10	M6,R1
Fluoride	mg/L	ND	2.5	2.5	ND	ND	0	0	90-110		10	M1
Sulfate	mg/L	1800	50	50	2210	1410	818	-782	90-110	44	10	M6,R1

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QUALITY CONTROL DATA

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

QC Batch:	577113	Analysis Method:	EPA 300.0 Rev 2.1 1993
QC Batch Method:	EPA 300.0 Rev 2.1 1993	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92503105021, 92503105032, 92503105033, 92503105034, 92503105035, 92503105036, 92503105037, 92503105038, 92503105039, 92503105040, 92503105041, 92503105043

METHOD BLANK: 3053914 Matrix: Water
Associated Lab Samples: 92503105021, 92503105032, 92503105033, 92503105034, 92503105035, 92503105036, 92503105037, 92503105038, 92503105039, 92503105040, 92503105041, 92503105043

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	11/01/20 22:52	
Fluoride	mg/L	ND	0.10	0.050	11/01/20 22:52	
Sulfate	mg/L	ND	1.0	0.50	11/01/20 22:52	

LABORATORY CONTROL SAMPLE: 3053915

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	54.9	110	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	50	54.8	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3053916 3053917

Parameter	Units	3053916		3053917		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Result	MSD Result						
Chloride	mg/L	10300	50	50	10500	9820	529	-934	90-110	7	10 M6
Fluoride	mg/L	ND	2.5	2.5	ND	ND	0	0	90-110		10 M1
Sulfate	mg/L	1430	50	50	1450	1400	33	-50	90-110	3	10 M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3053918 3053919

Parameter	Units	3053918		3053919		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Result	MSD Result						
Chloride	mg/L	14900	50	50	11300	11800	-7300	-6160	90-110	5	10 M6
Fluoride	mg/L	ND	2.5	2.5	ND	ND	0	0	90-110		10 M1
Sulfate	mg/L	1470	50	50	1550	1670	158	391	90-110	7	10 M6

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QUALIFIERS

Project: MCMANUS SURFACE WATER

Pace Project No.: 92503105

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

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

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

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92503105001	T1-1HT				
92503105002	T1-1LT				
92503105003	T1-2HT				
92503105004	T1-2HTS				
92503105005	T1-2LT				
92503105006	T1-3HT				
92503105007	T1-3HTS				
92503105008	T1-3LT				
92503105009	T1-4HT				
92503105010	T1-4HTS				
92503105011	T1-4HLT				
92503105012	T2-1HT				
92503105013	T2-2HT				
92503105014	T2-2HTS				
92503105015	T2-2LT				
92503105016	T2-3HT				
92503105017	T2-3HTS				
92503105018	T2-3LT				
92503105019	T2-4HT				
92503105020	T2-4HTS				
92503105021	T2-4LT				
92503105022	T3-1HT				
92503105023	T3-2HT				
92503105024	T3-2HTS				
92503105025	T3-2LT				
92503105026	T3-3HT				
92503105027	T3-3HTS				
92503105028	T3-3LT				
92503105029	T3-4HT				
92503105030	T3-4HTS				
92503105031	T3-4LT				
92503105032	T4-1HS				
92503105033	T4-1HB				
92503105034	T4-1L				
92503105035	T4-2HS				
92503105036	T4-2HB				
92503105037	T4-2L				
92503105038	T4-3HS				
92503105039	T4-3HB				
92503105040	T4-3L				
92503105041	T4-4HS				
92503105042	T4-4HB				
92503105043	T4-4L				
92503105044	BG-1LT				
92503105045	BG-2HT				
92503105001	T1-1HT	EPA 3010A	577480	EPA 6010D	577493
92503105002	T1-1LT	EPA 3010A	577480	EPA 6010D	577493
92503105003	T1-2HT	EPA 3010A	577480	EPA 6010D	577493

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92503105004	T1-2HTS	EPA 3010A	577480	EPA 6010D	577493
92503105005	T1-2LT	EPA 3010A	577480	EPA 6010D	577493
92503105006	T1-3HT	EPA 3010A	577480	EPA 6010D	577493
92503105007	T1-3HTS	EPA 3010A	577480	EPA 6010D	577493
92503105008	T1-3LT	EPA 3010A	577480	EPA 6010D	577493
92503105009	T1-4HT	EPA 3010A	577480	EPA 6010D	577493
92503105010	T1-4HTS	EPA 3010A	577480	EPA 6010D	577493
92503105011	T1-4HLT	EPA 3010A	577480	EPA 6010D	577493
92503105012	T2-1HT	EPA 3010A	577480	EPA 6010D	577493
92503105013	T2-2HT	EPA 3010A	577480	EPA 6010D	577493
92503105014	T2-2HTS	EPA 3010A	577480	EPA 6010D	577493
92503105015	T2-2LT	EPA 3010A	577480	EPA 6010D	577493
92503105016	T2-3HT	EPA 3010A	577480	EPA 6010D	577493
92503105017	T2-3HTS	EPA 3010A	577480	EPA 6010D	577493
92503105018	T2-3LT	EPA 3010A	577480	EPA 6010D	577493
92503105019	T2-4HT	EPA 3010A	577481	EPA 6010D	577492
92503105020	T2-4HTS	EPA 3010A	577481	EPA 6010D	577492
92503105021	T2-4LT	EPA 3010A	577481	EPA 6010D	577492
92503105022	T3-1HT	EPA 3010A	577750	EPA 6010D	577772
92503105023	T3-2HT	EPA 3010A	577750	EPA 6010D	577772
92503105024	T3-2HTS	EPA 3010A	577750	EPA 6010D	577772
92503105025	T3-2LT	EPA 3010A	577750	EPA 6010D	577772
92503105026	T3-3HT	EPA 3010A	577750	EPA 6010D	577772
92503105027	T3-3HTS	EPA 3010A	577750	EPA 6010D	577772
92503105028	T3-3LT	EPA 3010A	577750	EPA 6010D	577772
92503105029	T3-4HT	EPA 3010A	577750	EPA 6010D	577772
92503105030	T3-4HTS	EPA 3010A	577750	EPA 6010D	577772
92503105031	T3-4LT	EPA 3010A	577750	EPA 6010D	577772
92503105032	T4-1HS	EPA 3010A	577481	EPA 6010D	577492
92503105033	T4-1HB	EPA 3010A	577481	EPA 6010D	577492
92503105034	T4-1L	EPA 3010A	577481	EPA 6010D	577492
92503105035	T4-2HS	EPA 3010A	577481	EPA 6010D	577492
92503105036	T4-2HB	EPA 3010A	577481	EPA 6010D	577492
92503105037	T4-2L	EPA 3010A	577481	EPA 6010D	577492
92503105038	T4-3HS	EPA 3010A	577481	EPA 6010D	577492
92503105039	T4-3HB	EPA 3010A	577481	EPA 6010D	577492
92503105040	T4-3L	EPA 3010A	577481	EPA 6010D	577492
92503105041	T4-4HS	EPA 3010A	577481	EPA 6010D	577492
92503105042	T4-4HB	EPA 3010A	577750	EPA 6010D	577772
92503105043	T4-4L	EPA 3010A	577481	EPA 6010D	577492
92503105044	BG-1LT	EPA 3010A	577750	EPA 6010D	577772
92503105045	BG-2HT	EPA 3010A	577750	EPA 6010D	577772
92503105046	DUP-1	EPA 3010A	577750	EPA 6010D	577772
92503105047	DUP-2	EPA 3010A	577750	EPA 6010D	577772
92503105048	DUP-3	EPA 3010A	577750	EPA 6010D	577772
92503105049	DUP-4	EPA 3010A	577750	EPA 6010D	577772

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92503105050	DUP-5	EPA 3010A	577750	EPA 6010D	577772
92503105001	T1-1HT	EPA 3010A	577484	EPA 6020B	577499
92503105002	T1-1LT	EPA 3010A	577484	EPA 6020B	577499
92503105003	T1-2HT	EPA 3010A	577484	EPA 6020B	577499
92503105004	T1-2HTS	EPA 3010A	577484	EPA 6020B	577499
92503105005	T1-2LT	EPA 3010A	577484	EPA 6020B	577499
92503105006	T1-3HT	EPA 3010A	577484	EPA 6020B	577499
92503105007	T1-3HTS	EPA 3010A	577484	EPA 6020B	577499
92503105008	T1-3LT	EPA 3010A	577484	EPA 6020B	577499
92503105009	T1-4HT	EPA 3010A	577484	EPA 6020B	577499
92503105010	T1-4HTS	EPA 3010A	577484	EPA 6020B	577499
92503105011	T1-4HLT	EPA 3010A	577484	EPA 6020B	577499
92503105012	T2-1HT	EPA 3010A	577484	EPA 6020B	577499
92503105013	T2-2HT	EPA 3010A	577484	EPA 6020B	577499
92503105014	T2-2HTS	EPA 3010A	577484	EPA 6020B	577499
92503105015	T2-2LT	EPA 3010A	577484	EPA 6020B	577499
92503105016	T2-3HT	EPA 3010A	577485	EPA 6020B	577498
92503105017	T2-3HTS	EPA 3010A	577485	EPA 6020B	577498
92503105018	T2-3LT	EPA 3010A	577485	EPA 6020B	577498
92503105019	T2-4HT	EPA 3010A	577485	EPA 6020B	577498
92503105020	T2-4HTS	EPA 3010A	577485	EPA 6020B	577498
92503105021	T2-4LT	EPA 3010A	577485	EPA 6020B	577498
92503105022	T3-1HT	EPA 3010A	577753	EPA 6020B	577771
92503105023	T3-2HT	EPA 3010A	577753	EPA 6020B	577771
92503105024	T3-2HTS	EPA 3010A	577753	EPA 6020B	577771
92503105025	T3-2LT	EPA 3010A	577753	EPA 6020B	577771
92503105026	T3-3HT	EPA 3010A	577753	EPA 6020B	577771
92503105027	T3-3HTS	EPA 3010A	577753	EPA 6020B	577771
92503105028	T3-3LT	EPA 3010A	577753	EPA 6020B	577771
92503105029	T3-4HT	EPA 3010A	577753	EPA 6020B	577771
92503105030	T3-4HTS	EPA 3010A	577753	EPA 6020B	577771
92503105031	T3-4LT	EPA 3010A	577753	EPA 6020B	577771
92503105032	T4-1HS	EPA 3010A	577485	EPA 6020B	577498
92503105033	T4-1HB	EPA 3010A	577485	EPA 6020B	577498
92503105034	T4-1L	EPA 3010A	577485	EPA 6020B	577498
92503105035	T4-2HS	EPA 3010A	577485	EPA 6020B	577498
92503105036	T4-2HB	EPA 3010A	577485	EPA 6020B	577498
92503105037	T4-2L	EPA 3010A	577485	EPA 6020B	577498
92503105038	T4-3HS	EPA 3010A	577485	EPA 6020B	577498
92503105039	T4-3HB	EPA 3010A	577485	EPA 6020B	577498
92503105040	T4-3L	EPA 3010A	577485	EPA 6020B	577498
92503105041	T4-4HS	EPA 3010A	577485	EPA 6020B	577498
92503105042	T4-4HB	EPA 3010A	577753	EPA 6020B	577771
92503105043	T4-4L	EPA 3010A	577485	EPA 6020B	577498
92503105044	BG-1LT	EPA 3010A	577753	EPA 6020B	577771

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92503105045	BG-2HT	EPA 3010A	577753	EPA 6020B	577771
92503105046	DUP-1	EPA 3010A	577753	EPA 6020B	577771
92503105047	DUP-2	EPA 3010A	577753	EPA 6020B	577771
92503105048	DUP-3	EPA 3010A	577753	EPA 6020B	577771
92503105049	DUP-4	EPA 3010A	577753	EPA 6020B	577771
92503105050	DUP-5	EPA 3010A	577753	EPA 6020B	577771
92503105001	T1-1HT	SM 2320B-2011	578191		
92503105002	T1-1LT	SM 2320B-2011	578191		
92503105003	T1-2HT	SM 2320B-2011	578191		
92503105004	T1-2HTS	SM 2320B-2011	578191		
92503105005	T1-2LT	SM 2320B-2011	578191		
92503105006	T1-3HT	SM 2320B-2011	578191		
92503105007	T1-3HTS	SM 2320B-2011	578191		
92503105008	T1-3LT	SM 2320B-2011	578191		
92503105009	T1-4HT	SM 2320B-2011	578191		
92503105010	T1-4HTS	SM 2320B-2011	578191		
92503105011	T1-4HLT	SM 2320B-2011	578191		
92503105012	T2-1HT	SM 2320B-2011	578191		
92503105013	T2-2HT	SM 2320B-2011	578191		
92503105014	T2-2HTS	SM 2320B-2011	578191		
92503105015	T2-2LT	SM 2320B-2011	578191		
92503105016	T2-3HT	SM 2320B-2011	578191		
92503105017	T2-3HTS	SM 2320B-2011	578191		
92503105018	T2-3LT	SM 2320B-2011	578191		
92503105019	T2-4HT	SM 2320B-2011	578191		
92503105020	T2-4HTS	SM 2320B-2011	578192		
92503105021	T2-4LT	SM 2320B-2011	578192		
92503105022	T3-1HT	SM 2320B-2011	578192		
92503105023	T3-2HT	SM 2320B-2011	578192		
92503105024	T3-2HTS	SM 2320B-2011	578192		
92503105025	T3-2LT	SM 2320B-2011	578192		
92503105026	T3-3HT	SM 2320B-2011	578192		
92503105027	T3-3HTS	SM 2320B-2011	578192		
92503105028	T3-3LT	SM 2320B-2011	578192		
92503105029	T3-4HT	SM 2320B-2011	578192		
92503105030	T3-4HTS	SM 2320B-2011	578192		
92503105031	T3-4LT	SM 2320B-2011	578192		
92503105032	T4-1HS	SM 2320B-2011	578192		
92503105033	T4-1HB	SM 2320B-2011	578192		
92503105034	T4-1L	SM 2320B-2011	578192		
92503105035	T4-2HS	SM 2320B-2011	578192		
92503105036	T4-2HB	SM 2320B-2011	578192		
92503105037	T4-2L	SM 2320B-2011	578192		
92503105038	T4-3HS	SM 2320B-2011	578192		
92503105039	T4-3HB	SM 2320B-2011	578192		
92503105040	T4-3L	SM 2320B-2011	578505		
92503105041	T4-4HS	SM 2320B-2011	578505		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92503105042	T4-4HB	SM 2320B-2011	578505		
92503105043	T4-4L	SM 2320B-2011	578505		
92503105044	BG-1LT	SM 2320B-2011	578505		
92503105045	BG-2HT	SM 2320B-2011	578505		
92503105046	DUP-1	SM 2320B-2011	578505		
92503105047	DUP-2	SM 2320B-2011	578505		
92503105048	DUP-3	SM 2320B-2011	578505		
92503105049	DUP-4	SM 2320B-2011	578505		
92503105050	DUP-5	SM 2320B-2011	578505		
92503105001	T1-1HT	SM 2540C-2011	577170		
92503105002	T1-1LT	SM 2540C-2011	577170		
92503105003	T1-2HT	SM 2540C-2011	577170		
92503105004	T1-2HTS	SM 2540C-2011	577170		
92503105005	T1-2LT	SM 2540C-2011	577170		
92503105006	T1-3HT	SM 2540C-2011	577417		
92503105007	T1-3HTS	SM 2540C-2011	577417		
92503105008	T1-3LT	SM 2540C-2011	577170		
92503105009	T1-4HT	SM 2540C-2011	577417		
92503105010	T1-4HTS	SM 2540C-2011	577417		
92503105011	T1-4HLT	SM 2540C-2011	577170		
92503105012	T2-1HT	SM 2540C-2011	577417		
92503105013	T2-2HT	SM 2540C-2011	577417		
92503105014	T2-2HTS	SM 2540C-2011	577417		
92503105015	T2-2LT	SM 2540C-2011	577170		
92503105016	T2-3HT	SM 2540C-2011	577417		
92503105017	T2-3HTS	SM 2540C-2011	577417		
92503105018	T2-3LT	SM 2540C-2011	577170		
92503105019	T2-4HT	SM 2540C-2011	577417		
92503105020	T2-4HTS	SM 2540C-2011	577417		
92503105021	T2-4LT	SM 2540C-2011	577170		
92503105032	T4-1HS	SM 2540C-2011	577417		
92503105033	T4-1HB	SM 2540C-2011	577417		
92503105034	T4-1L	SM 2540C-2011	577417		
92503105035	T4-2HS	SM 2540C-2011	577417		
92503105036	T4-2HB	SM 2540C-2011	577417		
92503105037	T4-2L	SM 2540C-2011	577417		
92503105038	T4-3HS	SM 2540C-2011	577417		
92503105039	T4-3HB	SM 2540C-2011	577417		
92503105040	T4-3L	SM 2540C-2011	577417		
92503105041	T4-4HS	SM 2540C-2011	577709		
92503105043	T4-4L	SM 2540C-2011	577709		
92503105001	T1-1HT	EPA 300.0 Rev 2.1 1993	577108		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS SURFACE WATER
Pace Project No.: 92503105

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92503105002	T1-1LT	EPA 300.0 Rev 2.1 1993	577108		
92503105003	T1-2HT	EPA 300.0 Rev 2.1 1993	577108		
92503105004	T1-2HTS	EPA 300.0 Rev 2.1 1993	577108		
92503105005	T1-2LT	EPA 300.0 Rev 2.1 1993	577108		
92503105006	T1-3HT	EPA 300.0 Rev 2.1 1993	577108		
92503105007	T1-3HTS	EPA 300.0 Rev 2.1 1993	577108		
92503105008	T1-3LT	EPA 300.0 Rev 2.1 1993	577108		
92503105009	T1-4HT	EPA 300.0 Rev 2.1 1993	577108		
92503105010	T1-4HTS	EPA 300.0 Rev 2.1 1993	577108		
92503105011	T1-4HLT	EPA 300.0 Rev 2.1 1993	577108		
92503105012	T2-1HT	EPA 300.0 Rev 2.1 1993	577108		
92503105013	T2-2HT	EPA 300.0 Rev 2.1 1993	577108		
92503105014	T2-2HTS	EPA 300.0 Rev 2.1 1993	577108		
92503105015	T2-2LT	EPA 300.0 Rev 2.1 1993	577108		
92503105016	T2-3HT	EPA 300.0 Rev 2.1 1993	577108		
92503105017	T2-3HTS	EPA 300.0 Rev 2.1 1993	577108		
92503105018	T2-3LT	EPA 300.0 Rev 2.1 1993	577108		
92503105019	T2-4HT	EPA 300.0 Rev 2.1 1993	577108		
92503105020	T2-4HTS	EPA 300.0 Rev 2.1 1993	577108		
92503105021	T2-4LT	EPA 300.0 Rev 2.1 1993	577113		
92503105032	T4-1HS	EPA 300.0 Rev 2.1 1993	577113		
92503105033	T4-1HB	EPA 300.0 Rev 2.1 1993	577113		
92503105034	T4-1L	EPA 300.0 Rev 2.1 1993	577113		
92503105035	T4-2HS	EPA 300.0 Rev 2.1 1993	577113		
92503105036	T4-2HB	EPA 300.0 Rev 2.1 1993	577113		
92503105037	T4-2L	EPA 300.0 Rev 2.1 1993	577113		
92503105038	T4-3HS	EPA 300.0 Rev 2.1 1993	577113		
92503105039	T4-3HB	EPA 300.0 Rev 2.1 1993	577113		
92503105040	T4-3L	EPA 300.0 Rev 2.1 1993	577113		
92503105041	T4-4HS	EPA 300.0 Rev 2.1 1993	577113		
92503105043	T4-4L	EPA 300.0 Rev 2.1 1993	577113		

REPORT OF LABORATORY ANALYSIS

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Document Name: Sample Condition Upon Receipt (SCUR)
 Document No.: F-CAR-CS-033-Rev.07
 Document Revised: October 28, 2020
 Page 1 of 2
 Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: Georgia Power

Project #: W0#: 92503105



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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: SG 10-30-20

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: IR Gun ID: 9370101 Type of Ice: Wet Blue None

Cooler Temp: 4.8, 3.2, 5.3 Correction Factor: Add/Subtract (°C) 0

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 4.8, 3.2, 5.3

USDA Regulated Soil (N/A, water sample)

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? Yes No

		Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	9. Samples missing from page 3 + 5, + one on 4.
-Includes Date/Time/ID/Analysis Matrix: KLT		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



Document Name:
 Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LUIg

**Bottom half of box is to list number of bottles

Project #

WO# : 92503105

PM: KLH1

Due Date: 11/06/20

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (p9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2SO3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

pH Adjustment Log for Preserved Samples

Page 1 of COC

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/RO15 (water) DOC, LHM

**Bottom half of box is to list number of bottle

Project # **WO# : 92503105**
 PM: KLH1 Due Date: 11/06/20
 CLIENT: GA-GA Power

Item#	Item Description	1	2	3	4	5	6	7	8	9	10	11	12
BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)													
BP3U-250 mL Plastic Unpreserved (N/A)													
BP2U-500 mL Plastic Unpreserved (N/A)													
BP1U-1 liter Plastic Unpreserved (N/A)													
BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)													
BP2N-250 mL plastic HNO3 (pH < 2)													
BP4Z-125 mL Plastic ZN Acetate & NaOH (pH)													
BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)													
WGFU-WGFU-mouthed Glass Jar Unpreserved													
AG1U-1 liter Amber Unpreserved (N/A) (Cl-)													
AG3H-1 liter Amber HCl (pH < 2)													
AG3U-250 mL Amber Unpreserved (N/A) (Cl-)													
AG1S-1 liter Amber H2SO4 (pH < 2)													
AG3S-250 mL Amber H2SO4 (pH < 2)													
AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)													
DGBH-40 mL VOA HCl (N/A)													
VG9T-40 mL VOA N2S2O8 (N/A)													
VG9U-40 mL VOA Urp (N/A)													
GG9H-40 mL VOA H3PO4 (N/A)													
VORU (6 vials per 60)-5095 vial (N/A)													
V/OK (6 vials per 60)-APP4/60s lot (N/A)													
SP9T-125 mL Sterile Plastic (N/A - 100)													
SP9T-250 mL Sterile Plastic (N/A - 100)													
BP3A-250 mL Plastic (N/A) (0.3-9.7)													
AGDU-100 mL Amber Unpreserved vials (N/A)													
VGCU-20 mL Scintillation vials (N/A)													
DG9U-40 mL Amber Unpreserved vials (N/A)													

Page 2 of COC

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LTHg

**Bottom half of box is to list number of bottle

Project **WO# : 92503105**
 PM: KLH1 Due Date: 11/06/20
 CLIENT: GA-GA Power

Item #	Item Description	1	2	3	4	5	6	7	8	9	10	11	12
BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)													
BP9U-250 mL Plastic Unpreserved (N/A)													
BP2U-500 mL Plastic Unpreserved (N/A)													
BP1U-1 liter Plastic Unpreserved (N/A)													
BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)													
BP3N-250 mL plastic HNO3 (pH < 2)													
BP4Z-125 mL Plastic ZN Acetate & NaOH (p>9)													
BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)													
WGFU-Wide-mouthed Glass Jar Unpreserved													
AG1U-1 liter Amber Unpreserved (N/A) (Cl-)													
AG3H-1 liter Amber HCl (pH < 2)													
AG3U-250 mL Amber Unpreserved (N/A) (Cl-)													
AG1S-1 liter Amber H2SO4 (pH < 2)													
AG3S-250 mL Amber H2SO4 (pH < 2)													
AG5A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)													
D69H-40 mL VOA HCl (N/A)													
VG9T-40 mL VOA N82503 (N/A)													
VG9U-40 mL VOA Urea (N/A)													
OG9P-40 mL VOA H3PO4 (N/A)													
V69K (5 vials per kit)-5025 kit (N/A)													
V79K (5 vials per kit)-VPH/Gas kit (N/A)													
SP8T-125 mL Sterile Plastic (N/A - 10b)													
SP2T-250 mL Sterile Plastic (N/A - 10b)													
BP3A-250 mL Plastic (NH2)2SO4 (9.2-9.7)													
AG0U-100 mL Amber Unpreserved vials (N/A)													
V5GU-20 mL-Schmittson vials (N/A)													
D69U-40 mL Amber Unpreserved vials (N/A)													

Page 4 of COC

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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

**Laboratory receiving samples:**

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition
Upon Receipt

Client Name: Georgia Power

Project # **WO# : 92503105**

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

PM: KLH1 Due Date: 11/06/20

CLIENT: GA-GA Power

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: MG-11/3/20

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Thermometer: IR Gun ID: 92T061 Type of Ice: Wet Blue None

Yes No N/A

Cooler Temp (°C): 11.4, 12 Correction Factor: Add/Subtract (°C) 0.0

Temp should be above freezing to 6°C

Cooler Temp Corrected (°C): 11.4, 12

Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil N/A, water sample

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (Internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WVI</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Icc melted. Rec'd Allot page 3 and page 5.
Rec'd T4-4HB from page 4

Lot ID of split containers: _____

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottle

Project # **W0# : 92503105**

PM: KLH1

Due Date: 11/06/20

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic 2N Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1																												
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12																												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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



*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottle

Project #

W0# : 92503105

PM: KLH1

Due Date: 11/06/20

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A[DG3A]-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG6U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG6U-40 mL Amber Unpreserved vials (N/A)		
1																													
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12																													

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A		Section B		Section C	
Client Information:	Required Project Information:	Invoice Information:		Regulatory Agency	
Company: Georgia Power	Report To: Veronica Fay	Attention:	Company Name:	State / Location:	GA
Address: 1003 Weatherstone Parkway	Copy To:	Address:	Project Name:	Page Order:	
City: Marietta, GA 30067		Address:	Project Name: Mckinnis Surface Water	Page Project Manager: Kevin Herring@pocelabs.com	
Phone: (404)358-3460	Project #:	Address:	Project Name:	Page Project #:	10768
Fax:		Address:	Project Name:	Page Project #:	10768
Requested Due Date:		Address:	Project Name:	Page Project #:	10768

ITEM #	SAMPLE ID	MATRIX CODE (See valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH
				START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other				
1	T1-1HT	W1G	10/29/20	0955		3	2	1									92503105	7.43
2	T1-1HTS	W1G																7.48
3	T1-1LT	W1G	10/29/20	1638		3	2	1										7.36
4	T1-2HT	W1G	10/29/20	1007		3	2	1										7.37
5	T1-2HTS	W1G	10/29/20	1000		3	2	1										7.51
6	T1-2LT	W1G	10/29/20	1630		3	2	1										7.26
7	T1-3HT	W1G	10/29/20	1028		3	2	1										7.34
8	T1-3HTS	W1G	10/29/20	1026		3	2	1										7.34
9	T1-3LT	W1G	10/29/20	1414		3	2	1										7.36
10	T1-4HT	W1G	10/29/20	1206		3	2	1										7.36
11	T1-4HTS	W1G	10/29/20	1152		3	2	1										7.34
12	T1-4LT	W1G	10/27/20	1050		3	2	1										7.34

Ch. As. Li. Mg. Na. K	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP In C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
	Will Leucker / Regulate	10/29/20	1314	Edex / State of Georgia	10/29/20	1314	4.8	Y	N		Y
<p>ADDITIONAL COMMENTS</p> <p>PRINT NAME OF SAMPLER: Kevin Stephenson, Will Leucker, Trent Godwin</p> <p>SIGNATURE OF SAMPLER: <i>[Signature]</i> DATE SIGNED: 10/29/20</p>											



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

Section A Client Information:

Year: Georgia Power
 1003 Weatherstone Parkway
 Woodstock, GA 30119
 Phone: (404) 358-8469
 Fax: VeriTech Analytical
 Email: veritech@veritech.com

Section B Required Project Information:

Report To: Veronica Fay
 Copy To:
 Purchase Order #: Methans Surface Water
 Project Name: Methans Surface Water
 Project #: 10768

Section C Invoice Information:

Company Name:
 Address:
 Page Quote:
 Page Project Manager: Kevin Horton@veritech.com
 Page Price #: 10768
 Regulatory Agency:
 State / Location: GA

ITEM #	SAMPLE ID	MATRIX CODE		SAMPLE TYPE		COLLECTED		DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES								Analytes Test	Requested Analytes Estimated (Y/N)	Residual Chlorine (Y/N)	PH	
		DW1	DW2	WT1	WT2	G-GRAB	C-COMP							START	END	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3					Methanol
1	T2-1 HT	05	06	G	G	10/29/20	09:29					3	2	1											012	
2	T2-1 HTS																									013
3	T2-1 LT																									014
4	T2-2 HT	05	06	G	G	10/29/20	09:41					3	2	1												015
5	T2-2 HTS	05	06	G	G	10/29/20	09:33					3	2	1												016
6	T2-2 LT	05	06	G	G	10/27/20	15:38					3	2	1												017
7	T2-3 HT	05	06	G	G	10/29/20	10:53					3	2	1												018
8	T2-3 HTS	05	06	G	G	10/29/20	10:46					3	2	1												019
9	T2-3 LT	05	06	G	G	10/27/20	15:08					3	2	1												020
10	T2-4 HT	05	06	G	G	10/29/20	11:09					3	2	1												021
11	T2-4 HTS	05	06	G	G	10/29/20	11:30					3	2	1												022
12	T2-4 LT	05	06	G	G	10/27/20	11:32					3	2	1												023

ADDITIONAL COMMENTS
 Will Lacker / Resolute

REQUISITIONED BY / AFFILIATION: Will Lacker / Resolute
 DATE: 10/29/20
 TIME: 15:14
 ACCEPTED BY / AFFILIATION: *[Signature]* / Fedex
 DATE: 10/29/20
 TIME: 15:14
 STATE / LOCATION: GA

TEMP IN C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
5.3				
4.5	Y	N		Y
3.2				

SAMPLER NAME AND SIGNATURE

PRINT NAME OF SAMPLER: Kevin Stephens / Will Lacker / Trent Geddy
 SIGNATURE OF SAMPLER: *[Signature]*
 DATE SIGNED: 10/29/20



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A		Section B		Section C	
Required Client Information: Company: Georgia Power Address: 1000 Westborough Parkway W-200, Woodstock, GA 30188 Email: veronica.fay@resolutions.com Phone: (404)338-4189 Fax: _____ Invoiced Date/Due: _____		Required Project Information: Report To: Veronica Fay Copy To: _____ Purchase Order #: _____ Project Name: Mckinnis Surface Water Project #: _____		Invoice Information: Attention: _____ Company Name: _____ Address: _____ Project Manager: kevin.hortong@pacorials.com Price Profile #: 10788	
Regulatory Agency: _____ State / Location: GA					

ITEM #	SAMPLE ID	MATRIX CODE (5 digit valid codes to left)	SAMPLE TYPE (G+CRAB C-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Requested Analysis Returned (Y/N)	Residual Chlorine (Y/N)	PH
				START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other				
1	TH-1HS	WT G	G	10/25/20	0914		3	2	1									PH 7.19
2	TH-1HB	WT G	G	10/25/20	0922		3	2	1									PH 7.25
3	TH-1L	WT G	G	10/25/20	0916		3	2	1									PH 7.66
4	TH-2HS	WT G	G	10/25/20	0936		3	2	1									PH 7.37
5	TH-2HB	WT G	G	10/25/20	0950		3	2	1									PH 7.34
6	TH-2L	WT G	G	10/25/20	1541		3	2	1									PH 7.49
7	TH-3HS	WT G	G	10/25/20	0959		3	2	1									PH 7.37
8	TH-3HB	WT G	G	10/25/20	1006		3	2	1									PH 7.29
9	TH-3L	WT G	G	10/25/20	1526		3	2	1									PH 7.49
10	TH-4HS	WT G	G	10/25/20	1025		3	2	1									PH 7.46
11	TH-4HB	WT G	G	10/25/20	1033		3	2	1									PH 7.33
12	TH-4L	WT G	G	10/25/20	1503		3	2	1									PH 7.53

ADDITIONAL COMMENTS		REQUISITIONED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		SAMPLE CONDITIONS	
Will Leaker / Resolute		10/25/20 1314		Felix S. Johnson / Pace		10/25/20 1314	
						TEMP in C: 4.8	
						Received on Ice (Y/N): V	
						Custody Sealed/Cooled (Y/N): N	
						Samples Intact (Y/N): Y	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Kevin Stephenson, Will Leaker, Trent Geddon
 SIGNATURE of SAMPLER: *[Signatures]*
 DATE Signed: 10/25/20

032
033
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043



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
 Client Information:
 Name: Georgia Power
 Address: 1000 Weatherstone Parkway
 City: Woodstock, GA 30188
 Phone: (404) 350-8461
 Fax: (404) 350-8461
 E-mail: vertical.fy@ge.com
 Project Name: MARIENS Surface Water
 Project #: 10768

Section B
 Required Provider Information:
 Report To: Veronica Fay
 Copy To:
 Company Name:
 Address:
 Phone Number:
 Project Manager: Kevin.Hofing@paceanalytical.com
 Pace Profile #: 10768

Page: 5 of 5

Section C
 Invoice Information:
 Attention:
 Regulatory Agency:
 State / Location: GA

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9, ., -) Sample IDs must be unique	MATRIX CODE (See valid codes to 10)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyse Test	Metals*	Cl, F, SO4/alk	TDS	Residual Chlorine (Y/N)	pH
				START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other						
1	BG-1LT	WT G	G	10/29/20	12:53		3	2	1										7.33	
2	BG-2HT	WT G	G	10/29/20	17:20		3	2	1										7.40	
3	DUP-1	WT G	G	10/29/20	-		3	2	1											
4	DUP-2	WT G	G	10/29/20	-		3	2	1											
5	DUP-3	WT G	G	10/29/20	-		3	2	1											
6	DUP-4	WT G	G	10/29/20	-		3	2	1											
7	DUP-5	WT G	G	10/29/20	-		3	2	1											
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS
 RELINQUISHED BY / AFFILIATION: Will Lanker / Resolute
 DATE: 10/29/20
 TIME: 1314
 ACCEPTED BY / AFFILIATION: *[Signature]*
 DATE: 10/29/20
 TIME: 1314

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Kevin Stephenson
 SIGNATURE of SAMPLER: *[Signature]*
 DATE signed: 10/29/20

SAMPLE CONDITIONS
 TEMP In C: 5.3
 Received on Ice (Y/N):
 Custody Sealed (Y/N):
 Cooler (Y/N):
 Samples Intact (Y/N):

044
 045
 046
 047
 048
 049
 050

November 30, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on November 19, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92507147001	T3-1HT	Water	11/17/20 10:44	11/19/20 10:30
92507147002	T3-2HT	Water	11/17/20 10:55	11/19/20 10:30
92507147003	T3-2HTS	Water	11/17/20 10:04	11/19/20 10:30
92507147004	T3-2LT	Water	11/18/20 09:24	11/19/20 10:30
92507147005	T3-3HT	Water	11/17/20 10:30	11/19/20 10:30
92507147006	T3-3HTS	Water	11/17/20 10:21	11/19/20 10:30
92507147007	T3-3LT	Water	11/18/20 09:12	11/19/20 10:30
92507147008	T3-4HT	Water	11/17/20 11:18	11/19/20 10:30
92507147009	T3-4HTS	Water	11/17/20 11:08	11/19/20 10:30
92507147010	T3-4LT	Water	11/18/20 08:58	11/19/20 10:30
92507147011	T4-4HB	Water	11/17/20 11:58	11/19/20 10:30
92507147012	BG-1LT	Water	11/18/20 08:38	11/19/20 10:30
92507147013	BG-2HT	Water	11/17/20 13:37	11/19/20 10:30
92507147014	DUP-1	Water	11/17/20 00:00	11/19/20 10:30
92507147015	DUP-2	Water	11/18/20 00:00	11/19/20 10:30
92507147016	FBL111820	Water	11/18/20 11:42	11/19/20 10:30
92507147017	EQBL111820	Water	11/18/20 11:45	11/19/20 10:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92507147001	T3-1HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92507147002	T3-2HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92507147003	T3-2HTS	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92507147004	T3-2LT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	MJP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92507147005	T3-3HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92507147006	T3-3HTS	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92507147007	T3-3LT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	MJP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92507147008	T3-4HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92507147009	T3-4HTS	SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
92507147010	T3-4LT	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	MJP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
92507147011	T4-4HB	EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
92507147012	BG-1LT	SM 2540C-2011	MJP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	MJP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
92507147013	BG-2HT	EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
92507147014	DUP-1	SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	RED	1	PASI-A
92507147015	DUP-2	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	MJP	1	PASI-A

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92507147016	FBL111820	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	MJP	1	PASI-A
92507147017	EQBL111820	EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
		EPA 6010D	SH1	4	PASI-A
		EPA 6020B	JOR	3	PASI-A
		SM 2320B-2011	ECH	3	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92507147001	T3-1HT					
	Performed by	CUSTOME			11/19/20 14:07	
		R				
	pH	7.43	Std. Units		11/19/20 14:07	
EPA 6010D	Calcium	17.5	mg/L	0.10	11/24/20 06:08	
EPA 6010D	Magnesium	57.4	mg/L	0.10	11/24/20 06:08	
EPA 6010D	Potassium	17.4	mg/L	5.0	11/24/20 06:08	
EPA 6010D	Sodium	6760	mg/L	2500	11/24/20 04:53	
EPA 6020B	Arsenic	0.0019J	mg/L	0.0050	11/20/20 13:40	
EPA 6020B	Boron	2.4	mg/L	1.2	11/20/20 10:43	M6
EPA 6020B	Lithium	0.093	mg/L	0.030	11/20/20 13:40	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	110	mg/L	5.0	11/25/20 14:46	
SM 2320B-2011	Alkalinity, Total as CaCO3	110	mg/L	5.0	11/25/20 14:46	
SM 2540C-2011	Total Dissolved Solids	20900	mg/L	2500	11/23/20 15:51	
EPA 300.0 Rev 2.1 1993	Chloride	10600	mg/L	200	11/21/20 07:08	M6, R1
EPA 300.0 Rev 2.1 1993	Sulfate	1330	mg/L	200	11/21/20 07:08	M6, R1
92507147002	T3-2HT					
	Performed by	CUSTOME			11/19/20 14:07	
		R				
	pH	7.39	Std. Units		11/19/20 14:07	
EPA 6010D	Calcium	183	mg/L	1.0	11/24/20 06:11	
EPA 6010D	Magnesium	633	mg/L	1.0	11/24/20 06:11	
EPA 6010D	Potassium	181	mg/L	50.0	11/24/20 06:11	
EPA 6010D	Sodium	6800	mg/L	2500	11/24/20 04:56	
EPA 6020B	Arsenic	0.0022J	mg/L	0.0050	11/20/20 14:00	
EPA 6020B	Boron	2.6	mg/L	1.2	11/20/20 10:58	
EPA 6020B	Lithium	0.093	mg/L	0.030	11/20/20 14:00	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	110	mg/L	5.0	11/25/20 15:16	
SM 2320B-2011	Alkalinity, Total as CaCO3	110	mg/L	5.0	11/25/20 15:16	
SM 2540C-2011	Total Dissolved Solids	20300	mg/L	2500	11/23/20 15:51	
EPA 300.0 Rev 2.1 1993	Chloride	10900	mg/L	200	11/20/20 14:31	
EPA 300.0 Rev 2.1 1993	Sulfate	1400	mg/L	200	11/20/20 14:31	
92507147003	T3-2HTS					
	Performed by	CUSTOME			11/19/20 14:08	
		R				
	pH	7.43	Std. Units		11/19/20 14:08	
EPA 6010D	Calcium	178	mg/L	1.0	11/24/20 06:15	
EPA 6010D	Magnesium	585	mg/L	1.0	11/24/20 06:15	
EPA 6010D	Potassium	176	mg/L	50.0	11/24/20 06:15	
EPA 6010D	Sodium	6900	mg/L	2500	11/24/20 05:12	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/20/20 14:04	
EPA 6020B	Boron	2.7	mg/L	1.2	11/20/20 11:02	
EPA 6020B	Lithium	0.099	mg/L	0.030	11/20/20 14:04	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	111	mg/L	5.0	11/25/20 15:29	
SM 2320B-2011	Alkalinity, Total as CaCO3	111	mg/L	5.0	11/25/20 15:29	
SM 2540C-2011	Total Dissolved Solids	22000	mg/L	2500	11/23/20 15:51	
EPA 300.0 Rev 2.1 1993	Chloride	10800	mg/L	200	11/20/20 14:53	
EPA 300.0 Rev 2.1 1993	Sulfate	1370	mg/L	200	11/20/20 14:53	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92507147004	T3-2LT					
	Performed by	CUSTOME			11/19/20 14:08	
		R				
	pH	7.60	Std. Units		11/19/20 14:08	
EPA 6010D	Calcium	157	mg/L	1.0	11/24/20 06:18	
EPA 6010D	Magnesium	545	mg/L	1.0	11/24/20 06:18	
EPA 6010D	Potassium	158	mg/L	50.0	11/24/20 06:18	
EPA 6010D	Sodium	6800	mg/L	2500	11/24/20 05:15	
EPA 6020B	Arsenic	0.0023J	mg/L	0.0050	11/20/20 15:25	
EPA 6020B	Boron	2.5	mg/L	1.2	11/20/20 11:06	
EPA 6020B	Lithium	0.095	mg/L	0.030	11/20/20 15:25	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	112	mg/L	5.0	11/25/20 15:41	
SM 2320B-2011	Alkalinity, Total as CaCO3	112	mg/L	5.0	11/25/20 15:41	
SM 2540C-2011	Total Dissolved Solids	24000	mg/L	2500	11/24/20 10:28	
EPA 300.0 Rev 2.1 1993	Chloride	11000	mg/L	200	11/20/20 15:15	
EPA 300.0 Rev 2.1 1993	Sulfate	1420	mg/L	200	11/20/20 15:15	
92507147005	T3-3HT					
	Performed by	CUSTOME			11/19/20 14:08	
		R				
	pH	7.37	Std. Units		11/19/20 14:08	
EPA 6010D	Calcium	171	mg/L	1.0	11/24/20 06:21	
EPA 6010D	Magnesium	571	mg/L	1.0	11/24/20 06:21	
EPA 6010D	Potassium	172	mg/L	50.0	11/24/20 06:21	
EPA 6010D	Sodium	6800	mg/L	2500	11/24/20 05:19	
EPA 6020B	Arsenic	0.0022J	mg/L	0.0050	11/20/20 15:28	
EPA 6020B	Boron	2.7	mg/L	1.2	11/20/20 11:10	
EPA 6020B	Lithium	0.093	mg/L	0.030	11/20/20 15:28	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	111	mg/L	5.0	11/25/20 15:53	
SM 2320B-2011	Alkalinity, Total as CaCO3	111	mg/L	5.0	11/25/20 15:53	
SM 2540C-2011	Total Dissolved Solids	21900	mg/L	2500	11/23/20 15:52	
EPA 300.0 Rev 2.1 1993	Chloride	11200	mg/L	200	11/20/20 15:37	
EPA 300.0 Rev 2.1 1993	Sulfate	1430	mg/L	200	11/20/20 15:37	
92507147006	T3-3HTS					
	Performed by	CUSTOME			11/19/20 14:08	
		R				
	pH	7.50	Std. Units		11/19/20 14:08	
EPA 6010D	Calcium	153	mg/L	1.0	11/24/20 06:31	
EPA 6010D	Magnesium	529	mg/L	1.0	11/24/20 06:31	
EPA 6010D	Potassium	154	mg/L	50.0	11/24/20 06:31	
EPA 6010D	Sodium	6710	mg/L	2500	11/24/20 05:22	
EPA 6020B	Arsenic	0.0020J	mg/L	0.0050	11/20/20 15:32	
EPA 6020B	Boron	2.5	mg/L	1.2	11/20/20 11:21	
EPA 6020B	Lithium	0.090	mg/L	0.030	11/20/20 15:32	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	113	mg/L	5.0	11/25/20 16:05	
SM 2320B-2011	Alkalinity, Total as CaCO3	113	mg/L	5.0	11/25/20 16:05	
SM 2540C-2011	Total Dissolved Solids	20400	mg/L	2500	11/23/20 15:52	
EPA 300.0 Rev 2.1 1993	Chloride	11000	mg/L	200	11/20/20 15:58	
EPA 300.0 Rev 2.1 1993	Sulfate	1400	mg/L	200	11/20/20 15:58	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92507147007	T3-3LT					
	Performed by	CUSTOME			11/19/20 14:08	
		R				
	pH	7.58	Std. Units		11/19/20 14:08	
EPA 6010D	Calcium	154	mg/L	1.0	11/24/20 06:35	
EPA 6010D	Magnesium	514	mg/L	1.0	11/24/20 06:35	
EPA 6010D	Potassium	157	mg/L	50.0	11/24/20 06:35	
EPA 6010D	Sodium	6580	mg/L	2500	11/24/20 05:25	
EPA 6020B	Arsenic	0.0020J	mg/L	0.0050	11/20/20 15:36	
EPA 6020B	Boron	2.4	mg/L	1.2	11/20/20 11:25	
EPA 6020B	Lithium	0.093	mg/L	0.030	11/20/20 15:36	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	110	mg/L	5.0	11/30/20 10:26	
SM 2320B-2011	Alkalinity, Total as CaCO3	110	mg/L	5.0	11/30/20 10:26	
SM 2540C-2011	Total Dissolved Solids	26100	mg/L	2500	11/24/20 10:28	
EPA 300.0 Rev 2.1 1993	Chloride	11000	mg/L	200	11/20/20 16:48	
EPA 300.0 Rev 2.1 1993	Sulfate	1370	mg/L	200	11/20/20 16:48	
92507147008	T3-4HT					
	Performed by	CUSTOME			11/19/20 14:09	
		R				
	pH	7.42	Std. Units		11/19/20 14:09	
EPA 6010D	Calcium	161	mg/L	1.0	11/24/20 06:38	
EPA 6010D	Magnesium	560	mg/L	1.0	11/24/20 06:38	
EPA 6010D	Potassium	165	mg/L	50.0	11/24/20 06:38	
EPA 6010D	Sodium	6850	mg/L	2500	11/24/20 05:29	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	11/20/20 15:40	
EPA 6020B	Boron	2.8	mg/L	1.2	11/20/20 11:29	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/20/20 15:40	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	114	mg/L	5.0	11/30/20 10:39	
SM 2320B-2011	Alkalinity, Total as CaCO3	114	mg/L	5.0	11/30/20 10:39	
SM 2540C-2011	Total Dissolved Solids	22700	mg/L	2500	11/23/20 15:52	
EPA 300.0 Rev 2.1 1993	Chloride	11300	mg/L	200	11/20/20 17:10	
EPA 300.0 Rev 2.1 1993	Sulfate	1480	mg/L	200	11/20/20 17:10	
92507147009	T3-4HTS					
	Performed by	CUSTOME			11/19/20 14:09	
		R				
	pH	7.48	Std. Units		11/19/20 14:09	
EPA 6010D	Calcium	167	mg/L	1.0	11/24/20 06:41	
EPA 6010D	Magnesium	561	mg/L	1.0	11/24/20 06:41	
EPA 6010D	Potassium	170	mg/L	50.0	11/24/20 06:41	
EPA 6010D	Sodium	7080	mg/L	2500	11/24/20 05:32	
EPA 6020B	Arsenic	0.0025J	mg/L	0.0050	11/20/20 15:44	
EPA 6020B	Boron	2.7	mg/L	1.2	11/20/20 11:33	
EPA 6020B	Lithium	0.10	mg/L	0.030	11/20/20 15:44	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	114	mg/L	5.0	11/30/20 10:51	
SM 2320B-2011	Alkalinity, Total as CaCO3	114	mg/L	5.0	11/30/20 10:51	
SM 2540C-2011	Total Dissolved Solids	21900	mg/L	2500	11/23/20 15:52	
EPA 300.0 Rev 2.1 1993	Chloride	11500	mg/L	200	11/20/20 17:32	
EPA 300.0 Rev 2.1 1993	Sulfate	1500	mg/L	200	11/20/20 17:32	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92507147010	T3-4LT					
	Performed by	CUSTOME			11/19/20 14:09	
		R				
	pH	7.54	Std. Units		11/19/20 14:09	
EPA 6010D	Calcium	156	mg/L	1.0	11/24/20 06:45	
EPA 6010D	Magnesium	524	mg/L	1.0	11/24/20 06:45	
EPA 6010D	Potassium	160	mg/L	50.0	11/24/20 06:45	
EPA 6010D	Sodium	6680	mg/L	2500	11/24/20 05:35	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/20/20 15:48	
EPA 6020B	Boron	2.7	mg/L	1.2	11/20/20 11:37	
EPA 6020B	Lithium	0.099	mg/L	0.030	11/20/20 15:48	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	112	mg/L	5.0	11/30/20 11:02	
SM 2320B-2011	Alkalinity, Total as CaCO3	112	mg/L	5.0	11/30/20 11:02	
SM 2540C-2011	Total Dissolved Solids	32200	mg/L	2500	11/24/20 10:28	
EPA 300.0 Rev 2.1 1993	Chloride	11300	mg/L	200	11/20/20 17:54	
EPA 300.0 Rev 2.1 1993	Sulfate	1490	mg/L	200	11/20/20 17:54	
92507147011	T4-4HB					
	Performed by	CUSTOME			11/19/20 14:09	
		R				
	pH	7.49	Std. Units		11/19/20 14:09	
EPA 6010D	Calcium	164	mg/L	1.0	11/24/20 06:48	
EPA 6010D	Magnesium	567	mg/L	1.0	11/24/20 06:48	
EPA 6010D	Potassium	171	mg/L	50.0	11/24/20 06:48	
EPA 6010D	Sodium	7080	mg/L	2500	11/24/20 05:38	
EPA 6020B	Arsenic	0.0025J	mg/L	0.0050	11/20/20 15:52	
EPA 6020B	Boron	2.9	mg/L	1.2	11/20/20 11:41	
EPA 6020B	Lithium	0.11	mg/L	0.030	11/20/20 15:52	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	117	mg/L	5.0	11/30/20 11:14	
SM 2320B-2011	Alkalinity, Total as CaCO3	117	mg/L	5.0	11/30/20 11:14	
SM 2540C-2011	Total Dissolved Solids	23900	mg/L	2500	11/23/20 15:52	
EPA 300.0 Rev 2.1 1993	Chloride	12400	mg/L	200	11/20/20 18:16	M6
EPA 300.0 Rev 2.1 1993	Sulfate	1650	mg/L	200	11/20/20 18:16	M6
92507147012	BG-1LT					
	Performed by	CUSTOME			11/19/20 14:10	
		R				
	pH	7.45	Std. Units		11/19/20 14:10	
EPA 6010D	Calcium	138	mg/L	1.0	11/24/20 06:52	
EPA 6010D	Magnesium	492	mg/L	1.0	11/24/20 06:52	
EPA 6010D	Potassium	145	mg/L	50.0	11/24/20 06:52	
EPA 6010D	Sodium	6810	mg/L	2500	11/24/20 05:42	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/20/20 15:55	
EPA 6020B	Boron	2.7	mg/L	1.2	11/20/20 11:45	
EPA 6020B	Lithium	0.11	mg/L	0.030	11/20/20 15:55	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	114	mg/L	5.0	11/30/20 11:47	
SM 2320B-2011	Alkalinity, Total as CaCO3	114	mg/L	5.0	11/30/20 11:47	
SM 2540C-2011	Total Dissolved Solids	27100	mg/L	2500	11/24/20 10:28	
EPA 300.0 Rev 2.1 1993	Chloride	11500	mg/L	200	11/20/20 19:22	
EPA 300.0 Rev 2.1 1993	Sulfate	1530	mg/L	200	11/20/20 19:22	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92507147013	BG-2HT					
	Performed by	CUSTOME			11/19/20 14:10	
		R				
	pH	7.49	Std. Units		11/19/20 14:10	
EPA 6010D	Calcium	154	mg/L	1.0	11/24/20 06:55	
EPA 6010D	Magnesium	553	mg/L	1.0	11/24/20 06:55	
EPA 6010D	Potassium	161	mg/L	50.0	11/24/20 06:55	
EPA 6010D	Sodium	7310	mg/L	2500	11/24/20 05:51	
EPA 6020B	Arsenic	0.0033J	mg/L	0.0050	11/20/20 15:59	
EPA 6020B	Boron	2.9	mg/L	1.2	11/20/20 11:48	
EPA 6020B	Lithium	0.11	mg/L	0.030	11/20/20 15:59	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	116	mg/L	5.0	11/30/20 11:57	
SM 2320B-2011	Alkalinity, Total as CaCO3	116	mg/L	5.0	11/30/20 11:57	
SM 2540C-2011	Total Dissolved Solids	23800	mg/L	2500	11/23/20 16:33	
EPA 300.0 Rev 2.1 1993	Chloride	12300	mg/L	200	11/20/20 19:44	
EPA 300.0 Rev 2.1 1993	Sulfate	1630	mg/L	200	11/20/20 19:44	
92507147014	DUP-1					
EPA 6010D	Calcium	174	mg/L	1.0	11/24/20 06:58	
EPA 6010D	Magnesium	602	mg/L	1.0	11/24/20 06:58	
EPA 6010D	Potassium	177	mg/L	50.0	11/24/20 06:58	
EPA 6010D	Sodium	6880	mg/L	2500	11/24/20 05:55	
EPA 6020B	Arsenic	0.0022J	mg/L	0.0050	11/20/20 18:41	
EPA 6020B	Boron	2.8	mg/L	1.2	11/20/20 11:52	
EPA 6020B	Lithium	0.11J	mg/L	0.030	11/20/20 11:52	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	112	mg/L	5.0	11/30/20 12:08	
SM 2320B-2011	Alkalinity, Total as CaCO3	112	mg/L	5.0	11/30/20 12:08	
SM 2540C-2011	Total Dissolved Solids	22300	mg/L	2500	11/23/20 16:33	
EPA 300.0 Rev 2.1 1993	Chloride	11500	mg/L	200	11/20/20 20:06	
EPA 300.0 Rev 2.1 1993	Sulfate	1510	mg/L	200	11/20/20 20:06	
92507147015	DUP-2					
EPA 6010D	Calcium	159	mg/L	1.0	11/24/20 07:02	
EPA 6010D	Magnesium	549	mg/L	1.0	11/24/20 07:02	
EPA 6010D	Potassium	164	mg/L	50.0	11/24/20 07:02	
EPA 6010D	Sodium	6600	mg/L	2500	11/24/20 05:58	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	11/20/20 18:45	
EPA 6020B	Boron	2.6	mg/L	1.2	11/20/20 11:56	
EPA 6020B	Lithium	0.095J	mg/L	0.030	11/20/20 11:56	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	113	mg/L	5.0	11/30/20 12:32	
SM 2320B-2011	Alkalinity, Total as CaCO3	113	mg/L	5.0	11/30/20 12:32	
SM 2540C-2011	Total Dissolved Solids	31500	mg/L	2500	11/24/20 10:28	
EPA 300.0 Rev 2.1 1993	Chloride	11200	mg/L	200	11/20/20 20:56	
EPA 300.0 Rev 2.1 1993	Sulfate	1410	mg/L	200	11/20/20 20:56	
92507147016	FBL111820					
SM 2540C-2011	Total Dissolved Solids	41.0	mg/L	25.0	11/24/20 10:28	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: T3-1HT		Lab ID: 92507147001		Collected: 11/17/20 10:44		Received: 11/19/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:07		
pH	7.43	Std. Units			1		11/19/20 14:07		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	17.5	mg/L	0.10	0.094	1	11/20/20 01:59	11/24/20 06:08	7440-70-2	
Magnesium	57.4	mg/L	0.10	0.068	1	11/20/20 01:59	11/24/20 06:08	7439-95-4	
Potassium	17.4	mg/L	5.0	3.0	1	11/20/20 01:59	11/24/20 06:08	7440-09-7	
Sodium	6760	mg/L	2500	305	500	11/20/20 01:59	11/24/20 04:53	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0019J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 13:40	7440-38-2	
Boron	2.4	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 10:43	7440-42-8	M6
Lithium	0.093	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 13:40	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	110	mg/L	5.0	5.0	1		11/25/20 14:46		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/25/20 14:46		
Alkalinity, Total as CaCO ₃	110	mg/L	5.0	5.0	1		11/25/20 14:46		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20900	mg/L	2500	2500	1		11/23/20 15:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	10600	mg/L	200	120	200		11/21/20 07:08	16887-00-6	M6,R1
Fluoride	ND	mg/L	0.10	0.050	1		11/20/20 13:18	16984-48-8	M1,M6
Sulfate	1330	mg/L	200	100	200		11/21/20 07:08	14808-79-8	M6,R1

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: T3-2HT		Lab ID: 92507147002		Collected: 11/17/20 10:55		Received: 11/19/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:07		
pH	7.39	Std. Units			1		11/19/20 14:07		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	183	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:11	7440-70-2	
Magnesium	633	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:11	7439-95-4	
Potassium	181	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:11	7440-09-7	
Sodium	6800	mg/L	2500	305	500	11/20/20 01:59	11/24/20 04:56	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0022J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 14:00	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 10:58	7440-42-8	
Lithium	0.093	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 14:00	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	110	mg/L	5.0	5.0	1		11/25/20 15:16		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/25/20 15:16		
Alkalinity, Total as CaCO ₃	110	mg/L	5.0	5.0	1		11/25/20 15:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20300	mg/L	2500	2500	1		11/23/20 15:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	10900	mg/L	200	120	200		11/20/20 14:31	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 14:31	16984-48-8	D3
Sulfate	1400	mg/L	200	100	200		11/20/20 14:31	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: T3-2HTS		Lab ID: 92507147003		Collected: 11/17/20 10:04	Received: 11/19/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:08		
pH	7.43	Std. Units			1		11/19/20 14:08		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	178	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:15	7440-70-2	
Magnesium	585	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:15	7439-95-4	
Potassium	176	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:15	7440-09-7	
Sodium	6900	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:12	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 14:04	7440-38-2	
Boron	2.7	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:02	7440-42-8	
Lithium	0.099	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 14:04	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	111	mg/L	5.0	5.0	1		11/25/20 15:29		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/25/20 15:29		
Alkalinity, Total as CaCO ₃	111	mg/L	5.0	5.0	1		11/25/20 15:29		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	22000	mg/L	2500	2500	1		11/23/20 15:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	10800	mg/L	200	120	200		11/20/20 14:53	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 14:53	16984-48-8	D3
Sulfate	1370	mg/L	200	100	200		11/20/20 14:53	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: T3-2LT		Lab ID: 92507147004		Collected: 11/18/20 09:24		Received: 11/19/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:08		
pH	7.60	Std. Units			1		11/19/20 14:08		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	157	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:18	7440-70-2	
Magnesium	545	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:18	7439-95-4	
Potassium	158	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:18	7440-09-7	
Sodium	6800	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:15	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0023J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 15:25	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:06	7440-42-8	
Lithium	0.095	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 15:25	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	112	mg/L	5.0	5.0	1		11/25/20 15:41		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/25/20 15:41		
Alkalinity, Total as CaCO ₃	112	mg/L	5.0	5.0	1		11/25/20 15:41		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	24000	mg/L	2500	2500	1		11/24/20 10:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	11000	mg/L	200	120	200		11/20/20 15:15	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 15:15	16984-48-8	D3
Sulfate	1420	mg/L	200	100	200		11/20/20 15:15	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: T3-3HT		Lab ID: 92507147005		Collected: 11/17/20 10:30	Received: 11/19/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:08		
pH	7.37	Std. Units			1		11/19/20 14:08		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	171	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:21	7440-70-2	
Magnesium	571	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:21	7439-95-4	
Potassium	172	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:21	7440-09-7	
Sodium	6800	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:19	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0022J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 15:28	7440-38-2	
Boron	2.7	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:10	7440-42-8	
Lithium	0.093	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 15:28	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	111	mg/L	5.0	5.0	1		11/25/20 15:53		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/25/20 15:53		
Alkalinity, Total as CaCO3	111	mg/L	5.0	5.0	1		11/25/20 15:53		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	21900	mg/L	2500	2500	1		11/23/20 15:52		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	11200	mg/L	200	120	200		11/20/20 15:37	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 15:37	16984-48-8	D3
Sulfate	1430	mg/L	200	100	200		11/20/20 15:37	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: T3-3HTS		Lab ID: 92507147006		Collected: 11/17/20 10:21	Received: 11/19/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:08		
pH	7.50	Std. Units			1		11/19/20 14:08		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	153	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:31	7440-70-2	
Magnesium	529	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:31	7439-95-4	
Potassium	154	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:31	7440-09-7	
Sodium	6710	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:22	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0020J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 15:32	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:21	7440-42-8	
Lithium	0.090	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 15:32	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	113	mg/L	5.0	5.0	1		11/25/20 16:05		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/25/20 16:05		
Alkalinity, Total as CaCO ₃	113	mg/L	5.0	5.0	1		11/25/20 16:05		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20400	mg/L	2500	2500	1		11/23/20 15:52		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11000	mg/L	200	120	200		11/20/20 15:58	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 15:58	16984-48-8	D3
Sulfate	1400	mg/L	200	100	200		11/20/20 15:58	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

Sample: T3-3LT		Lab ID: 92507147007		Collected: 11/18/20 09:12	Received: 11/19/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:08		
pH	7.58	Std. Units			1		11/19/20 14:08		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	154	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:35	7440-70-2	
Magnesium	514	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:35	7439-95-4	
Potassium	157	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:35	7440-09-7	
Sodium	6580	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:25	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0020J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 15:36	7440-38-2	
Boron	2.4	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:25	7440-42-8	
Lithium	0.093	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 15:36	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	110	mg/L	5.0	5.0	1		11/30/20 10:26		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 10:26		
Alkalinity, Total as CaCO ₃	110	mg/L	5.0	5.0	1		11/30/20 10:26		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	26100	mg/L	2500	2500	1		11/24/20 10:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11000	mg/L	200	120	200		11/20/20 16:48	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 16:48	16984-48-8	D3
Sulfate	1370	mg/L	200	100	200		11/20/20 16:48	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: T3-4HT **Lab ID:** 92507147008 Collected: 11/17/20 11:18 Received: 11/19/20 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:09		
pH	7.42	Std. Units			1		11/19/20 14:09		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	161	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:38	7440-70-2	
Magnesium	560	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:38	7439-95-4	
Potassium	165	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:38	7440-09-7	
Sodium	6850	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:29	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 15:40	7440-38-2	
Boron	2.8	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:29	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 15:40	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	114	mg/L	5.0	5.0	1		11/30/20 10:39		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		11/30/20 10:39		
Alkalinity, Total as CaCO3	114	mg/L	5.0	5.0	1		11/30/20 10:39		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	22700	mg/L	2500	2500	1		11/23/20 15:52		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11300	mg/L	200	120	200		11/20/20 17:10	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 17:10	16984-48-8	D3
Sulfate	1480	mg/L	200	100	200		11/20/20 17:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: T3-4HTS		Lab ID: 92507147009		Collected: 11/17/20 11:08		Received: 11/19/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:09		
pH	7.48	Std. Units			1		11/19/20 14:09		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	167	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:41	7440-70-2	
Magnesium	561	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:41	7439-95-4	
Potassium	170	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:41	7440-09-7	
Sodium	7080	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:32	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0025J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 15:44	7440-38-2	
Boron	2.7	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:33	7440-42-8	
Lithium	0.10	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 15:44	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	114	mg/L	5.0	5.0	1		11/30/20 10:51		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 10:51		
Alkalinity, Total as CaCO ₃	114	mg/L	5.0	5.0	1		11/30/20 10:51		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	21900	mg/L	2500	2500	1		11/23/20 15:52		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11500	mg/L	200	120	200		11/20/20 17:32	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 17:32	16984-48-8	D3
Sulfate	1500	mg/L	200	100	200		11/20/20 17:32	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

Sample: T3-4LT		Lab ID: 92507147010		Collected: 11/18/20 08:58	Received: 11/19/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:09		
pH	7.54	Std. Units			1		11/19/20 14:09		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	156	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:45	7440-70-2	
Magnesium	524	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:45	7439-95-4	
Potassium	160	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:45	7440-09-7	
Sodium	6680	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:35	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 15:48	7440-38-2	
Boron	2.7	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:37	7440-42-8	
Lithium	0.099	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 15:48	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	112	mg/L	5.0	5.0	1		11/30/20 11:02		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 11:02		
Alkalinity, Total as CaCO ₃	112	mg/L	5.0	5.0	1		11/30/20 11:02		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	32200	mg/L	2500	2500	1		11/24/20 10:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11300	mg/L	200	120	200		11/20/20 17:54	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 17:54	16984-48-8	D3
Sulfate	1490	mg/L	200	100	200		11/20/20 17:54	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: T4-4HB		Lab ID: 92507147011		Collected: 11/17/20 11:58		Received: 11/19/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:09		
pH	7.49	Std. Units			1		11/19/20 14:09		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	164	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:48	7440-70-2	
Magnesium	567	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:48	7439-95-4	
Potassium	171	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:48	7440-09-7	
Sodium	7080	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:38	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0025J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 15:52	7440-38-2	
Boron	2.9	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:41	7440-42-8	
Lithium	0.11	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 15:52	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	117	mg/L	5.0	5.0	1		11/30/20 11:14		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 11:14		
Alkalinity, Total as CaCO ₃	117	mg/L	5.0	5.0	1		11/30/20 11:14		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	23900	mg/L	2500	2500	1		11/23/20 15:52		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	12400	mg/L	200	120	200		11/20/20 18:16	16887-00-6	M6
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 18:16	16984-48-8	D3,M6
Sulfate	1650	mg/L	200	100	200		11/20/20 18:16	14808-79-8	M6

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: BG-1LT		Lab ID: 92507147012		Collected: 11/18/20 08:38		Received: 11/19/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:10		
pH	7.45	Std. Units			1		11/19/20 14:10		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	138	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:52	7440-70-2	
Magnesium	492	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:52	7439-95-4	
Potassium	145	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:52	7440-09-7	
Sodium	6810	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:42	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 15:55	7440-38-2	
Boron	2.7	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:45	7440-42-8	
Lithium	0.11	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 15:55	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	114	mg/L	5.0	5.0	1		11/30/20 11:47		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 11:47		
Alkalinity, Total as CaCO ₃	114	mg/L	5.0	5.0	1		11/30/20 11:47		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	27100	mg/L	2500	2500	1		11/24/20 10:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	11500	mg/L	200	120	200		11/20/20 19:22	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 19:22	16984-48-8	D3
Sulfate	1530	mg/L	200	100	200		11/20/20 19:22	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: BG-2HT		Lab ID: 92507147013		Collected: 11/17/20 13:37		Received: 11/19/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		11/19/20 14:10		
pH	7.49	Std. Units			1		11/19/20 14:10		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	154	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:55	7440-70-2	
Magnesium	553	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:55	7439-95-4	
Potassium	161	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:55	7440-09-7	
Sodium	7310	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:51	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0033J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 15:59	7440-38-2	
Boron	2.9	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:48	7440-42-8	
Lithium	0.11	mg/L	0.030	0.0078	20	11/20/20 01:40	11/20/20 15:59	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	116	mg/L	5.0	5.0	1		11/30/20 11:57		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 11:57		
Alkalinity, Total as CaCO ₃	116	mg/L	5.0	5.0	1		11/30/20 11:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	23800	mg/L	2500	2500	1		11/23/20 16:33		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	12300	mg/L	200	120	200		11/20/20 19:44	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 19:44	16984-48-8	D3
Sulfate	1630	mg/L	200	100	200		11/20/20 19:44	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: DUP-1 **Lab ID:** 92507147014 Collected: 11/17/20 00:00 Received: 11/19/20 10:30 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	174	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 06:58	7440-70-2	
Magnesium	602	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 06:58	7439-95-4	
Potassium	177	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 06:58	7440-09-7	
Sodium	6880	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:55	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0022J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 18:41	7440-38-2	
Boron	2.8	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:52	7440-42-8	
Lithium	0.11J	mg/L	0.030	0.020	50	11/20/20 01:40	11/20/20 11:52	7439-93-2	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	112	mg/L	5.0	5.0	1		11/30/20 12:08		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 12:08		
Alkalinity, Total as CaCO ₃	112	mg/L	5.0	5.0	1		11/30/20 12:08		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	22300	mg/L	2500	2500	1		11/23/20 16:33		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	11500	mg/L	200	120	200		11/20/20 20:06	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 20:06	16984-48-8	D3
Sulfate	1510	mg/L	200	100	200		11/20/20 20:06	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: DUP-2		Lab ID: 92507147015		Collected: 11/18/20 00:00	Received: 11/19/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Calcium	159	mg/L	1.0	0.94	10	11/20/20 01:59	11/24/20 07:02	7440-70-2	
Magnesium	549	mg/L	1.0	0.68	10	11/20/20 01:59	11/24/20 07:02	7439-95-4	
Potassium	164	mg/L	50.0	30.4	10	11/20/20 01:59	11/24/20 07:02	7440-09-7	
Sodium	6600	mg/L	2500	305	500	11/20/20 01:59	11/24/20 05:58	7440-23-5	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	11/20/20 01:40	11/20/20 18:45	7440-38-2	
Boron	2.6	mg/L	1.2	0.31	50	11/20/20 01:40	11/20/20 11:56	7440-42-8	
Lithium	0.095J	mg/L	0.030	0.020	50	11/20/20 01:40	11/20/20 11:56	7439-93-2	
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity, Bicarbonate (CaCO ₃)	113	mg/L	5.0	5.0	1		11/30/20 12:32		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 12:32		
Alkalinity, Total as CaCO ₃	113	mg/L	5.0	5.0	1		11/30/20 12:32		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville							
Total Dissolved Solids	31500	mg/L	2500	2500	1		11/24/20 10:28		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	11200	mg/L	200	120	200		11/20/20 20:56	16887-00-6	
Fluoride	ND	mg/L	20.0	10.0	200		11/20/20 20:56	16984-48-8	D3
Sulfate	1410	mg/L	200	100	200		11/20/20 20:56	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Sample: FBL111820		Lab ID: 92507147016		Collected: 11/18/20 11:42	Received: 11/19/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Calcium	ND	mg/L	0.10	0.094	1	11/20/20 01:59	11/24/20 06:01	7440-70-2	
Magnesium	ND	mg/L	0.10	0.068	1	11/20/20 01:59	11/24/20 06:01	7439-95-4	
Potassium	ND	mg/L	5.0	3.0	1	11/20/20 01:59	11/24/20 06:01	7440-09-7	
Sodium	ND	mg/L	5.0	0.61	1	11/20/20 01:59	11/24/20 06:01	7440-23-5	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	ND	mg/L	0.0050	0.000087	1	11/20/20 01:40	11/20/20 12:16	7440-38-2	
Boron	ND	mg/L	0.025	0.0062	1	11/20/20 01:40	11/20/20 12:16	7440-42-8	
Lithium	ND	mg/L	0.030	0.00039	1	11/20/20 01:40	11/20/20 12:16	7439-93-2	
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 12:43		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 12:43		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		11/30/20 12:43		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville							
Total Dissolved Solids	41.0	mg/L	25.0	25.0	1		11/24/20 10:28		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	ND	mg/L	1.0	0.60	1		11/20/20 21:14	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/20/20 21:14	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		11/20/20 21:14	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

Sample: EQBL111820		Lab ID: 92507147017		Collected: 11/18/20 11:45	Received: 11/19/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Calcium	ND	mg/L	0.10	0.094	1	11/20/20 01:59	11/24/20 06:05	7440-70-2	
Magnesium	ND	mg/L	0.10	0.068	1	11/20/20 01:59	11/24/20 06:05	7439-95-4	
Potassium	ND	mg/L	5.0	3.0	1	11/20/20 01:59	11/24/20 06:05	7440-09-7	
Sodium	ND	mg/L	5.0	0.61	1	11/20/20 01:59	11/24/20 06:05	7440-23-5	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	ND	mg/L	0.0050	0.000087	1	11/20/20 01:40	11/20/20 12:19	7440-38-2	
Boron	ND	mg/L	0.025	0.0062	1	11/20/20 01:40	11/20/20 12:19	7440-42-8	
Lithium	ND	mg/L	0.030	0.00039	1	11/20/20 01:40	11/20/20 12:19	7439-93-2	
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 12:47		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		11/30/20 12:47		
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		11/30/20 12:47		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville							
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		11/29/20 15:19		H1
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	ND	mg/L	1.0	0.60	1		11/21/20 09:47	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		11/21/20 09:47	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		11/21/20 09:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

QC Batch:	581776	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010 MET
		Laboratory:	Pace Analytical Services - Asheville
Associated Lab Samples:	92507147001, 92507147002, 92507147003, 92507147004, 92507147005, 92507147006, 92507147007, 92507147008, 92507147009, 92507147010, 92507147011, 92507147012, 92507147013, 92507147014, 92507147015, 92507147016, 92507147017		

METHOD BLANK:	3077151	Matrix:	Water
Associated Lab Samples:	92507147001, 92507147002, 92507147003, 92507147004, 92507147005, 92507147006, 92507147007, 92507147008, 92507147009, 92507147010, 92507147011, 92507147012, 92507147013, 92507147014, 92507147015, 92507147016, 92507147017		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	11/24/20 04:49	
Magnesium	mg/L	ND	0.10	0.068	11/24/20 04:49	
Potassium	mg/L	ND	5.0	3.0	11/21/20 18:20	
Sodium	mg/L	ND	5.0	0.61	11/21/20 18:20	

LABORATORY CONTROL SAMPLE: 3077152						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	4.4	87	80-120	
Magnesium	mg/L	5	4.9	98	80-120	
Potassium	mg/L	5	4.3J	86	80-120	
Sodium	mg/L	5	4.4J	88	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3077153												3077154	
Parameter	Units	92507018009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
													Calcium
Magnesium	mg/L	778 ug/L	2.5	2.5	3.3	3.4	103	103	75-125	0	20		
Potassium	mg/L	ND	2.5	2.5	3.1J	3.1J	90	90	75-125		20		
Sodium	mg/L	1250J ug/L	2.5	2.5	3.6J	3.6J	94	93	75-125		20		

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QUALITY CONTROL DATA

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

QC Batch:	581778	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3010A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92507147001, 92507147002, 92507147003, 92507147004, 92507147005, 92507147006, 92507147007, 92507147008, 92507147009, 92507147010, 92507147011, 92507147012, 92507147013, 92507147014, 92507147015, 92507147016, 92507147017

METHOD BLANK: 3077159 Matrix: Water
Associated Lab Samples: 92507147001, 92507147002, 92507147003, 92507147004, 92507147005, 92507147006, 92507147007, 92507147008, 92507147009, 92507147010, 92507147011, 92507147012, 92507147013, 92507147014, 92507147015, 92507147016, 92507147017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	11/20/20 10:35	
Boron	mg/L	ND	0.025	0.0062	11/20/20 10:35	
Lithium	mg/L	ND	0.030	0.00039	11/20/20 10:35	

LABORATORY CONTROL SAMPLE: 3077160

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.011	106	80-120	
Boron	mg/L	0.05	0.051	103	80-120	
Lithium	mg/L	0.05	0.051	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3077161 3077162

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92507147001 Result	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	0.0019J	0.01	0.01	0.013	0.013	110	108	75-125	1	20
Boron	mg/L	2.4	0.05	0.05	2.5	2.5	182	130	75-125	1	20 M6
Lithium	mg/L	0.093	0.05	0.05	0.15	0.14	108	100	75-125	3	20

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QUALITY CONTROL DATA

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

QC Batch: 582912 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92507147001, 92507147002, 92507147003, 92507147004, 92507147005, 92507147006, 92507147007, 92507147008, 92507147009, 92507147010, 92507147011, 92507147012, 92507147013, 92507147014, 92507147015, 92507147016, 92507147017

METHOD BLANK: 3082345 Matrix: Water
Associated Lab Samples: 92507147001, 92507147002, 92507147003, 92507147004, 92507147005, 92507147006, 92507147007, 92507147008, 92507147009, 92507147010, 92507147011, 92507147012, 92507147013, 92507147014, 92507147015, 92507147016, 92507147017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	11/25/20 14:33	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	11/25/20 14:33	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	11/25/20 14:33	

LABORATORY CONTROL SAMPLE: 3082346

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	54.5	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082347 3082348

Parameter	Units	3082347		3082348		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	110	50	50	161	161	102	102	80-120	0	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082349 3082350

Parameter	Units	3082349		3082350		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Result	MSD Result						
Alkalinity, Total as CaCO3	mg/L	117	50	50	166	173	99	114	80-120	4	25

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QUALITY CONTROL DATA

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

QC Batch: 582312 Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92507147001, 92507147002, 92507147003, 92507147005, 92507147006, 92507147008, 92507147009, 92507147011

METHOD BLANK: 3079504 Matrix: Water
Associated Lab Samples: 92507147001, 92507147002, 92507147003, 92507147005, 92507147006, 92507147008, 92507147009, 92507147011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	11/23/20 15:47	

LABORATORY CONTROL SAMPLE: 3079505

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	256	102	90-110	

SAMPLE DUPLICATE: 3079506

Parameter	Units	92506695007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	281	283	1	25	

SAMPLE DUPLICATE: 3079507

Parameter	Units	92506817007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	109	118	8	25	

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QUALITY CONTROL DATA

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

QC Batch: 582419

Analysis Method: SM 2540C-2011

QC Batch Method: SM 2540C-2011

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92507147013, 92507147014

METHOD BLANK: 3080043

Matrix: Water

Associated Lab Samples: 92507147013, 92507147014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	11/23/20 16:32	

LABORATORY CONTROL SAMPLE: 3080044

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	246	98	90-110	

SAMPLE DUPLICATE: 3080045

Parameter	Units	92507147013 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	23800	23600	1	25	

SAMPLE DUPLICATE: 3080046

Parameter	Units	92507030008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	68.0	80.0	16	25	

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QUALITY CONTROL DATA

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

QC Batch: 582606 Analysis Method: SM 2540C-2011
 QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
 Laboratory: Pace Analytical Services - Asheville
 Associated Lab Samples: 92507147004, 92507147007, 92507147010, 92507147012, 92507147015, 92507147016

METHOD BLANK: 3080740 Matrix: Water
 Associated Lab Samples: 92507147004, 92507147007, 92507147010, 92507147012, 92507147015, 92507147016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	11/24/20 10:26	

LABORATORY CONTROL SAMPLE: 3080741

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	242	97	90-110	

SAMPLE DUPLICATE: 3080742

Parameter	Units	92507030018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	217	225	4	25	

SAMPLE DUPLICATE: 3080743

Parameter	Units	92507033008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	233	217	7	25	

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QUALITY CONTROL DATA

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

QC Batch: 582607	Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92507147017

METHOD BLANK: 3080746 Matrix: Water

Associated Lab Samples: 92507147017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	11/29/20 15:19	

LABORATORY CONTROL SAMPLE: 3080747

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	246	99	90-110	

SAMPLE DUPLICATE: 3080748

Parameter	Units	92507147017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		25	H1

SAMPLE DUPLICATE: 3080749

Parameter	Units	92507351002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	47900	50900	6	25	

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QUALITY CONTROL DATA

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

QC Batch: 581827 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92507147001, 92507147002, 92507147003, 92507147004, 92507147005, 92507147006, 92507147007, 92507147008, 92507147009, 92507147010, 92507147011, 92507147012, 92507147013, 92507147014, 92507147015, 92507147016, 92507147017

METHOD BLANK: 3077236 Matrix: Water
Associated Lab Samples: 92507147001, 92507147002, 92507147003, 92507147004, 92507147005, 92507147006, 92507147007, 92507147008, 92507147009, 92507147010, 92507147011, 92507147012, 92507147013, 92507147014, 92507147015, 92507147016, 92507147017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	11/20/20 12:51	
Fluoride	mg/L	ND	0.10	0.050	11/20/20 12:51	
Sulfate	mg/L	ND	1.0	0.50	11/20/20 12:51	

LABORATORY CONTROL SAMPLE: 3077237

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.7	101	90-110	
Fluoride	mg/L	2.5	2.3	90	90-110	
Sulfate	mg/L	50	50.6	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3077238 3077239

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92507147001 Result	Spike Conc.	Spike Conc.	Result						
Chloride	mg/L	10600	50	50	3170	11000	-14800	852	90-110	111	10 M6,R1
Fluoride	mg/L	ND	2.5	2.5	ND	ND	0	32	90-110		10 M1,M6
Sulfate	mg/L	1330	50	50	378	1450	-1890	245	90-110	117	10 M6,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3077240 3077241

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92507147011 Result	Spike Conc.	Spike Conc.	Result						
Chloride	mg/L	12400	50	50	12300	12400	-313	-79	90-110	1	10 M6
Fluoride	mg/L	ND	2.5	2.5	ND	ND	48	0	90-110		10 M6
Sulfate	mg/L	1650	50	50	1670	1710	43	126	90-110	2	10 M6

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QUALIFIERS

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.
A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
H1 Analysis conducted outside the EPA method holding time.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92507147001	T3-1HT				
92507147002	T3-2HT				
92507147003	T3-2HTS				
92507147004	T3-2LT				
92507147005	T3-3HT				
92507147006	T3-3HTS				
92507147007	T3-3LT				
92507147008	T3-4HT				
92507147009	T3-4HTS				
92507147010	T3-4LT				
92507147011	T4-4HB				
92507147012	BG-1LT				
92507147013	BG-2HT				
92507147001	T3-1HT	EPA 3010A	581776	EPA 6010D	581787
92507147002	T3-2HT	EPA 3010A	581776	EPA 6010D	581787
92507147003	T3-2HTS	EPA 3010A	581776	EPA 6010D	581787
92507147004	T3-2LT	EPA 3010A	581776	EPA 6010D	581787
92507147005	T3-3HT	EPA 3010A	581776	EPA 6010D	581787
92507147006	T3-3HTS	EPA 3010A	581776	EPA 6010D	581787
92507147007	T3-3LT	EPA 3010A	581776	EPA 6010D	581787
92507147008	T3-4HT	EPA 3010A	581776	EPA 6010D	581787
92507147009	T3-4HTS	EPA 3010A	581776	EPA 6010D	581787
92507147010	T3-4LT	EPA 3010A	581776	EPA 6010D	581787
92507147011	T4-4HB	EPA 3010A	581776	EPA 6010D	581787
92507147012	BG-1LT	EPA 3010A	581776	EPA 6010D	581787
92507147013	BG-2HT	EPA 3010A	581776	EPA 6010D	581787
92507147014	DUP-1	EPA 3010A	581776	EPA 6010D	581787
92507147015	DUP-2	EPA 3010A	581776	EPA 6010D	581787
92507147016	FBL111820	EPA 3010A	581776	EPA 6010D	581787
92507147017	EQBL111820	EPA 3010A	581776	EPA 6010D	581787
92507147001	T3-1HT	EPA 3010A	581778	EPA 6020B	581786
92507147002	T3-2HT	EPA 3010A	581778	EPA 6020B	581786
92507147003	T3-2HTS	EPA 3010A	581778	EPA 6020B	581786
92507147004	T3-2LT	EPA 3010A	581778	EPA 6020B	581786
92507147005	T3-3HT	EPA 3010A	581778	EPA 6020B	581786
92507147006	T3-3HTS	EPA 3010A	581778	EPA 6020B	581786
92507147007	T3-3LT	EPA 3010A	581778	EPA 6020B	581786
92507147008	T3-4HT	EPA 3010A	581778	EPA 6020B	581786
92507147009	T3-4HTS	EPA 3010A	581778	EPA 6020B	581786
92507147010	T3-4LT	EPA 3010A	581778	EPA 6020B	581786
92507147011	T4-4HB	EPA 3010A	581778	EPA 6020B	581786
92507147012	BG-1LT	EPA 3010A	581778	EPA 6020B	581786
92507147013	BG-2HT	EPA 3010A	581778	EPA 6020B	581786
92507147014	DUP-1	EPA 3010A	581778	EPA 6020B	581786
92507147015	DUP-2	EPA 3010A	581778	EPA 6020B	581786
92507147016	FBL111820	EPA 3010A	581778	EPA 6020B	581786
92507147017	EQBL111820	EPA 3010A	581778	EPA 6020B	581786

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS RESAMPLING
Pace Project No.: 92507147

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92507147001	T3-1HT	SM 2320B-2011	582912		
92507147002	T3-2HT	SM 2320B-2011	582912		
92507147003	T3-2HTS	SM 2320B-2011	582912		
92507147004	T3-2LT	SM 2320B-2011	582912		
92507147005	T3-3HT	SM 2320B-2011	582912		
92507147006	T3-3HTS	SM 2320B-2011	582912		
92507147007	T3-3LT	SM 2320B-2011	582912		
92507147008	T3-4HT	SM 2320B-2011	582912		
92507147009	T3-4HTS	SM 2320B-2011	582912		
92507147010	T3-4LT	SM 2320B-2011	582912		
92507147011	T4-4HB	SM 2320B-2011	582912		
92507147012	BG-1LT	SM 2320B-2011	582912		
92507147013	BG-2HT	SM 2320B-2011	582912		
92507147014	DUP-1	SM 2320B-2011	582912		
92507147015	DUP-2	SM 2320B-2011	582912		
92507147016	FBL111820	SM 2320B-2011	582912		
92507147017	EQBL111820	SM 2320B-2011	582912		
92507147001	T3-1HT	SM 2540C-2011	582312		
92507147002	T3-2HT	SM 2540C-2011	582312		
92507147003	T3-2HTS	SM 2540C-2011	582312		
92507147004	T3-2LT	SM 2540C-2011	582606		
92507147005	T3-3HT	SM 2540C-2011	582312		
92507147006	T3-3HTS	SM 2540C-2011	582312		
92507147007	T3-3LT	SM 2540C-2011	582606		
92507147008	T3-4HT	SM 2540C-2011	582312		
92507147009	T3-4HTS	SM 2540C-2011	582312		
92507147010	T3-4LT	SM 2540C-2011	582606		
92507147011	T4-4HB	SM 2540C-2011	582312		
92507147012	BG-1LT	SM 2540C-2011	582606		
92507147013	BG-2HT	SM 2540C-2011	582419		
92507147014	DUP-1	SM 2540C-2011	582419		
92507147015	DUP-2	SM 2540C-2011	582606		
92507147016	FBL111820	SM 2540C-2011	582606		
92507147017	EQBL111820	SM 2540C-2011	582607		
92507147001	T3-1HT	EPA 300.0 Rev 2.1 1993	581827		
92507147002	T3-2HT	EPA 300.0 Rev 2.1 1993	581827		
92507147003	T3-2HTS	EPA 300.0 Rev 2.1 1993	581827		
92507147004	T3-2LT	EPA 300.0 Rev 2.1 1993	581827		
92507147005	T3-3HT	EPA 300.0 Rev 2.1 1993	581827		
92507147006	T3-3HTS	EPA 300.0 Rev 2.1 1993	581827		
92507147007	T3-3LT	EPA 300.0 Rev 2.1 1993	581827		
92507147008	T3-4HT	EPA 300.0 Rev 2.1 1993	581827		
92507147009	T3-4HTS	EPA 300.0 Rev 2.1 1993	581827		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS RESAMPLING

Pace Project No.: 92507147

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92507147010	T3-4LT	EPA 300.0 Rev 2.1 1993	581827		
92507147011	T4-4HB	EPA 300.0 Rev 2.1 1993	581827		
92507147012	BG-1LT	EPA 300.0 Rev 2.1 1993	581827		
92507147013	BG-2HT	EPA 300.0 Rev 2.1 1993	581827		
92507147014	DUP-1	EPA 300.0 Rev 2.1 1993	581827		
92507147015	DUP-2	EPA 300.0 Rev 2.1 1993	581827		
92507147016	FBL111820	EPA 300.0 Rev 2.1 1993	581827		
92507147017	EQBL111820	EPA 300.0 Rev 2.1 1993	581827		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name:

GIA Powers

Project #:

WO#: 92507147



92507147

Courier: Commercial Fed Ex Pace UPS USPS Other: Client

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *SG*
11-19-20

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: *937001* Type of Ice: Wet Blue None

Cooler Temp: *1.2 + 0.10* Correction Factor: *0*
Add/Subtract (°C)

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): *1.2 + 0.10*

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <i>WT</i>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.07

Document Revised: October 28, 2020
 Page 2 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

Project #

WO# : 92507147

PM: KLH1

Due Date: 11/30/20

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-S035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
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pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project:

WO#: 92507147

PM: KLH1

Due Date: 11/30/20

CLIENT: GR-GR Power

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LTHg

**Bottom half of box is to list number of bottles

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP2U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1N-1 liter Amber HCl (pH < 2)	AG2U-250 mL Amber Unpreserved (N/A) (Cl-)	AG2S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG8T-40 mL VOA N2SSO3 (N/A)	VG9U-40 mL VOA Upd (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAX 16 vials over 1000-LORE kit (N/A)	V7GX 13 vials per kit VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)		BP3A-250 mL Plastic (NH4)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Sterilization vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)		
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pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 2

Section A Client Information: Agency: Georgia Power Address: 1003 Westchester Parkway W. 320, Woodstock, GA 30188 Phone: (404)358-8469 Fax Email: veronica.fry@resourcel.com Project Due Date:		Section B Required Project Information: Report To: Veronica Fry Copy To:		Section C Invoice Information: Attention: Company Name: Address: PO Box: PO Project Manager: Kevin Herring PO Profile #: 10768	
Purchase Order #: Mokuus Resampling Project Name: Mokuus Resampling Project #:		Regulatory Agency:		State / Location: GA	

#	SAMPLE ID One Character per box. (A-Z, 0-9, /, .)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyse Test	Y/N	Request Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	PH
				START DATE	END DATE			H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other					
1	T3-1HT	WTG	G	11/12/20	10:44	3	2	1										7.43	
2	T3-2HT	WTG	G	11/17/20	10:55	3	2	1										7.39	
3	T3-3HTS	WTG	G	11/17/20	10:04	3	2	1										7.43	
4	T3-2LT	WTG	G	11/16/20	09:24	3	2	1										7.00	
5	T3-3HT	WTG	G	11/17/20	10:30	3	2	1										7.37	
6	T3-3HTS	WTG	G	11/17/20	10:21	3	2	1										7.50	
7	T3-3LT	WTG	G	11/18/20	09:12	3	2	1										7.55	
8	T3-4HT	WTG	G	11/17/20	11:18	3	2	1										7.42	
9	T3-4HTS	WTG	G	11/17/20	11:05	3	2	1										7.45	
10	T3-4LT	WTG	G	11/16/20	08:55	3	2	1										7.54	
11	T4-4HB	WTG	G	11/17/20	1:58	3	2	1										7.49	
12	T6-1LT	WTG	G	11/18/20	08:38	3	2	1										7.45	

RELINQUISHED BY / AFFILIATION: Veronica Fry / Resource	DATE: 11/19/20	TIME: 13:00	ACCEPTED BY / AFFILIATION: Felix S. Birmaspace	DATE: 11/18/20	TIME: 13:00	TEMP IN C: 1.2	Received on Ice (Y/N): Y	Custody Sealed (Y/N): N	Cooler (Y/N): Y	Samples Intact (Y/N): Y
--	----------------	-------------	--	----------------	-------------	----------------	--------------------------	-------------------------	-----------------	-------------------------

SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Veronica Fry, W. Hillier, Trent Coakun SIGNATURE OF SAMPLER: <i>Veronica Fry</i>		DATE Signed: 11/19/20
--	--	-----------------------



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A: Client Information
 Section B: Required Project Information
 Section C: Invoice Information

Agency: Georgia Power
 Address: 1000 Weatherstone Parkway
 City: Marietta, GA 30067
 Phone: (404)350-4455
 Fax: (404)350-4455
 Email: veronica.fay@ge.com

Report To: Veronica Fay
 Copy To: [Blank]
 Purchase Order #: [Blank]
 Project Name: Mahanah Resampling
 Project #: [Blank]

Address: [Blank]
 Company Name: [Blank]
 Address: [Blank]
 Page Order: [Blank]
 Page Project Manager: veronica.fay@ge.com
 Page Profile #: 10768

Regulatory Agency: [Blank]
 State / Location: GA

SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAZ C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analyses Test	Requested Analyte Filtered (Y/N)	Residual Chlorine (Y/N)	
			START DATE	END DATE			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other				
BG-ZHT	MT 6	G	11/17/20	13:37		3	2	1										
DUP-1	MT 6	G	11/17/20	—		3	2	1										
DUP-2	MT 6	G	11/18/20	—		3	2	1										
FOL11820	MT 6	G	11/18/20	11:42		3	2	1										
EOL111920	MT 6	G	11/18/20	11:45		3	2	1										

REQUISITIONED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP In C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
Veronica Fay / Reservoir	11/18/20	13:00	Felix S. Brown / Pace	11/18/20	13:00	1.7	✓	✓	✓	✓

SAMPLER NAME AND SIGNATURE: [Blank]
 PRINT Name of SAMPLER: Veronica Fay
 SIGNATURE OF SAMPLER: Veronica Fay
 DATE Signed: 11/18/20

APPENDIX D

Lithium Alternative Source Demonstration Report



LITHIUM ALTERNATIVE SOURCE DEMONSTRATION

Plant McManus Former Ash Pond 1,
Brunswick, Georgia

November 17, 2020

**LITHIUM
ALTERNATIVE
SOURCE
DEMONSTRATION**

Plant McManus Former Ash Pond 1,
Brunswick, Georgia

Prepared for:

Georgia Power Company

Prepared by:

Arcadis U.S., Inc.
2839 Paces Ferry Road
Suite 900
Atlanta
Georgia 30339
Tel 770 431 8666
Fax 770 435 2666

Our Ref:

30050105

Date:

November 17, 2020



Geoffrey Gay, PE
Project Manager



Margaret Gentile, PhD
Technical Expert



Kathryn Farris, M. Sc.
Environmental Engineer

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- Figure 2. Dewatering Progression Aerials
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- Figure 4A/4B. Surface Water Sample Collection Locations
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- Figure 7. Ion Ratio Comparison
- Figure 8. Tidal Influence on Monitoring Wells
- Figure 9. Concentration Trends in Select Wells

APPENDICES

- A Resolute Potentiometric Maps
- B Resolute Field Sampling Memo, Logs and Analytical Reports – June 2020
- C Resolute Summary of Groundwater Analytical Data – July 2020

PROFESSIONAL CERTIFICATION

This *Lithium Alternative Source Demonstration* for the Georgia Power Company Plant McManus Former Ash Pond 1 has been prepared in compliance with applicable United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule and Georgia Environmental Protection Division's Solid Waste Rules (Chapter 391-3-4) under the direction of a Georgia licensed professional engineer.



J. Geoffrey Gay, P.E.
Principal Environmental Engineer
Georgia Registration No. PE 27801

11.17.2020
Date

1 INTRODUCTION

Arcadis U.S., Inc. (Arcadis) has prepared this alternate source demonstration (ASD) in accordance with the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule (40 Code of Federal Regulations [CFR] Part 257 Subpart D) and the Georgia Environmental Protection Division (GAEPD) Rules for Solid Waste Management 391-3-4-.10(6)(a). This report presents an ASD for the statistically significant levels (SSLs) of lithium, an Appendix IV groundwater monitoring constituent, which was detected at Georgia Power Company's Plant McManus former Ash Pond 1 (AP-1) (the site **Figure 1**). The site and CCR monitoring well network are shown on **Figure 1** and well construction details are presented in **Table 1**. The SSLs for lithium occurred at monitoring well MCM-06 in October 2019 and March 2020 with concentrations ranging from 0.064 to 0.13 milligrams per liter (mg/L) in 2019 and 2020, above the state and federal groundwater protection standards (GWPS) of 0.03 mg/L and 0.04 mg/L.

This ASD presents multiple lines of evidence that indicate that the lithium observed at former AP-1 is due to a natural source – i.e., the influx of brackish surface water during dewatering activities. Lithium is a naturally-occurring element in seawater and is present in the brackish water that is a mix of seawater and freshwater surrounding the site.

To support this ASD, the following analyses are presented in Section 3.0:

1. Evaluation of lithium concentrations in surface waters. This evaluation demonstrates that the range of lithium concentrations observed in surface water is comparable to the range of lithium concentrations observed at MCM-6.
2. Comparison of geochemistry markers in surface waters and groundwater. This comparison demonstrates that the monitoring wells where lithium is present in groundwater yield similar geochemistry to each other and the surface water, while being distinct from groundwater in monitoring wells with low estimated or non-detect lithium.
3. Variation in hydraulic conductivity across the site and variable groundwater level response to tidal fluctuations.
4. Evaluation of groundwater flow conditions and concentration trends during CCR removal. Dewatering associated with CCR removal resulted in a consistent inward lateral gradient during high and low tides. The dewatered inward flow conditions correlate with a shift in groundwater quality at several monitoring wells, including MCM-06, toward the geochemistry of the surface water.

Combined, these lines of evidence demonstrate that the former CCR unit is not the source of lithium SSLs observed in well MCM-06.

2 SITE BACKGROUND

Plant McManus is an electrical power generation plant located on Crispin Island, near Brunswick, Georgia. Crispin Island originally consisted of several smaller islands that were joined to construct Plant McManus. It was separated from the mainland to the northeast by tidal marsh and bound to the west and southwest by the Turtle River. The Turtle River is a tidally influenced brackish estuary that can vary in height by more than 8 feet during a tidal cycle (Resolute 2020a).

The plant was originally constructed in 1952. Use of coal for power production ceased in 1972, and Georgia Power Company retired all coal power generating assets at Plant McManus prior to April 16, 2015. During operation of the coal-fired units from 1959 until 1972, CCR was disposed in an approximately 80-acre surface impoundment (AP-1) on the Plant McManus site northeast of the plant (**Figure 1**).

2.1 Site Geology

Plant McManus is located within the Coastal Plain Province of Georgia. The soils that make up the surficial aquifer are comprised of very fine sands with discontinuous clay layers, from land surface (or beneath a shallow fill layer) to depths ranging from 33 to 43 feet below ground surface (bgs) (Resolute 2020a). These very fine sands and discontinuous clay layers are interpreted to be the Upper Satilla Formation (ATC Associates, Inc. 1997). The Upper Satilla Formation fines downward to a silty fine sand of either the Lower Satilla Formation (ATC Associates, Inc. 1997) or the Cypresshead Formation (Huddleston 1988).

Gamma logs performed in on-site borings indicate a lower permeability layer starting between 40 and 52 feet bgs (Resolute 2020a). This is consistent with the depths of the upper confining unit of the Ebenezer Formation, described by Weems and Edwards (2001) as two pairs of alternating confining units and water-bearing zones, extending down to approximately 185 feet bgs.

The surface of the tidal marsh is covered by silt and vegetation, except where scoured by tidal creeks with fine sands in their channels. The surficial aquifer formed in a similar depositional environment, with paleo tidal channels likely present throughout, and discontinuous layers/channels of fine sand or clay. The surficial aquifer is generally unconfined, but there may be localized layers of lower permeability soils, resulting in semi-confined conditions in some locations.

2.2 Site Hydrogeology

There are two components of groundwater flow at the site. The first is along a northeast to southwest axis and originates from the mainland to the northeast and Crispin Island to the southwest. The groundwater elevations in the monitoring wells and piezometers on the mainland (MCM-01, -02, -15, and -16) and Crispin Island (MCM-08 and -11) are consistently higher than the surface water elevation in former AP-1 and the monitoring wells along both dikes, despite tidal fluctuations. This indicates that groundwater flow is consistently towards former AP-1 from the northeast and southwest. Potentiometric maps are provided in **Appendix A**.

The second component of groundwater flow is along the northwest to southeast axis between former AP-1 and the tidal marsh. Under the present ambient conditions, without the influence of dewatering, the gradient changes direction with the tides. Based on the March 2020 high and low tide potentiometric surface maps presented in Appendix A, at low tide the gradient is from former AP-1 and at high tide the gradient is inwards towards former AP-1.

2.3 Coal Ash Removal

2.3.1 Coal Ash Removal Timeline

In 2016, Georgia Power initiated CCR removal activities at former AP-1. Parts of former AP-1 were subcategorized during excavation activities to facilitate removal (Areas A, B, and C [Figure 2]). In general, the progression of CCR material removal was conducted in the following sequence:

- March 2016 – Began removal of bulk CCR material from Areas A, B, and C.
- February 2017 – Began saturated CCR material removal from Area C.
- March 2018 – Began saturated CCR material removal from Area B.
- April 2018 – Began saturated CCR material removal from Area A.
- October 2019 – Excavation activities were completed.

2.3.2 Dewatering

Dewatering of AP-1 was required for CCR for removal and pond closure. Dewatering wells (RW-1 through RW-10) were installed along the northern dike and dewatering activities progressed with excavation activities. After Hurricane Irma interrupted excavation activities in fall 2017, dewatering occurred in a step-wise process according to which pond was excavated. During excavation of Area C, water was pumped using a submersible pump from Area C to Areas A and B, which were within the influence of the dewatering wells. Water from Areas A and B was captured by the dewatering system, treated, and discharged. Once Area C was cleared of CCR, dewatering and CCR removal began at Area B followed by Area A. **Appendix A** provides a series of groundwater potentiometric maps during and after dewatering and excavation. An illustration of the hydrologic impacts of dewatering is provided as **Figure 3**. Dewatering activities began in February 2017 and operated nearly continuously until April 2019, a period of over 2 years. The prolonged pumping created a temporary shift in the hydrologic characteristics of the site. Further description of this hydraulic shift and its effect on lithium concentrations at monitoring well MCM-06 is discussed in Section 3.1.4.

2.4 Surface and Groundwater Chemistry

Plant McManus is situated on an island along the Turtle River, which feeds into the Saint Simons sound and the Atlantic Ocean. The Turtle River is a tidally influenced brackish estuary in the vicinity of Brunswick and Plant McManus. The water quality of brackish surface water can differ considerably compared to groundwater and reflects a mixing of saline seawaters with groundwater and freshwater inputs. Seawater has six major (above 100 parts per million [ppm]) dissolved elements: chlorine, sodium, magnesium, sulfur (as sulfate), calcium, and potassium; and six minor constituents (concentrations between 1 and 100 ppm): bromine, carbon, strontium, boron, silicon, and fluorine (Segar 1998). Trace elements, including lithium, are detected at concentrations less than 1 ppm. Lithium is the fourteenth most abundant element in seawater and are documented to range from 0.1 to 0.2 mg/L (Institute of Ocean Energy).

Typical CCR indicators (boron, sulfate, calcium, and chloride) are naturally present at elevated levels in seawater. The similarity between major, minor, and trace elements in seawater and CCR impacted water challenges the standard approaches for evaluating coal-ash sites. Therefore, in these conditions, a lines-of-evidence approach can be used to further understand the source of a constituent.

3 ALTERNATIVE SOURCE DEMONSTRATION

To evaluate alternative sources, the site conceptual model was revisited and site geochemistry, hydrogeology, historical data, and CCR removal activities were reviewed. Based on the data evaluation, the SSLs for lithium have been attributed to influxes of brackish surface water from the estuary during excavation dewatering and tidal influence in wells along the dike.

3.1.1 Lithium in Surface Water

A comparison of surface water quality to groundwater quality demonstrates that the range of lithium concentrations observed in surface water at the site is comparable to those observed in groundwater and that surface water is a viable source for lithium observed in well MCM-06. Surface water samples were collected in February 2020 and in June 2020. Memos summarizing the field activities and analytical data reports for these events are provided as **Appendix B**.

In February 2020, surface water samples were collected from 4 transects (T1 through T4) adjacent to monitoring wells MCM-04, MCM-05, MCM-07 and MCM-14, as shown on **Figures 4A and 4B**. Four sample locations were collected in each transect. In addition, samples from the surface water in the former ash pond were collected adjacent to MCM-05, MCM-06, MCM-07 and MCM-14. Samples were also collected from two background locations (**Figure 5**). One background surface water location sampled was the low tide background location, BG-1, in Cowpen Creek, north of its confluence with Burnett Creek. The other surface water sample was collected at high tide from background location 2, or BG-2, located in the Turtle River, north of its confluence with Gibson Creek.

The lithium results from surface water sampling are presented in **Table 2**. Total lithium concentrations in the surface water samples collected from the transects and background locations ranged from 0.035 (estimated) to 0.11 mg/L. This range of concentrations is comparable to the concentrations of the lithium SSLs ranging from 0.064 to 0.13 mg/L at MCM-06 in 2019 and 2020 when SSLs were identified. Total lithium concentrations in the former ash pond water were substantially lower than surface water, ranging from 0.012 (estimated) to 0.022 (estimated) mg/L.

3.1.2 Evaluation of Geochemistry Markers

Comparison of geochemistry markers in surface waters and groundwater demonstrates that the monitoring wells where lithium is present in groundwater yield similar geochemistry to each other and the surface water, while being distinct from groundwater in monitoring wells with low estimated or non-detect lithium. The June 2020 sampling event consisted of surface water samples from the two background locations within Turtle River, BG-1 and BG-2, along with groundwater samples from monitoring wells MCM-06 and MCM-07, and DPZ-02 in support of ASD development (**Figure 5**). These samples were analyzed for select cations, anions, metals, alkalinity, and total dissolved solids. Surface water data collected during this mobilization were also compared to data from the October 2019 and March 2020

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Assessment Monitoring events that identified SSL lithium concentrations (Resolute 2020b). Background monitoring wells MCM-18, MCM-19, and MCM-20 were not installed at the time of the October 2019 sampling event. Nine sampling events were conducted at the background wells between November 2019 and March 2020 (Resolute 2020b). The March 2020 results were used for the comparative analysis. Notes regarding field activities completed by Resolute and data tables for the October 2019 and March 2020 sampling events are provided in **Appendices B and C**.

A direct comparison of surface water and monitoring well geochemical data supports the understanding that the source of lithium is brackish surface water. Piper plots were developed from the June data from surface water and groundwater monitoring wells MCM-06, MCM-07, and DPZ-02. Piper plots assess relative abundance of general cations and anions in groundwater and are a useful tool in differentiating water sources (Chu et al. 2017). The water quality is similar in BG-2 and the monitoring wells (**Figure 5**). Lower chloride concentrations were identified in water collected from background location BG-1; however, this is expected due to its upstream location, which is less influenced by the tidal zone.

A comparison of ratios of ions can be used to differentiate groundwater impacted by CCR from different sources. This method assumes that select ions in groundwater from a CCR source, such as boron, sulfate, calcium, chloride, and lithium, are conservative in groundwater and not retarded due to processes such as sorption or precipitation. Accordingly, the ratio of these conservative CCR ions would not change along the flowpath from a potential CCR source. At Plant McManus, many of the CCR ions (boron, sulfate, calcium, chloride and lithium) are also present in the surface water, as discussed in Section 2.4, and will be present at different characteristic ratios than a potential CCR source. Accordingly, a comparison of ion ratios is a line of evidence for evaluating a surface water versus CCR-derived source of lithium.

Figure 6 shows a correlation plot between Appendix III CCR indicator parameters chloride and lithium. The data shows several different relationships between lithium and chloride:

1. The similarity in ratios of lithium and chloride in the surface and groundwater samples shown by the orange trend line indicate that elevated lithium detections at MCM-06 are from surface water. Upgradient monitoring wells MCM-01, MCM-02, MCM-08, MCM-11, MCM-15, and MCM-16, shown with plus sign symbols, are clustered to the bottom left of the diagram demonstrating non-detect or estimated-below-reporting limit concentrations of lithium and low chloride concentrations. Downgradient monitoring well MCM-04 (grey dash symbol) and MCM-18 (grey asterisk symbol) also exhibit low estimated lithium concentrations below the reporting limit and low chloride concentrations, clustering to the lower left of the diagram. Wells located along the dikes exhibit a positive correlation between lithium and chloride along two trend lines shown in green and orange. Trendline 1, shown in orange, includes surface water samples, BG-1 and BG-2, the elevated lithium samples from MCM-06, and two samples from MCM-07 with elevated lithium. The similarity in ratios of lithium and chloride in the surface and groundwater samples along this trend line indicate the elevated lithium detections at MCM-06 are from surface water, rather than a CCR source that would be expected to have a different ratio of lithium and chloride.
2. The positive correlation of lithium and chloride along the green trend line also indicates a source of lithium from surface water. The green trend line includes samples that exhibited lower lithium concentrations from wells MCM-05, MCM-14, MCM-17, MCM-06, and MCM-07. The green trend line

likely differs from the orange trend line because the ratio of surface water and groundwater samples differs due to variable mixing and flow conditions at those locations.

3. Finally, the samples from two background locations, MCM-19 and MCM-20 form a distinct cluster shown in blue with estimated lithium below the reporting limit consistently detected around 0.02 mg/L over a range of chloride concentrations from 5,010 mg/L to 8,130 mg/L. There is also one sample from MCM-07 that falls near this grouping shown in a blue triangle. The blue cluster of data from MCM-19 and MCM-20 is potentially a different mix of surface water and groundwater in these background locations.

To analyze several CCR indicator ions in conjunction with lithium simultaneously, concentrations for the ions are displayed on a star plot in **Figures 5 and 7**, with data in **Appendix C** for the October 2019 and March and June 2020 events. These plots visualize the relative amounts of ions present at varying orders of magnitude. A similarity in shape represents similar ratios of ions, indicating a similar source. On each plot, the surface water chemistry collected from location BG-2 in June 2020 is shown as a black dashed line while groundwater chemistry from the monitoring well is shown as a colorful solid line. Similar groundwater signatures are grouped by color. The star plots show that concentrations of boron, calcium, sulfate, lithium, and chloride in groundwater collected from several monitoring wells along the dikes (MCM-05, -06, -07, and -14) are present at ratios that are similar to surface water and to each other. In contrast, groundwater collected from the island and mainland have ion ratios dissimilar to the surface water samples. Lithium concentrations in these monitoring wells along the dikes (MCM-05, -06, -07, and -14) are similar to the range of surface water, as discussed in Section 3.1.1, and higher than wells located on the mainland and island.

3.1.3 Hydrogeologic Conditions

Variation in hydraulic conductivity across the site and variable groundwater level response to tidal fluctuations show that locations such as MCM-06 are in closer hydraulic communication with the tidal marsh than other wells. Site data collected to date, including slug tests and tidal studies, demonstrate heterogeneous hydrogeologic conditions, with more groundwater flow in monitoring wells MCM-05, MCM-06, MCM-07, and MCM-14, located along the dikes (**Figure 1**).

Single well slug tests conducted in November 2019 identified a wide distribution of hydraulic conductivities across the site, from 8.67×10^{-5} centimeter per second (cm/sec) to 2.90×10^{-3} cm/sec (Resolute 2020a). The highest hydraulic conductivities were found primarily within monitoring wells along the northern and southern dikes at monitoring wells MCM-05, MCM-06, MCM-14, and MCM-17 (**Table 3**), although wells exhibiting high conductivities are also present within the mainland.

A tidal study was conducted (Resolute 2020a) to evaluate sensitivities of groundwater to changes in tides. Transducers were deployed over a period of several months. The monitoring well locations along the dikes were found to be more sensitive to tidal fluctuations during the study, especially MCM-05, MCM-06, MCM-07 and MCM-14 (**Figure 8**). The magnitude of tidal fluctuation at these monitoring wells was greater than at the other wells. Hydraulic conductivities measured at MCM-05, MCM-06 and MCM-14 are also on the high end of the range for the site. Together, the hydraulic conductivity and tidal data show these locations are in hydraulic communication with the tidal marsh. Locations MCM-05, MCM-06, MCM-07, and MCM-14 which exhibit tidal fluctuations in water levels also exhibit similar geochemistry to surface water, as discussed in Section 3.1.2.

3.1.4 Shifts in Hydraulic Conditions and Associated Water Quality Changes during Coal Ash Removal

Dewatering associated with CCR removal resulted in a consistent inward lateral gradient during high and low tides. The dewatered inward flow conditions correlate with a shift in groundwater quality at several monitoring wells, including MCM-06, toward the geochemistry of the surface water.

During the dewatering and excavation process, the water level in AP-1 was depressed below the water level in the tidal marsh (see March 2019 high and low tide potentiometric surface maps in **Appendix A**). As a result, regardless of the tidal stage, there was a consistent gradient towards AP-1 during dewatering activities, favoring lateral movement of surface water and groundwater flow towards AP-1 and the dewatering wells (**Figure 3**).

After excavation and dewatering ceased, the hydraulic gradient and direction along the dikes shifted to the present condition, where the hydraulic gradient changes with the tides, as described in Section 2. The tide cycle is approximately 6 hours between high and low tides. The amount of time for groundwater movement at each tide stage is approximately 3 hours – or less at the higher magnitude gradients that would be present at the peak tides – thus significantly limiting the opportunity for groundwater flow. These characteristics are reflected in minimal changes in concentrations of lithium and other salts after pumping ended. Over time, it is anticipated that concentrations of lithium will return to pre-excavation concentrations as steady-state hydraulic gradients are re-established.

The trend of lithium concentrations over time at monitoring wells MCM-06, MCM-07 and MCM-14 align with dewatering activities. An evaluation of lithium trends at the wells located along the dike show that lithium concentrations at well MCM-14, located along the southern dike, increased in conjunction with the progression of excavation activities and dewatering at Area C (**Figure 9**). As excavation progressed to Areas A and B (March and April 2018), water levels decreased in Areas A and B, and similar trends were then seen in monitoring wells MCM-06 and MCM-07. The increase in lithium and other water quality parameters such as total dissolved solids, sulfate, and boron in these monitoring wells likely reflects the point when the pond has been fully dewatered and the dewatering well system begins to draw in more surface water as compared to pond water. As presented in the previous section, the ion ratios of these markers are like that of surface water; therefore, Arcadis interprets the lithium to be derived from the lateral movement of brackish surface water towards the pond.

4 CONCLUSION AND RECOMMENDATION

This report serves as an ASD prepared in accordance with 40 CFR § 257.95(g)(3)(ii) and demonstrates that the SSL for lithium at Plant McManus former AP-1 monitoring well MCM-06 is attributed to naturally occurring lithium in the adjacent brackish estuary and were not due to a release from AP-1. This is demonstrated by:

- Presence of lithium in surface water, with concentrations 0.1 to 0.2 mg/L common in seawater (Institute of Ocean Energy) and concentrations up to 0.11 mg/L measured in the brackish water at surface water sampling locations in comparison to groundwater concentrations ranging from 0.064 to 0.13 mg/L at MCM-06 in 2019 and 2020;

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- Similarity of geochemical markers in surface water and groundwater wells with elevated concentrations of lithium;
- Variation in hydraulic conductivity across the site and variable groundwater level response to tidal fluctuations which demonstrate locations such as MCM-06 are in hydraulic communication with the tidal marsh. The locations which exhibit tidal fluctuations in water levels also exhibit similar geochemistry to surface water; and
- Shifts in groundwater chemistry and an increase in lithium concentrations at MCM-06 that coincided with the establishment of inward gradients during pond dewatering activities.

These multiple lines of evidence are exhibited at MCM-06 as well as other wells along the dike (e.g., MCM-07 and MCM-14). The evidence supports the conclusion that the lithium SSL is attributable to the influx of brackish surface water and is not attributable to CCR storage or a release from former AP-1. Therefore, no further action for lithium is warranted.

5 REFERENCES

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TABLES



Table 1
Monitoring Well Network and Piezometers
Assessment of Corrective Measures Report
Georgia Power Company
Plant McManus Former Ash Pond 1
Brunswick, Georgia

Well ID	Hydraulic Location	Installation Date	Resurvey Date	Northing (ft) ¹	Easting (ft) ¹	Top of Casing Elevation ² (ft NAVD 88)	Total Depth (ft BTOC)	Top of Screen Elevation (ft NAVD 88)	Bottom of Screen Elevation (ft NAVD 88)
Monitoring Well Network									
MCM-01	Upgradient	7/7/2016	4/16/2020	443727.31	852732.08	8.63	27.32	-7.93	-17.93
MCM-02	Upgradient	7/6/2016	4/16/2020	444496.53	852663.64	11.25	27.35	-5.22	-15.22
MCM-04	Downgradient	6/30/2016	4/16/2020	444804.73	851695.27	12.39	28.57	-5.18	-15.18
MCM-05	Downgradient	7/9/2016	4/16/2020	444716.63	851309.91	10.04	28.05	-7.25	-17.25
MCM-06	Downgradient	7/8/2016	4/16/2020	444407.22	850782.11	10.15	27.20	-6.27	-16.27
MCM-07	Downgradient	7/8/2016	4/16/2020	444059.38	850195.96	10.20	23.75	-2.76	-12.76
MCM-08	Upgradient	7/11/2016	4/16/2020	443758.8	849716.96	9.42	28.29	-8.39	-18.39
MCM-11	Upgradient	7/12/2016	4/16/2020	442429.8	851072.91	10.23	24.00	-3.34	-13.34
MCM-12	Downgradient	7/12/2016	4/16/2020	442821.17	851312.45	11.87	29.00	-6.12	-16.12
MCM-14	Downgradient	7/9/2016	4/16/2020	443358.82	852317.59	11.50	28.11	-6.23	-16.23
MCM-15	Upgradient	6/30/2016	4/16/2020	444825.53	851949.02	12.84	26.60	-4.53	-14.53
MCM-16	Upgradient	7/6/2019	4/16/2020	444551.32	852716.6	16.02	28.39	-1.72	-11.72
MCM-17	Downgradient	9/29/2016	4/16/2020	443074.41	851899.68	11.49	27.44	-4.81	-14.81
MCM-18	Upgradient	10/30/2019	4/16/2020	442067.07	851698.41	9.00	27.86	-8.76	-18.76
MCM-19	Upgradient	10/30/2019	4/16/2020	441157.82	852338.86	8.71	28.32	-9.53	-19.53
MCM-20	Upgradient	10/30/2019	4/16/2020	440944.4	852185.15	10.07	23.05	-2.98	-12.98
DPZ-02	Vertical Delineation	3/10/2020	4/16/2020	444391.02	850757.94	9.54	43.46	-28.84	-33.84
Piezometer									
MCM-03	Water Level	7/6/2016	4/16/2020	444414.88	851984.67	9.97	27.70	-7.73	-17.73
MCM-08	Water Level	7/11/2016	4/16/2020	443758.8	849716.96	9.42	28.29	-8.39	-18.39
MCM-09	Water Level	7/10/2019	NA	443252.16	850147.75			Abandoned	
MCM-10	Water Level	7/11/2016	4/16/2020	442791.88	850453.05	11.75	23.96	-1.25	-11.25
MCM-13	Water Level	7/9/2016	4/16/2020	443030.23	851826.19	12.56	27.46	-4.90	-14.90
PZ-09	Water Level	10/31/2019	4/16/2020	444082.13	849471.64	9.41	24.05	-4.56	-14.56
PZ-10	Water Level	11/1/2019	4/16/2020	444949.09	851673.98	12.17	22.91	-0.66	-10.66
PZ-11	Water Level	11/22/2019	4/16/2020	443222.86	849280.51	9.37	19.08	-4.63	-9.63
PZ-12	Water Level	11/22/2019	4/16/2020	443593.34	849396.87	7.90	18.70	-5.72	-10.72
DPZ-01	Water Level	3/10/2020	4/16/2020	444695.71	851277.4	9.71	40.78	-25.99	-30.99
DPZ-03	Water Level	3/11/2020	4/16/2020	444073.16	850218.83	9.46	47.57	-33.03	-38.03
DPZ-04	Water Level	3/12/2020	4/16/2020	443062.6	851881.94	11.45	51.23	-34.70	-39.70
DPZ-05	Water Level	3/11/2020	4/16/2020	443376.32	852342.11	11.00	51.20	-35.12	-40.12
DPZ-06	Water Level	3/12/2020	4/16/2020	444614.79	851846.27	12.04	40.50	-23.38	-28.38

Notes:

1. Georgia State Plane - East Coordinates.
 2. NAVD 88 - North American Vertical Datum of 1988
- ft BTOC - feet below top of casing
 Data source: Resolute 2020a

Table 2
Lithium in Surface Water
Georgia Power Company
Plant McManus Former Ash Pond 1
Brunswick, Georgia

Location	Date	Lithium (mg/L)	Dissolved Lithium (mg/L)
Groundwater Protection Standards			
Federal GWPS	April 2020	0.04	N/A
State GWPS	April 2020	0.03	N/A
Groundwater			
MCM-06	8/19/2020	0.13	NS
MCM-06	6/16/2020	0.12	NS
MCM-06	10/17/2019	0.12	NS
MCM-07	6/16/2020	0.047	NS
DPZ-02	6/16/2020	0.096	NS
Background Surface Water			
BG-1LT	2/2/2020	0.09	0.098
BG-1LT-B	6/18/2020	0.055	NS
BG-1LT-S	6/18/2020	0.055	NS
BG-2HT	2/2/2020	0.099	0.099
BG-2-HT-B	6/17/2020	0.091	NS
BG-2-HT-S	6/17/2020	0.069	NS
Surface Water Transects			
T1-1HT	2/1/2020	0.039 J	0.038 J
T1-1LT	2/1/2020	0.024 J	0.022 J
T1-2HT	2/1/2020	0.11	0.088
T1-2HTS	2/1/2020	0.055	0.061
T1-2LT	2/1/2020	0.022 J	0.024 J
T1-3HT	2/1/2020	0.092	0.08
T1-3HTS	2/1/2020	0.067	0.072
T1-3LT	2/1/2020	0.022 J	0.019 J
T1-4HT	2/1/2020	0.08	0.086
T1-4HTS	2/1/2020	0.081	0.083
T1-4LT	2/1/2020	0.09	0.09
T2-1HT	2/1/2020	0.052	0.059
T2-2HT	2/1/2020	0.1	0.084
T2-2HTS	2/1/2020	0.073	0.06
T2-2LT	2/2/2020	0.063	0.057
T2-3HT	2/1/2020	0.099	0.093
T2-3HTS	2/1/2020	0.11	0.094
T2-3LT	2/2/2020	0.049 J	0.041 J
T2-4HT	2/1/2020	0.091	0.092
T2-4HTS	2/1/2020	0.085	0.088
T2-4LT	2/2/2020	0.075	0.077
T3-1HT	2/2/2020	0.076	0.075
T3-2HT	2/2/2020	0.097	0.087
T3-2HTS	2/2/2020	0.075	0.078

Table 2
Lithium in Surface Water
Georgia Power Company
Plant McManus Former Ash Pond 1
Brunswick, Georgia

Location	Date	Lithium (mg/L)	Dissolved Lithium (mg/L)
T3-2LT	2/3/2020	0.077	0.079
T3-3HT	2/2/2020	0.081	0.088
T3-3HTS	2/2/2020	0.08	0.081
T3-3LT	2/3/2020	0.084	0.078
T3-4HT	2/2/2020	0.087	0.1
T3-4HTS	2/2/2020	0.085	0.09
T3-4LT	2/3/2020	0.072	0.072
T4-1L	3/18/2020	0.076	0.056
T4-2L	3/18/2020	0.043 J	0.061
T4-3L	3/18/2020	0.053	0.037 J
T4-4L	3/18/2020	0.062	0.036 J
T4-1HS	3/18/2020	0.042 J	0.058
T4-2HS	3/18/2020	0.043 J	0.064
T4-3HS	3/18/2020	0.035 J	0.051
T4-4HS	3/18/2020	0.047 J	0.041 J
T4-1HB	3/18/2020	0.036 J	0.033 J
T4-2HB	3/18/2020	0.048 J	0.042 J
T4-3HB	3/18/2020	0.036 J	0.064
T4-4HB	3/18/2020	0.035 J	0.066
Former Ash Pond Water			
MCM-05HT ASHPOND	2/2/2020	0.018 J	0.020 J
MCM-05LT ASHPOND	2/3/2020	0.012 J	0.021 J
MCM-06HT ASHPOND	2/1/2020	0.020 J	0.021 J
MCM-06LT ASHPOND	2/2/2020	0.012 J	0.022 J
MCM-07HT ASHPOND	2/1/2020	0.020 J	0.020 J
MCM-07LT ASHPOND	2/1/2020	0.019 J	0.019 J
POND 4L	3/18/2020	0.022 J	0.022 J
POND 4H	3/18/2020	0.016 J	0.020 J

Abbreviations

GWPS- groundwater protection standards

HT- high tide

J- estimated concentration greater than the laboratory's method detection limit, but less than the laboratory's reporting limit.

LT- low tide

mg/L- milligrams per liter

N/A- not applicable

NS- not sampled

Table 3
Single Well Hydraulic Conductivity Test Results
Georgia Power Company
Plant McManus Former Ash Pond 1
Brunswick, Georgia

Well ID	Slug In (cm/sec)	Slug Out (cm/sec)	Average K (cm/sec)
MCM-01	not reported	1.82E-03	1.82E-03
MCM-02	9.82E-04	1.08E-03	1.03E-03
MCM-04	4.65E-04	5.89E-04	5.27E-04
MCM-05	2.47E-03	2.92E-03	2.70E-03
MCM-06	not reported	1.86E-03	1.86E-03
MCM-07	not reported	1.85E-04	1.85E-04
MCM-08	2.44E-04	2.55E-04	2.49E-04
MCM-09	9.31E-05	8.04E-05	8.67E-05
MCM-10	1.89E-04	1.51E-04	1.70E-04
MCM-12	9.19E-05	9.89E-05	9.54E-05
MCM-13	not reported	9.59E-04	9.59E-04
MCM-14	not reported	2.88E-03	2.88E-03
MCM-15	1.61E-03	1.81E-03	1.71E-03
MCM-16	2.35E-03	2.56E-03	2.46E-03
MCM-17	2.35E-03	3.45E-03	2.90E-03
MCM-18	1.12E-03	1.07E-03	1.09E-03
MCM-19	9.73E-04	1.07E-03	1.02E-03
MCM-20	4.45E-04	2.81E-04	3.63E-04

Notes:

Hydraulic conductivity (K) is shown in units of centimeter per second (cm/sec).

Slug tests conducted in July and August of 2018.

Source:

Resolute Environmental & Water Resources Consulting. 2020. Hydrogeologic Assessment Report - Plant McManus Former Ash Pond 1. Prepared for Georgia Power. April 2020.

FIGURES





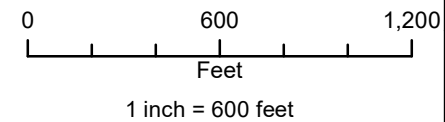
Legend

- CCR PERMITTED BOUNDARY
- + MONITORING WELL
- DEEP PIEZOMETER
- DEWATERING WELL

Note:

Source of island and historical features include 1951, 1953, and 1965 aeriels (EDR and others) and "McManus, Crispen Island Site, L layout of Access Roadway to Plant Site" Georgia Power Company Engineering. November 10, 1950.
 *Well abandoned 2019

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



GEORGIA POWER
 ALTERNATIVE SOURCE DEMONSTRATION
 PLANT MCMANUS FORMER ASH POND 1
 BRUNSWICK, GEORGIA

**SITE LOCATION AND
 WELL LOCATION MAP**



FIGURE
1



Photo source: Aerial Innovations Southeast, Nov. 2017




Photo source: Aerial Innovations Southeast, Jan. 2018



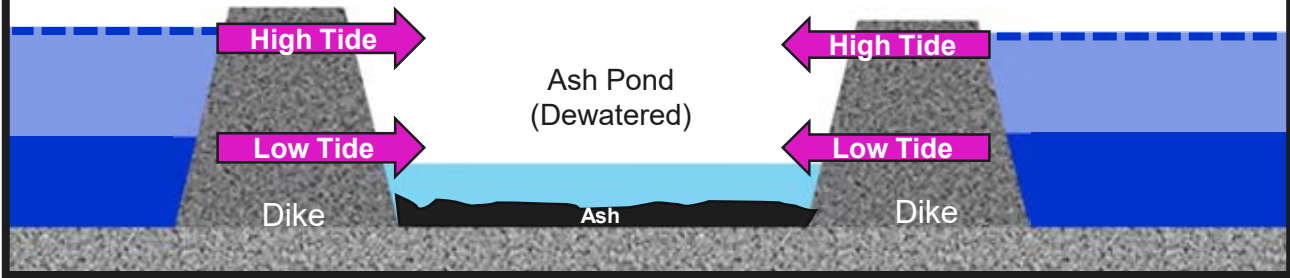
Photo source: Aerial Innovations Southeast, March. 2018



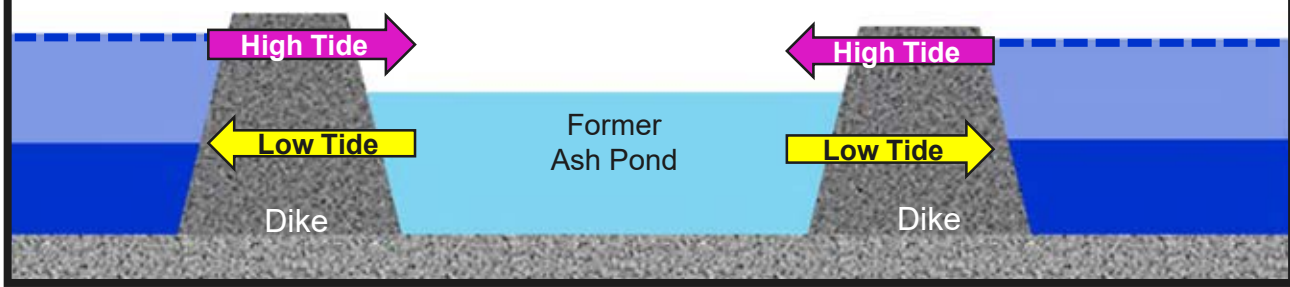
Note:
 Aerial photos taken during coal ash removal activities by Aerial Innovations Southeast
 Photo Dates:
 I - November 2017; II - January 2018, III - March 2018, IV - May 2018.

GEORGIA POWER LITHIUM ALTERNATIVE SOURCE DEMONSTRATION PLANT MCMANUS FORMER ASH POND 1 BRUNSWICK, GEORGIA	
DEWATERING PROGRESSION AERIALS	
	Design & Consultancy for natural and built assets
FIGURE 2	

I. During-Excavation Activities



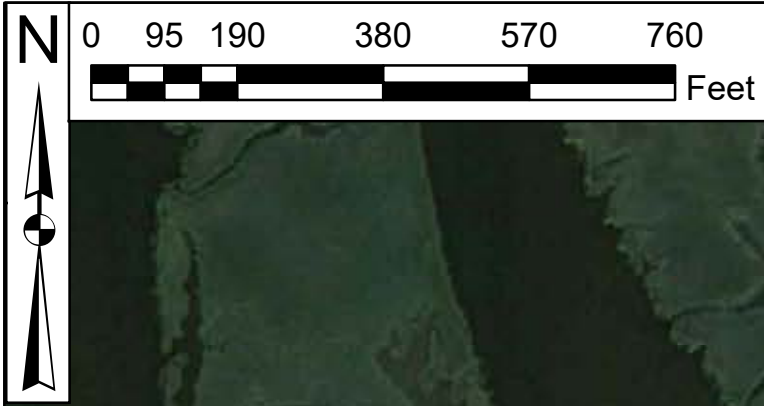
II. Post-Excavation Activities



Notes: not to scale, provided for illustrative purposes

GEORGIA POWER
 LITHIUM ALTERNATIVE SOURCE DEMONSTRATION
 PLANT MCMANUS FORMER ASH POND 1
 BRUNSWICK, GEORGIA

**SCHEMATIC: DEWATERING
 HYDROLOGIC INFLUENCE**



X:\ArcGIS\Manus\ASD2020\AlternateSourceDemonstration\SamplingLocations



Legend

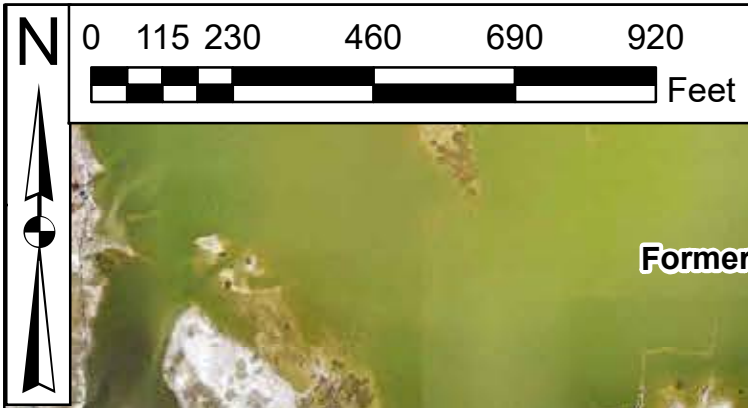
- Surface Water Sample
- Pond Sample
- CCR Permitted Boundary

Resolute
Environmental & Water Resources Consulting

Woodstock, GA	April 2020
---------------	------------

**Plant McManus
Surface Water
Sample Collection Locations**
Brunswick, GA

**Figure
4a**



X:\ArcGIS\McManus\ASD2020\AlternateSourceDemonstration\SamplingLocations



Legend

- Surface Water Sample
- Pond Sample
- CCR Permitted Boundary

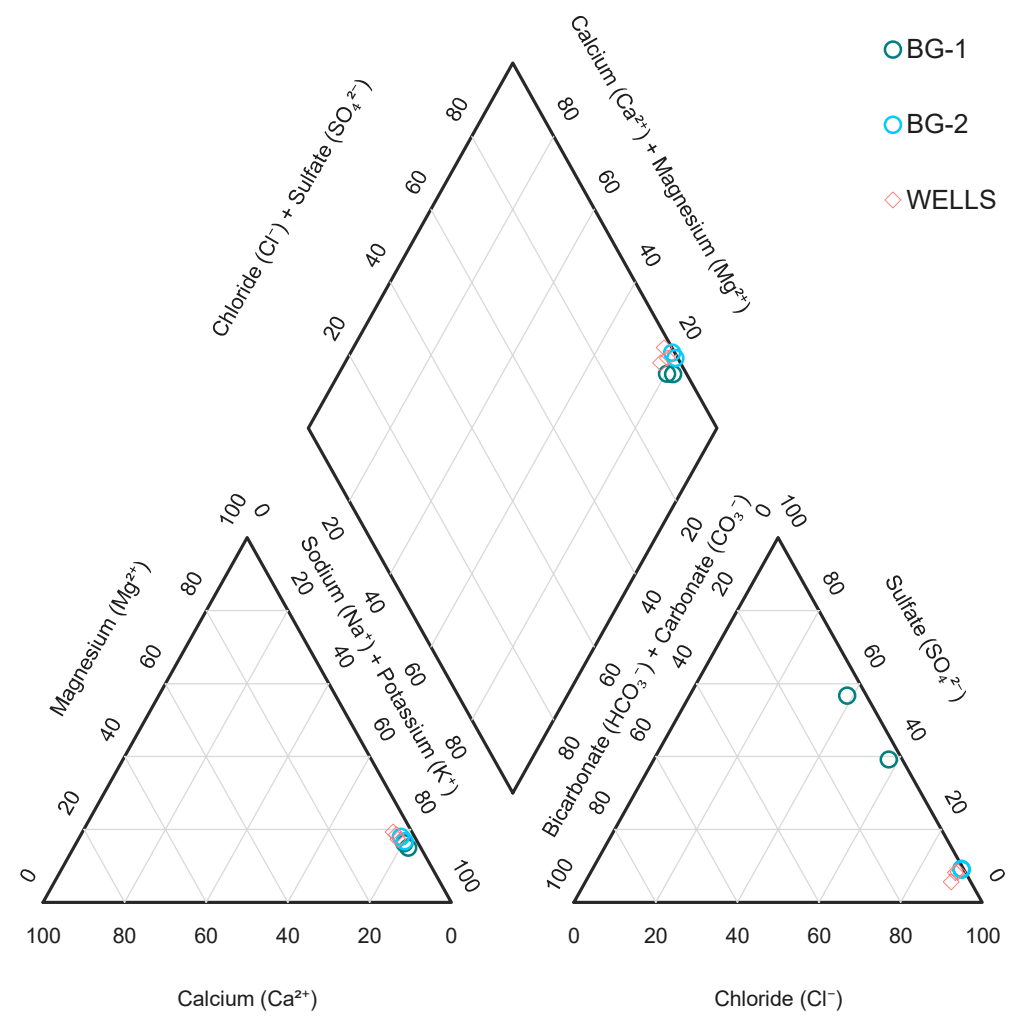
Resolute
Environmental & Water Resources Consulting

Woodstock, GA	April 2020
---------------	------------

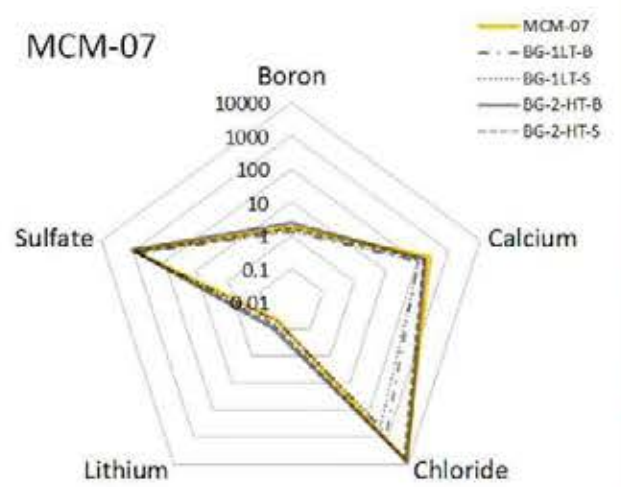
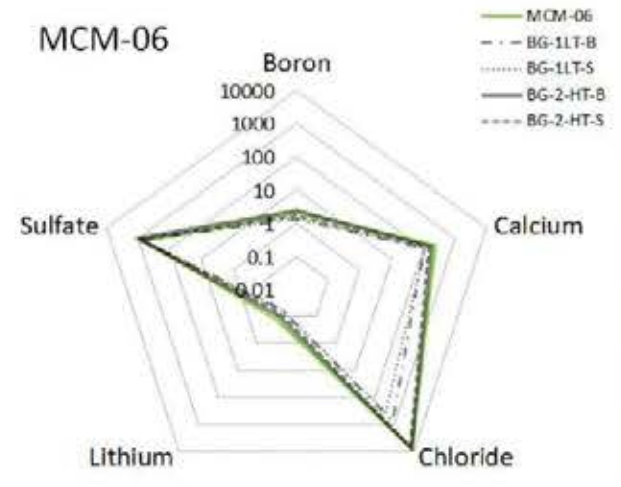
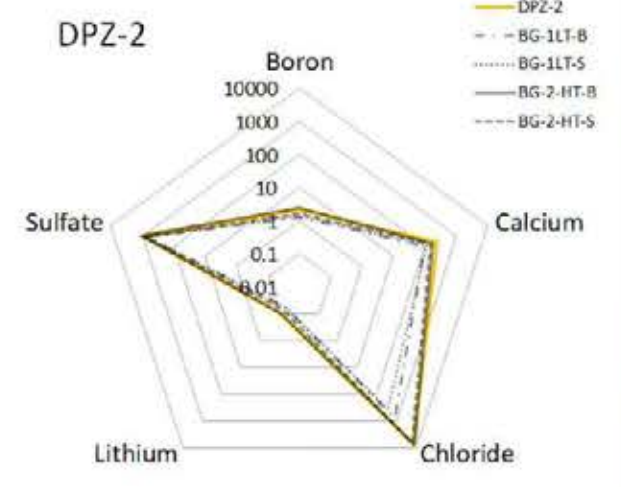
**Plant McManus
Surface Water
Sample Collection Locations**
Brunswick, GA

**Figure
4B**

User: Maria Location: On Site Date: Path: C:\Users\mariam\Desktop\Local_GIS\Branerwick_Creek_Island_GAMMD_KGP_060220\Figures\ASD_Surface_Water_Supplemental_Sample_Locations_June_2020.mxd

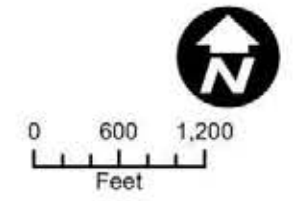


- BG-1
- BG-2
- ◇ WELLS



- Legend**
- ▭ CCR PERMITTED BOUNDARY
 - 📍 SURFACE WATER SAMPLE LOCATIONS (JUNE 2020)
 - 📍 MONITORING WELLS
 - 📍 DEEP PIEZOMETER WELLS

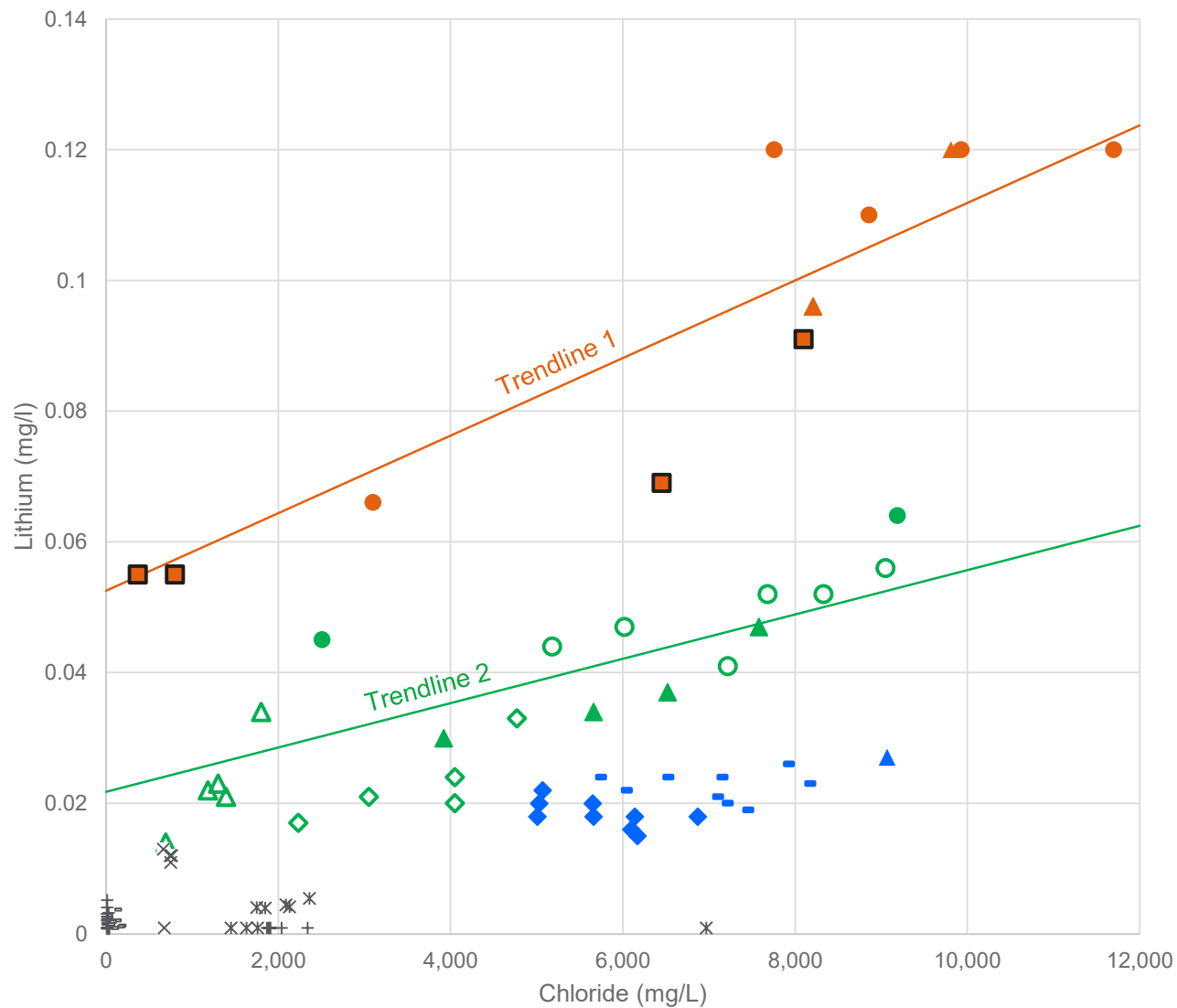
Notes:
 Units in mg/l
 Wells presented in Piper plot include those locations sampled during the June 2020 Supplemental Sampling Event (MCM06, MCM07 and DP22).
 Two samples (shallow [S] and bottom [B]) were collected from each background location (BG1LTS, BG1LTB, BG2HTS, BG2HTB).
 Service Layer Credit: Source Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 *Well abandoned in 2019



GEORGIA POWER
 LITHIUM ALTERNATIVE SOURCE DEMONSTRATION
 PLANT MCMANUS FORMER ASH POND 1
 BRUNSWICK, GEORGIA

JUNE 2020 SURFACE WATER SAMPLE LOCATIONS AND RESULTS





- Surface Water (BG-1, BG-2)
- + Upgradient Monitoring Wells (MCM-01, MCM-02, MCM-08, MCM-11, MCM-15, MCM-16)
- MCM-04
- ▲ MCM-05
- MCM-06
- ▲ MCM-07
- × MCM-12
- MCM-14
- ◇ MCM-17
- × MCM-18
- ◆ MCM-19
- MCM-20
- Trendline 1 generated by orange data points
- Trendline 2 generated by green data points

Notes:

Data posted from samples collected in 2019 and 2020 and analyzed for both lithium and chloride presented in Table 4 and Appendix C.

Surface water sample results outlined in black.

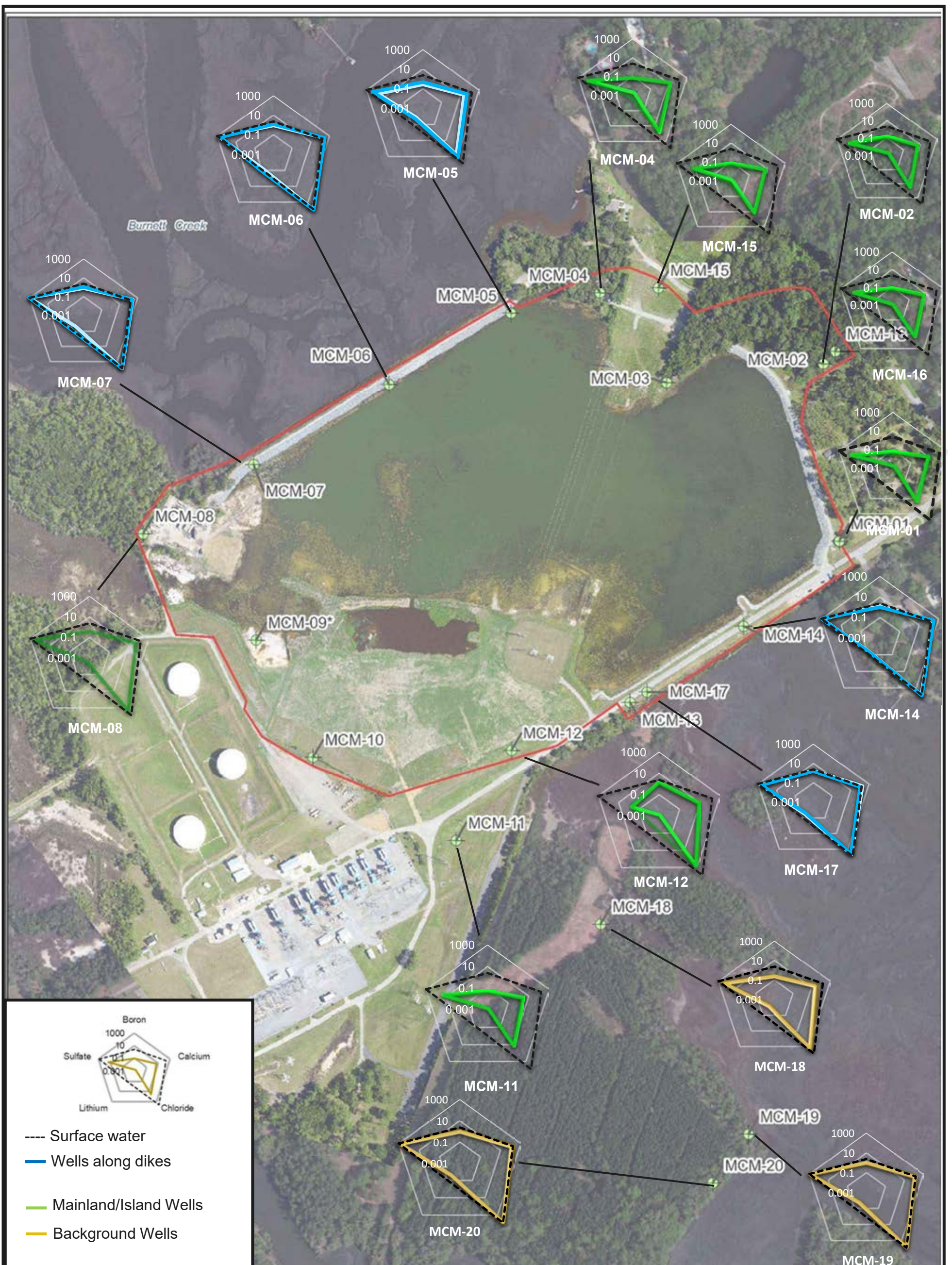
Blue and grey data points are colored to illustrate points discussed in the text in Section 3.1.2

GEORGIA POWER
LITHIUM ALTERNATIVE SOURCE DEMONSTRATION
PLANT MCMANUS FORMER ASH POND 1
BRUNSWICK, GEORGIA

**LITHIUM CONCENTRATIONS VERSUS
CHLORIDE CONCENTRATIONS**

 Design & Consultancy
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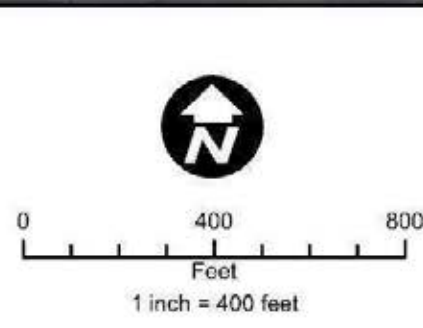
FIGURE
6



Legend

- Surface water
- Wells along dikes
- Mainland/Island Wells
- Background Wells

CCR PERMITTED BOUNDARY
 MONITORING WELL

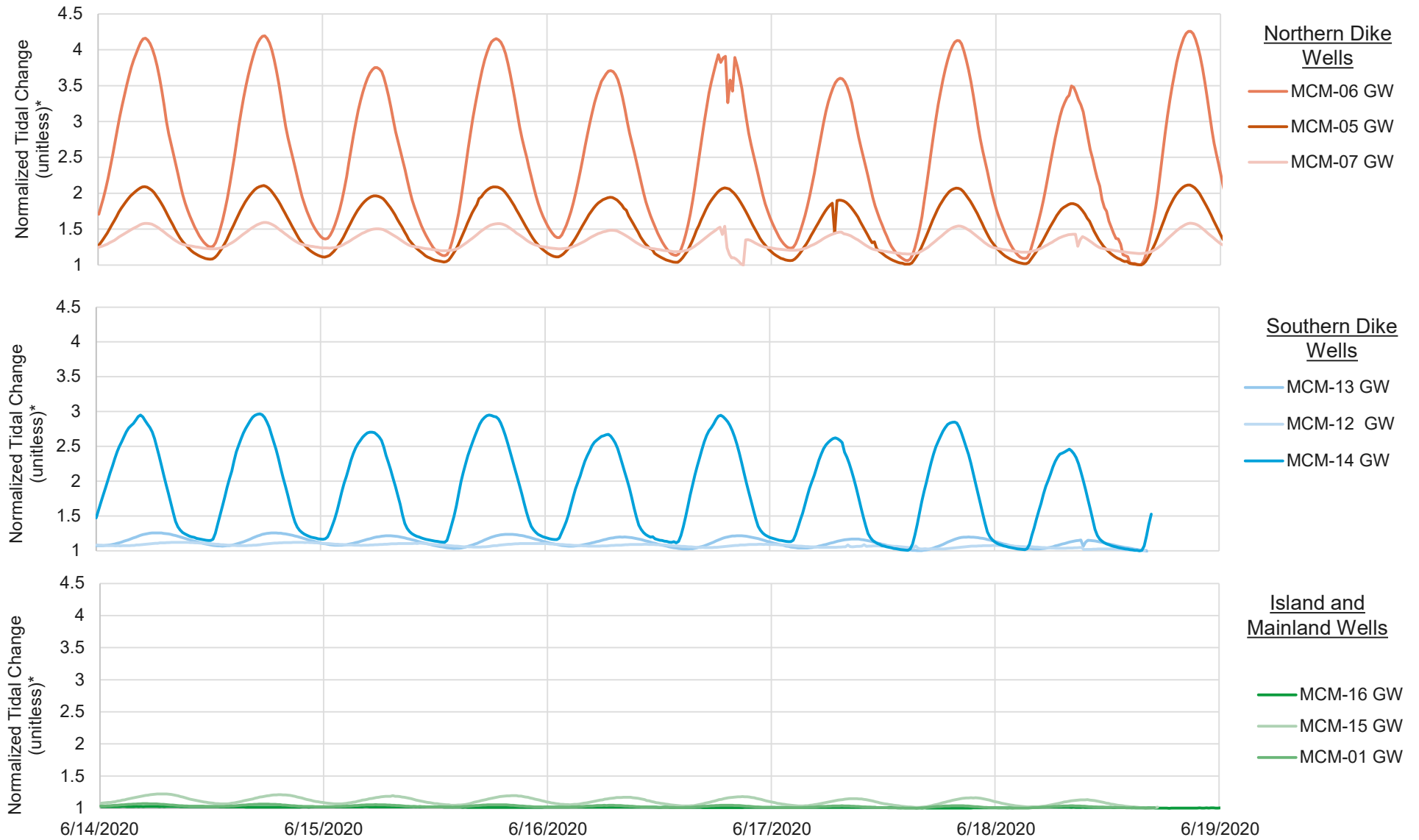


GEORGIA POWER
 ALTERNATIVE SOURCE DEMONSTRATION
 PLANT MCMANUS FORMER ASH POND 1
 BRUNSWICK, GEORGIA

ION RATIO COMPARISON

Design & Consultancy
for natural and
built assets.

FIGURE
7

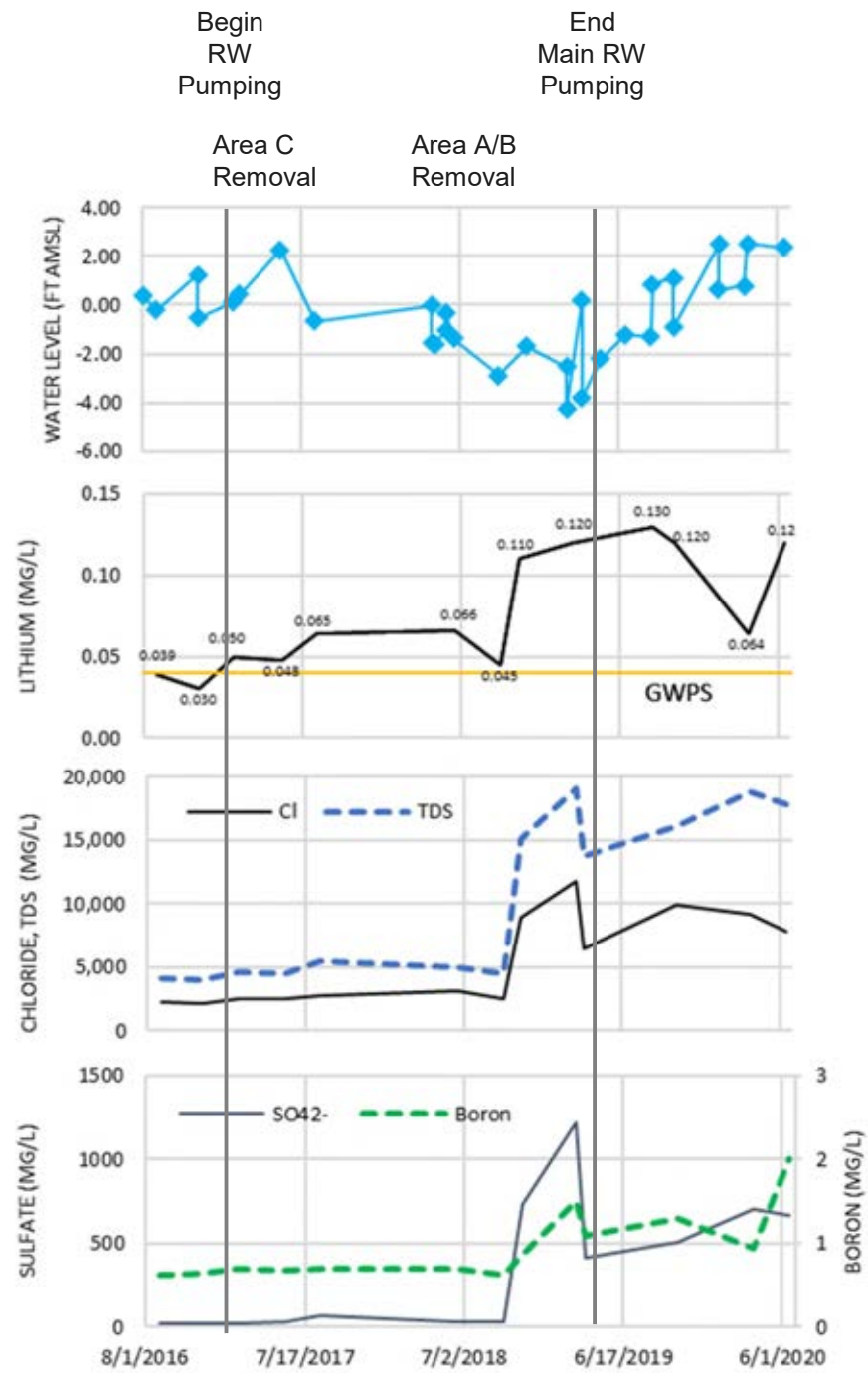


GEORGIA POWER
 LITHIUM ALTERNATIVE SOURCE DEMONSTRATION
 PLANT MCMANUS FORMER ASH POND 1
 BRUNSWICK, GEORGIA

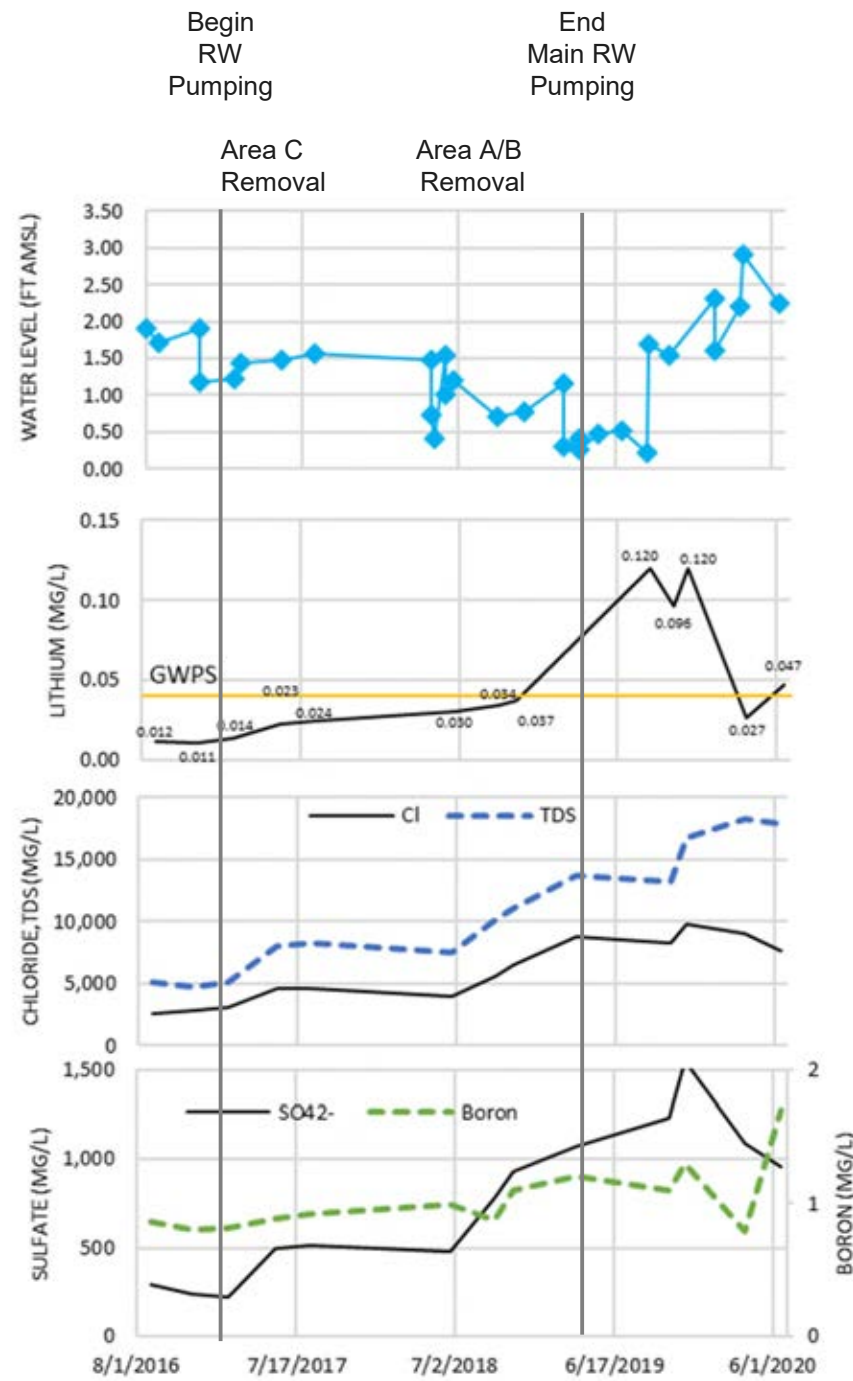
TIDAL INFLUENCE ON MONITORING WELLS

Notes:
 *Normalized Tidal Change determined by dividing water depth by minimum water depth over duration shown.
 GW – Groundwater Depths, shown by solid lines
 Data collected by Resolute Environmental and Water Resources Consulting June 2020.

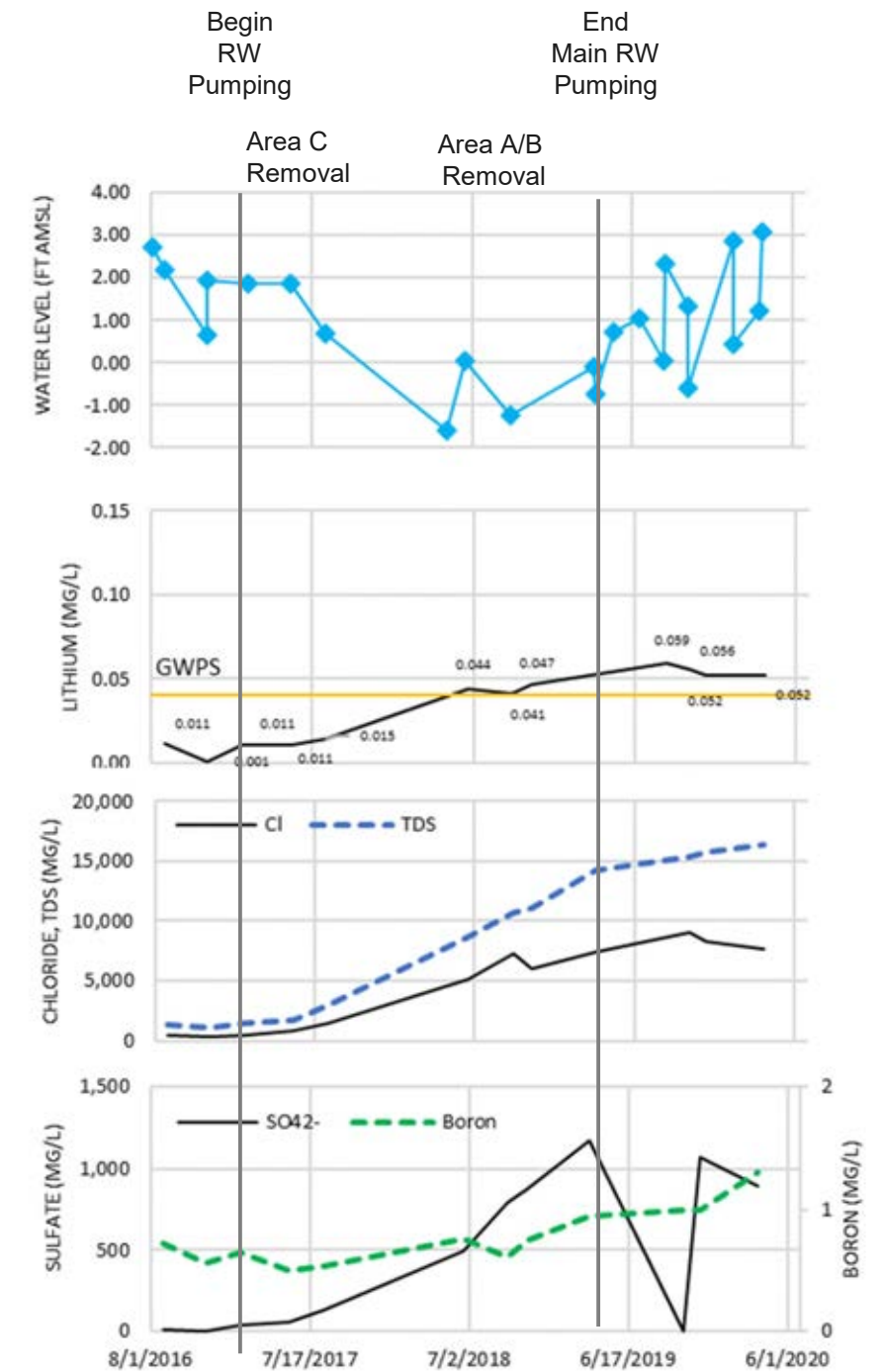
MCM-06



MCM-07



MCM-14



Notes:
 RW – dewatering well
 MG/L – milligrams per liter
 FT AMSL – feet above mean sea level
 GWPS – groundwater protection standard
 TDS – total dissolved solids
 Cl – chloride
 SO₄²⁻ - sulfate
 Start and end dates for pumping and excavations are approximate and are based on dewatering system effluent tracking documents.

GEORGIA POWER
 LITHIUM ALTERNATIVE SOURCE DEMONSTRATION
 PLANT MCMANUS FORMER ASH POND 1
 BRUNSWICK, GEORGIA

CONCENTRATION TRENDS IN SELECT WELLS

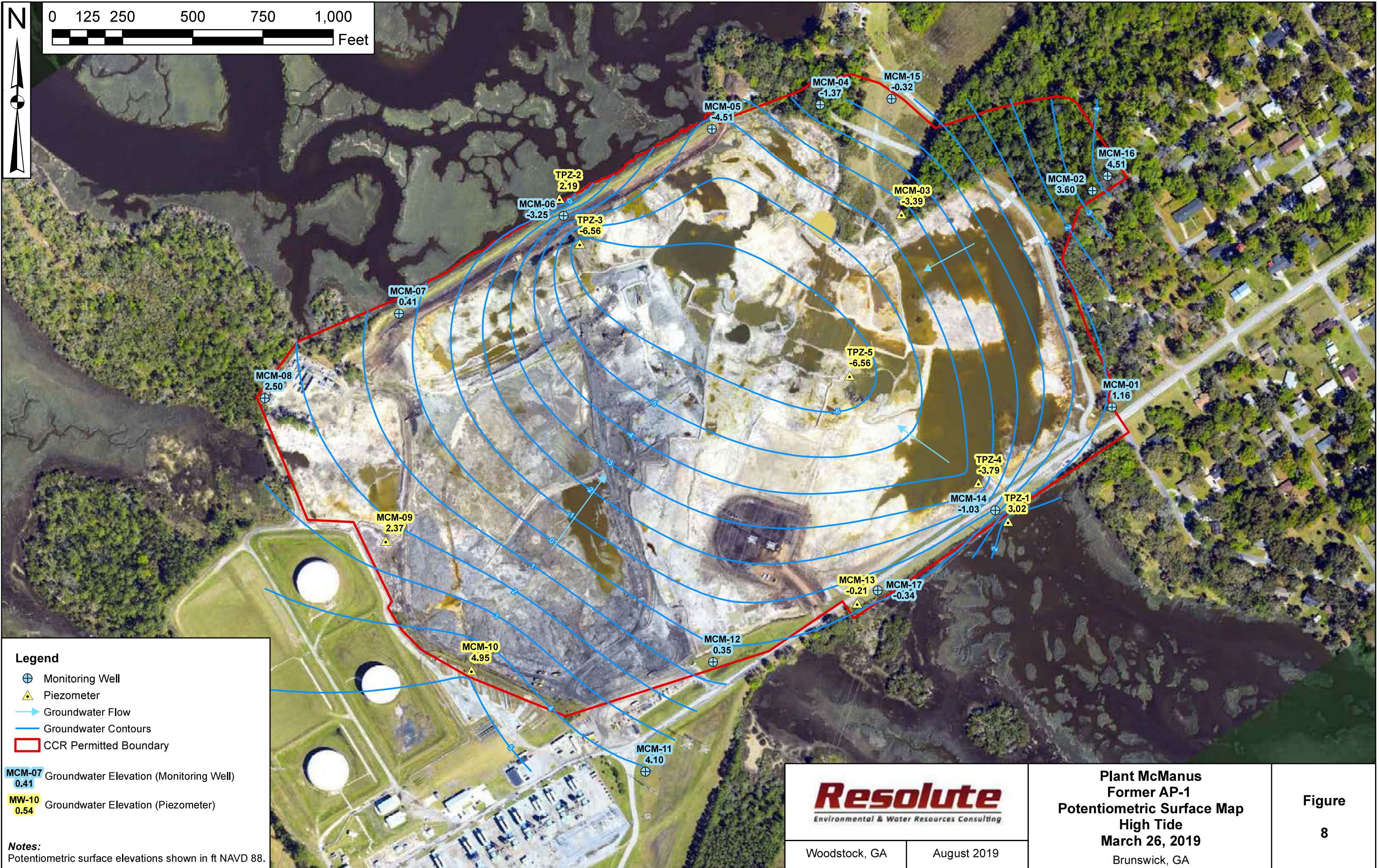
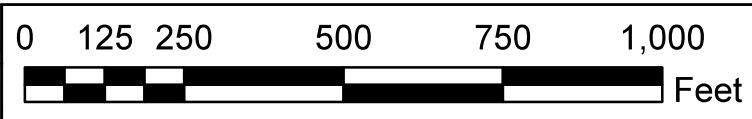
ARCADIS Design & Consultancy for natural and built assets

FIGURE
9

APPENDIX A

Resolute Potentiometric Maps





Legend

- ⊕ Monitoring Well
- ▲ Piezometer
- Groundwater Flow
- Groundwater Contours
- ▭ CCR Permitted Boundary

MCM-07 Groundwater Elevation (Monitoring Well)
0.41

MW-10 Groundwater Elevation (Piezometer)
0.54

Notes:
Potentiometric surface elevations shown in ft NAVD 88.

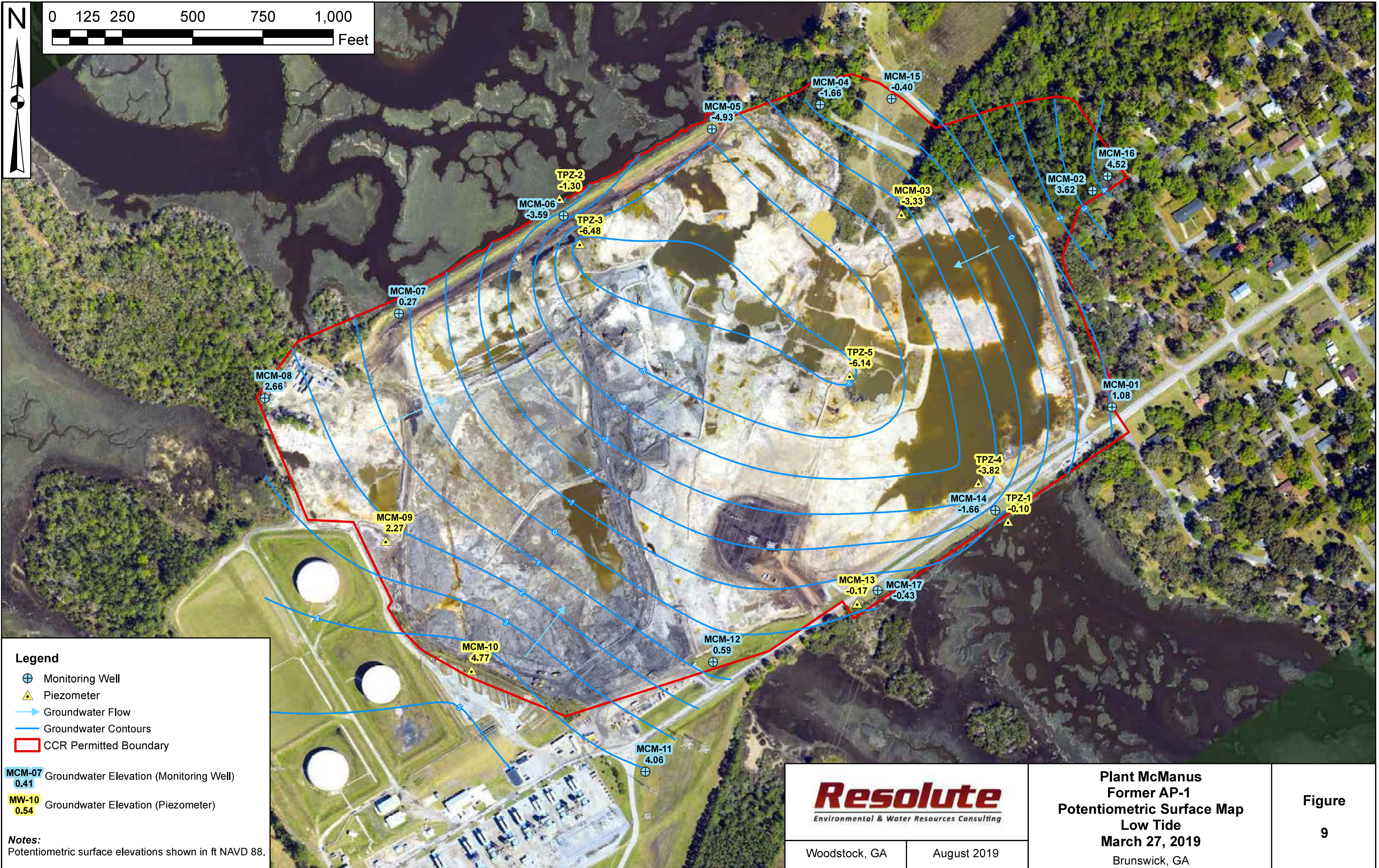
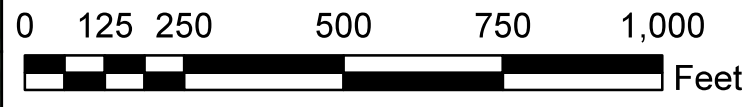
Resolute
Environmental & Water Resources Consulting

Woodstock, GA August 2019

**Plant McManus
Former AP-1
Potentiometric Surface Map
High Tide
March 26, 2019**

Brunswick, GA

**Figure
8**



Legend

- ⊕ Monitoring Well
- ▲ Piezometer
- Groundwater Flow
- Groundwater Contours
- ▭ CCR Permitted Boundary

MCM-07 Groundwater Elevation (Monitoring Well)
0.41

MW-10 Groundwater Elevation (Piezometer)
0.54

Notes:
Potentiometric surface elevations shown in ft NAVD 88.

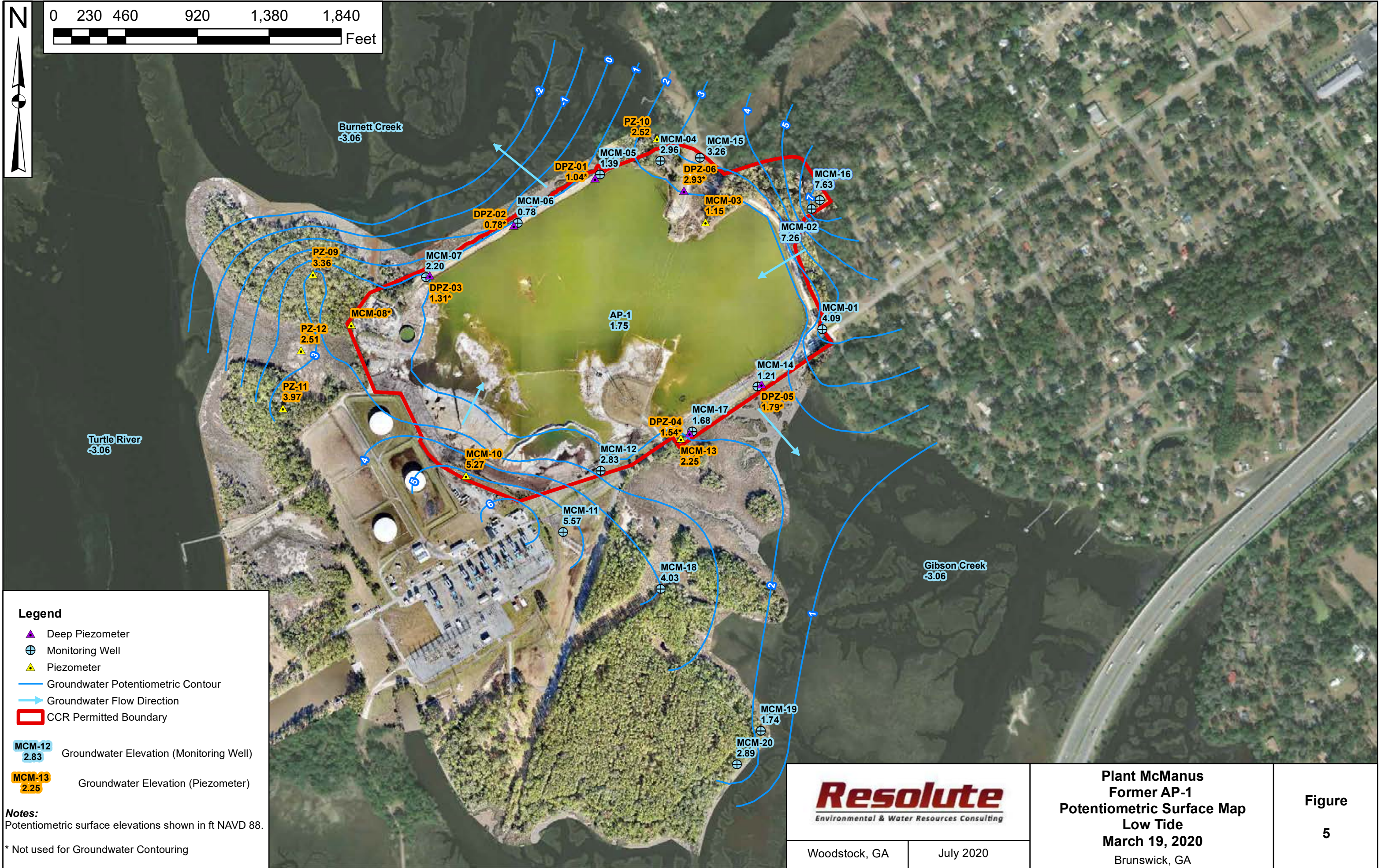
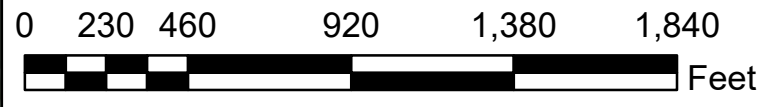
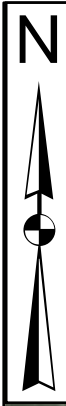
Resolute
Environmental & Water Resources Consulting

Woodstock, GA August 2019

**Plant McManus
Former AP-1
Potentiometric Surface Map
Low Tide
March 27, 2019**

Brunswick, GA

**Figure
9**



X:\ArcGIS\McManus\2020\CCR\Pot Maps

Legend

- Deep Piezometer
- Monitoring Well
- Piezometer
- Groundwater Potentiometric Contour
- Groundwater Flow Direction
- CCR Permitted Boundary

MCM-12
2.83 Groundwater Elevation (Monitoring Well)

MCM-13
2.25 Groundwater Elevation (Piezometer)

Notes:
Potentiometric surface elevations shown in ft NAVD 88.

* Not used for Groundwater Contouring

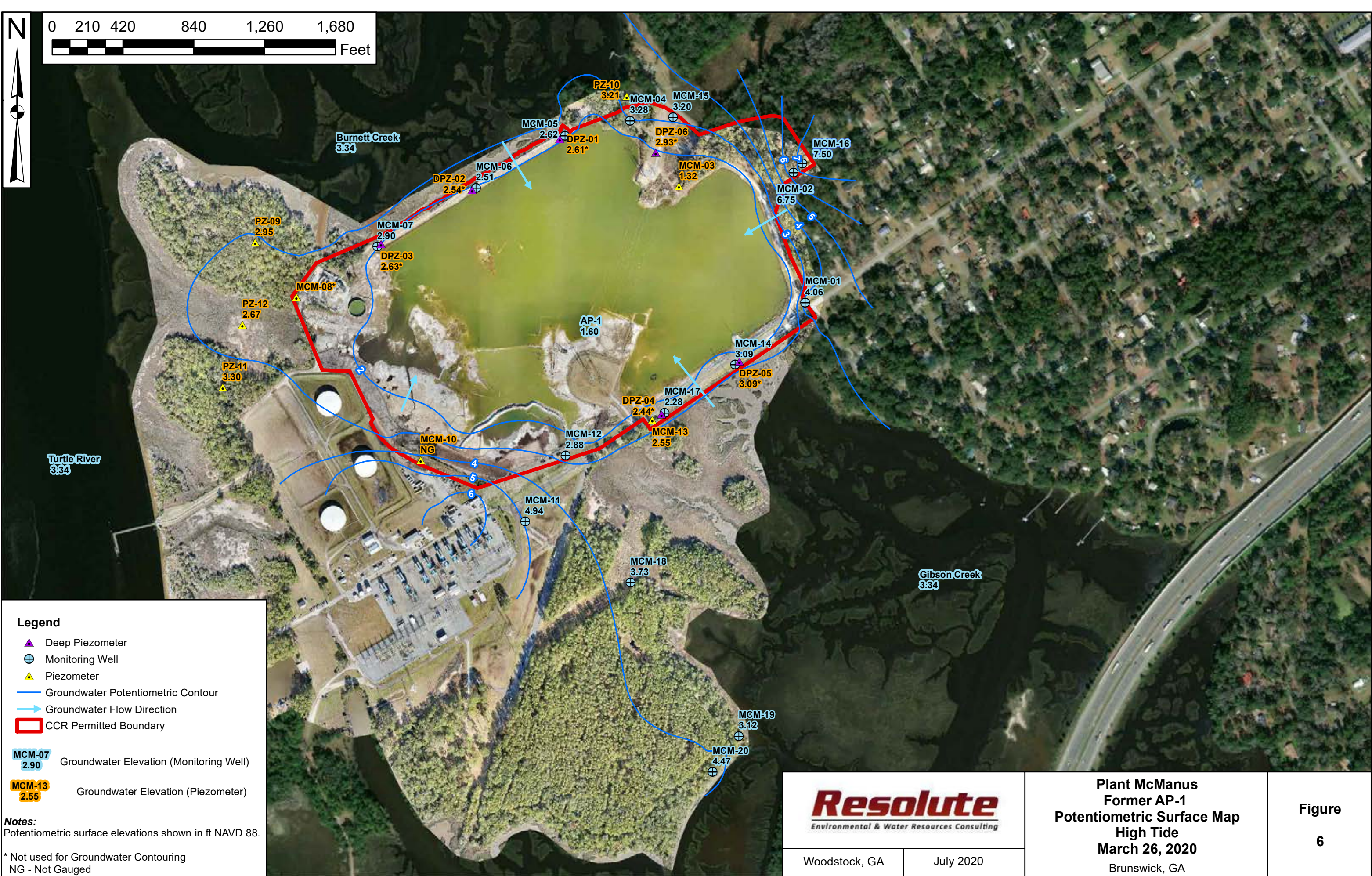
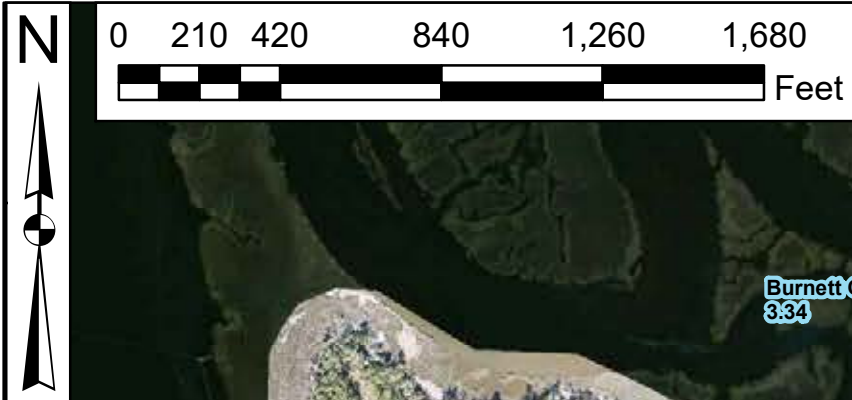


Woodstock, GA

July 2020

Plant McManus
Former AP-1
Potentiometric Surface Map
Low Tide
March 19, 2020
 Brunswick, GA

Figure
5



Legend

- Deep Piezometer
- Monitoring Well
- Piezometer
- Groundwater Potentiometric Contour
- Groundwater Flow Direction
- CCR Permitted Boundary

MCM-07
2.90 Groundwater Elevation (Monitoring Well)

MCM-13
2.55 Groundwater Elevation (Piezometer)

Notes:
Potentiometric surface elevations shown in ft NAVD 88.

* Not used for Groundwater Contouring
NG - Not Gauged

		Plant McManus Former AP-1 Potentiometric Surface Map High Tide March 26, 2020 Brunswick, GA	Figure 6

X:\ArcGIS\McManus\2020\CCR\Pot Maps

APPENDIX B

Resolute Field Sampling Memo, Logs and Analytical Reports –
June 2020



May 8, 2020

Memorandum: Surface Water Sampling Results
Georgia Power Company Plant McManus
Crispen Island Drive, Brunswick, Georgia

To: Ben Hodges, Environmental Affairs
Georgia Power Company

From: Stephen K. Wilson, P.G.
Resolute Environmental & Water Resources Consulting

1.0 PROJECT BACKGROUND

Site Location and Background

The Site is located at 1 Crispen Island Drive in Glynn County, Georgia, approximately 5 miles northwest of the city of Brunswick. The former ash pond 1 (AP-1) is located on the northeastern portion of the plant property (Figure 1). The former AP-1 was constructed in the late 1950's and encompassed approximately 80 acres. Coal ash sluicing operations at former AP-1 commenced in 1959 and ceased in 1972. Excavation and removal of ash from AP-1 commenced in 2016 and was completed in 2019. Since the completion of closure activities, the former AP-1 has filled with water, and the free water elevation within the footprint is currently approximately 2 (two) feet (NAVD88).

Preliminary statistics on the results from background groundwater monitoring, the first annual Appendix IV scan event (August 2019), and the first semiannual assessment monitoring event (November 2019) indicated one or more potentially-elevated levels of arsenic, cobalt, and lithium in groundwater detection monitoring network wells either adjacent to (MCM-05, MCM-06, MCM-07, and MCM-14) or near (MCM-04 and MCM-08) the tidal marshes located on and adjoining the site. On April 10, 2020, pursuant to the Coal Combustion Residuals (CCR) Rule, Georgia Power completed a statistical analysis of the groundwater results, which indicates that cobalt does not exceed the site-specific groundwater protection standard (GWPS) and arsenic and lithium exceed the GWPS in monitoring well MCM-06.

At the request of Georgia Power, Resolute Environmental & Water Resources Consulting, LLC (Resolute) collected surface water and groundwater samples to evaluate concentrations of arsenic, cobalt and lithium in surface water in the tidal salt marsh, free water in the footprint

of former AP-1, and in groundwater monitoring wells MCM-04, MCM-05, MCM-06, MCM-07, MCM-08, and MCM-14. Samples were collected to evaluate nature and extent at the Site. To support this evaluation, samples were collected from locations shown in Figure 1. This memorandum presents the assessment approach, sampling methodology, and results and conclusions of the sampling activities in surface water and groundwater at the Site.

2.0 ASSESSMENT APPROACH

Due to space limitations on the dikes, additional monitoring wells could not be installed between the existing detection monitoring network wells (MCM-04, MCM-05, MCM-06, MCM-07, MCM-08, and MCM-14) and the tidal marsh to evaluate the nature and extent of arsenic, cobalt, and lithium. Consistent with Georgia Power's proactive and comprehensive monitoring approach, additional sampling was completed to assess concentrations of arsenic, cobalt, and lithium in surface water in the tidal salt marsh. Resolute developed 16 sampling points divided equally among four transects (T1 through T4) adjacent to wells MCM-05, MCM-06, MCM-07, and MCM-14. Samples were also collected from groundwater monitoring wells MCM-04, MCM-05, MCM-06, MCM-07, MCM-08, and MCM-14, free water from the top of the water column in the former AP-1 adjacent to these wells, and two upstream surface water sample locations to establish background or natural conditions. To account for potential variability in water quality from tides, samples were collected at both high and low tide. Sampling locations are shown on Figure 1.

Surface water samples collected along transects T1 through T4 were collected from the top of the water column, approximately zero to six inches below the surface of the water, at both high and low tides and also from the bottom of the water column, approximately 12 inches above the marsh bottom, at high tide for the second, third, and fourth locations along each transect (e.g., T1-2, T1-3, T1-4 for transect T1).

Two background surface water sampling locations were identified and sampled to establish a dataset of naturally occurring levels of arsenic, cobalt, and lithium in surface water in the tidal marsh. The low tide background sample location (BG-1LT) was selected in Cowpen Creek, at a point which is hydraulically upgradient of both the junction with Burnett Creek and Crispen Island. At low tide, surface water flow is south from Cowpen Creek, toward the junctions with Burnett Creek and the Turtle River. The high tide background sample location (BG-2HT) was selected in the Turtle River, at a point which is upstream of Crispen Island during the incoming high tide.

Samples were initially submitted under Chain-of-Custody (COC) protocol to Pace Laboratories in Atlanta, Georgia on February 3, 2020, except for samples from transect T4, which were collected at a later date. Pace subsequently transferred the initial samples to their Asheville, North Carolina laboratory as further explained in Section 4.0 below, and the samples from transect T4, which were collected on March 18, 2020 were submitted directly to Pace's Asheville, North Carolina laboratory on March 20, 2020. Samples were analyzed for total and dissolved arsenic, cobalt, and lithium using EPA SW-846 Method 6020B.

To evaluate the data, surface water sample results for arsenic were compared to Georgia's In-Stream Water Quality Standard (ISWQS) for marine estuary environments, and groundwater samples were compared to the USEPA Maximum Contaminant Level (MCL) and the site-specific Groundwater Protection Standard (GWPS). Cobalt and lithium do not have ISWQS or recommended national ambient water quality criteria to compare surface water sample results or an MCL to compare groundwater results. Due to lack of surface water screening criteria for cobalt, surface water sample results were compared to both the observed background concentrations in surface water and the USEPA Regional Screening Level (RSL), which is a conservative approach for surface water comparison and is typically used to evaluate groundwater results.. Groundwater sample results for cobalt and lithium were compared to the RSL and site-specific GWPS since neither have an MCL.

3.0 SAMPLING METHODOLOGY

Surface water and groundwater samples were collected in accordance with the *Work Plan for Surface Water Sampling, Georgia Power Company Plant McManus, Former Ash Pond AP-1, Brunswick, Georgia*, dated January 2020, and prepared by Resolute (Work Plan) (Appendix 1). The Work Plan referenced USEPA Region 4 *Science and Ecosystem Support Division (SESD), Operating Procedure, Surface Water Sampling* SESDPROC-201-R3 (February 28, 2013) as a guide for surface water sampling.

The fourth surface water location in each transect (e.g., T1-4) was generally the farthest point from the ash pond dike along each transect that contained sufficient water for sampling at low tide. The first three surface water locations on each transect (e.g., T1-1 through T1-3) had insufficient water for sampling at low tide, and the samples from these locations were collected when the minimum level of surface water sufficient for sampling and access was present (approximately six inches to one foot) near low tide.

At each surface water sample location (tidal salt marsh, background, and free water in former AP-1), one bottle preserved with nitric acid was collected for total metals analysis, and a separate unpreserved bottle was collected for dissolved metals analysis. The unpreserved sample was filtered by the laboratory prior to analysis.

Groundwater sampling was conducted using the site Groundwater Monitoring Plan (GWMP) and USEPA Region 4 Field Quality and Technical Procedures as guides. Groundwater samples were collected for total metals analysis, and a sample for dissolved metals analysis was collected if sample turbidity exceeded 10 Nephelometric Turbidity Units (NTUs), in accordance with the site GWMP. Groundwater samples were collected at low and high tides in wells which were immediately adjacent to corresponding transects (MCM-05, -06, -07, and -14) and were collected at low tide in wells which were not immediately adjacent to transects (MCM-04 and -08). The latter were collected at low tide as a conservative approach based on groundwater flow toward the tidal marsh at low tide.

4.0 RESULTS

The total and dissolved metals samples were analyzed by Pace Atlanta in separate batches. Surface water samples contained high concentrations of total dissolved solids (TDS) (i.e., high concentrations of non-target ions such as sodium and chloride) because the surface water in the marsh is brackish. The laboratory reported that the high concentrations of non-target ions in the samples caused instrumentation interference problems and presented difficulty in reading the low concentrations of the arsenic, lithium, and cobalt target analytes for the instrumentation available in Pace's Atlanta laboratory.

The initial laboratory analytical results also showed the dissolved (filtered) concentrations being several times greater than the total concentrations. The elevated concentrations observed in the dissolved (filtered) results were not accurate, as the total samples collected at the same time were collected into an acidified bottle designed to preserve metals concentrations, including those potentially adsorbed to suspended solids in water. The turbidities of the samples were low, with many less than 10 NTUs; therefore, the total and dissolved concentrations should have been similar. For these reasons, the initial laboratory results were deemed to be suspect, but could not be checked by data validation procedures because the total and dissolved samples had been analyzed as separate laboratory batches. As a result, the remaining volumes of the samples were sent to Pace's laboratory in Asheville, NC for analysis using Method 6020B/3010A on a new mass spectrometer instrument which utilizes both collision cell technology and dual gas mode to make it less susceptible to interference caused by the high concentrations of non-target ions (e.g., salts) in the samples.

Samples collected along transect T4 submitted to Pace's laboratory in Asheville, NC on March 20, 2020 and did not require reanalysis.

The results of the analysis from Pace's Asheville laboratory are summarized on Tables 1 and 2, and the laboratory analytical reports are provided in Appendix 2. The total and dissolved concentrations are similar, as would be expected for samples with low turbidities such as these.

Arsenic

Arsenic was detected at low levels ranging from 0.0013 J to 0.0035 milligrams per liter (mg/L) in surface water samples, including both background samples. These results are well below the Georgia ISWQS chronic standard for dissolved arsenic (0.036 mg/L) for marine estuary environments. Arsenic in samples collected from background surface water sample locations ranged from 0.0014 J to 0.0023 mg/L. Surface water concentrations along transects T1 through T4 ranged from not detected (<0.0012 mg/L) to 0.0035 mg/L. Similar concentrations were detected in the free water samples in former AP-1 at both high and low tides ranging from 0.0013 J to 0.0025 mg/L.

Arsenic was detected in groundwater samples collected from MCM-06 (0.400 to 0.480 mg/L), above the MCL (0.010 mg/L) and site-specific GWPS (0.031 mg/L), and in MCM-07 (0.016 to

0.020 mg/L), above the MCL, but below the site-specific GWPS. Arsenic was detected at trace values between the laboratory method detection and reporting limit in MCM-04, MCM-05, and MCM-08, well below the MCL and site-specific GWPS. Arsenic was not detected in MCM-14. Concentrations in each well do not appear to be significantly affected by tidal stage.

Cobalt

Cobalt was detected at concentrations ranging from 0.0013 J to 0.0049 mg/L in surface water samples, which are slightly above background (<0.0010 mg/L), but below the RSL of 0.006 mg/L. As stated above the RSL is typically used to evaluate groundwater results and is a conservative approach for surface water comparison.

Cobalt detections in groundwater ranged from 0.0015 J to 0.0031 mg/L, which are below the RSL and site-specific GWPS of 0.031 mg/L. Concentrations in each well do not appear to be significantly affected by tidal stage. As documented in the introduction, cobalt is not an SSL in groundwater. Observed surface water data is substantially lower than cobalt in background groundwater (0.031 mg/L) and below the RSL; therefore, cobalt is no longer a constituent of interest in surface water.

Lithium

Lithium in background surface water samples ranged from 0.090 to 0.099 mg/L, which is higher than the RSL of 0.040 mg/L, which is typically used to evaluate groundwater results and is a conservative approach for surface water comparison. Lithium was detected at concentrations from 0.019 J to 0.11 mg/L in surface water samples, with the highest dissolved analysis at 0.10 mg/L in T3-4HT, which is above the RSL, but consistent with background. In comparing the 0.099 mg/L background to the 0.10 mg/L detection, the results are almost identical with a 1% difference. The laboratory reported a Relative Percent Difference (RPD) of 10% in their quality control samples for this batch of samples. Therefore, the sole detection exceeding background by 1% is well within the laboratory's repeatability range of 10%.

Lithium was detected at trace values ranging from 0.012 J to 0.022 J mg/L in free water samples in the former AP-1 and did not appear to vary at high and low tides.

In general, observed lithium concentration in background and transect surface water samples at high tide were greater than those observed at low tide. Lithium is a naturally-occurring element in seawater, and concentrations of lithium in seawater are documented to range from 0.1 to 0.2 mg/L¹. The increased concentrations observed at high tide in surface water are likely attributable to natural variability from the influx of seawater at high tide.

Lithium was detected in groundwater samples collected from MCM-06 (0.094 to 0.11 mg/L), MCM-07 (0.044 J to 0.062 mg/L), and MCM-14 (0.035 J to 0.055 mg/L), above the RSL (0.04 mg/L). Lithium was detected at trace values (between the laboratory method detection and

¹ "Lithium Occurrence", Institute of Ocean Energy, Saga University, Japan

reporting limit) in MCM-05, below the RSL. Lithium was not detected in MCM-04 or MCM-08. Concentrations in MCM-06 well appear to exhibit higher concentrations at high tide and lower concentrations at low tide. Other wells do not appear to be significantly affected by tidal stage. Lithium results in groundwater are generally consistent with previous sampling results.

5.0 CONCLUSIONS

Preliminary statistics on results from background groundwater monitoring and subsequent groundwater monitoring events (August and November 2019) indicated one or more potentially-elevated levels of arsenic, cobalt, and lithium in groundwater detection monitoring network wells adjacent to (MCM-05, MCM-06, MCM-07, and MCM-14) or near (MCM-08 and MCM-14) the tidal marshes located on and adjoining the site. Due to space limitations on the dikes, additional monitoring wells could not be installed between the existing detection monitoring network wells (MCM-04, MCM-05, MCM-06, MCM-07, MCM-08, and MCM-14) and the tidal marsh to evaluate the nature and extent of arsenic, cobalt, and lithium. Consistent with Georgia Power's proactive and comprehensive monitoring approach, surface water, groundwater, and free water sampling was completed to assess concentrations of arsenic, cobalt, and lithium in surface water in the tidal salt marsh.

Surface water sampling provided data that arsenic, cobalt, and lithium concentrations are below surface water comparison criteria or within the range of background levels observed in background surface water samples. Arsenic, cobalt, and lithium concentrations in free water samples from within the pond are below surface water comparison criteria and below levels observed in background surface water samples. On April 10, 2020, pursuant to the CCR Rule, Georgia Power completed a statistical analysis of the groundwater results, which indicates that cobalt does not exceed the site-specific GWPS and arsenic and lithium exceed the site-specific GWPS in monitoring well MCM-06. Based on the data collected, groundwater exceeding the site-specific GWPS in MCM-06 does not indicate impacts to free water quality in former AP-1 or surface water quality adjacent to Georgia Power's Plant McManus property.

TABLES

Table 1
Surface Water and Pond Water Sample Results
Georgia Power Company Plant McManus, Brunswick, Georgia

Location	Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Cobalt (mg/l)	Dissolved Cobalt (mg/l)	Lithium (mg/l)	Dissolved Lithium (mg/l)
Surface Water Samples						
ISWQS (Non-drinking water uses)	N/A	0.050	N/A	N/A	N/A	N/A
ISWQS (Estuarine Waters)	N/A	0.069 (Acute) 0.036 (Chronic)	N/A	N/A	N/A	N/A
Site Specific Background (highest of BG-1LT and BG-2HT)	0.0023	0.0016J	<0.0010	<0.0010	0.099	0.099
Background Surface Water						
BG-1LT	0.0019J	0.0014J	<0.0010	<0.0010	0.09	0.098
BG-2HT	0.0023	0.0016J	<0.0010	<0.0010	0.099	0.099
Surface Water Transects						
T1-1HT	0.0016J	<0.0012	<0.0010	<0.0010	0.039J	0.038J
T1-1LT	<0.0012	<0.0012	<0.0010	<0.0010	0.024J	0.022J
T1-2HT	<0.0012	0.0015J	<0.0010	<0.0010	0.11	0.088
T1-2HTS	<0.0012	0.0015J	<0.0010	<0.0010	0.055	0.061
T1-2LT	<0.0012	<0.0012	<0.0010	<0.0010	0.022J	0.024J
T1-3HT	<0.0012	0.0016J	<0.0010	<0.0010	0.092	0.08
T1-3HTS	<0.0012	0.0015J	<0.0010	<0.0010	0.067	0.072
T1-3LT	<0.0012	<0.0012	<0.0010	<0.0010	0.022J	0.019J
T1-4HT	<0.0012	0.0019J	<0.0010	<0.0010	0.08	0.086
T1-4HTS	0.0014J	0.0016J	<0.0010	<0.0010	0.081	0.083
T1-4LT	0.0016J	0.0016J	<0.0010	<0.0010	0.09	0.09
T2-1HT	0.0014	0.0014J	<0.00050	<0.0010	0.052	0.059
T2-2HT	0.0019	0.0015J	<0.00050	<0.0010	0.1	0.084
T2-2HTS	0.0019	0.0014J	<0.00050	<0.0010	0.073	0.06
T2-2LT	0.0018	0.0016J	<0.00050	<0.0010	0.063	0.057
T2-3HT	0.0016J	0.0015J	<0.0010	<0.0010	0.099	0.093
T2-3HTS	0.0018J	0.0015J	<0.0010	<0.0010	0.11	0.094
T2-3LT	0.002	0.0012J	<0.0010	<0.0010	0.049J	0.041J
T2-4HT	0.0016J	0.0020J	<0.0010	<0.0010	0.091	0.092
T2-4HTS	0.0015J	0.0016J	<0.0010	<0.0010	0.085	0.088
T2-4LT	0.0015J	0.0015J	<0.0010	<0.0010	0.075	0.077
T3-1HT	0.0018J	0.0016J	<0.0010	<0.0010	0.076	0.075
T3-2HT	0.0015J	0.0017J	<0.0010	<0.0010	0.097	0.087
T3-2HTS	0.0013J	0.0017J	<0.0010	<0.0010	0.075	0.078
T3-2LT	0.0029	0.0017J	<0.0010	<0.0010	0.077	0.079
T3-3HT	0.0021	0.0017J	<0.0010	<0.0010	0.081	0.088
T3-3HTS	0.0018J	0.0019J	<0.0010	<0.0010	0.08	0.081
T3-3LT	0.0018J	0.0016J	<0.0010	<0.0010	0.084	0.078
T3-4HT	0.0018J	0.0019J	<0.0010	<0.0010	0.087	0.1
T3-4HTS	0.0014J	0.0016J	<0.0010	<0.0010	0.085	0.09
T3-4LT	0.0012J	0.0015J	<0.0010	<0.0010	0.072	0.072
T4-1L	0.0034	0.0018J	<0.0010	<0.0010	0.076	0.056
T4-2L	0.0014J	0.0012J	<0.0010	<0.0010	0.043J	0.061
T4-3L	0.0035	0.0021	0.002	<0.0010	0.053	0.037J

Location	Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Cobalt (mg/l)	Dissolved Cobalt (mg/l)	Lithium (mg/l)	Dissolved Lithium (mg/l)
T4-4L	0.0031	<0.0012	<0.0010	<0.0010	0.062	0.036J
T4-1HS	0.0012J	<0.0012	<0.0010	<0.0010	0.042J	0.058
T4-2HS	<0.0012	0.0013J	<0.0010	<0.0010	0.043J	0.064
T4-3HS	<0.0012	<0.0012	<0.0010	<0.0010	0.035J	0.051
T4-4HS	<0.0012	<0.0012	<0.0010	<0.0010	0.047J	0.041J
T4-1HB	<0.0012	<0.0012	<0.0010	<0.0010	0.036J	0.033J
T4-2HB	0.0015J	<0.0012	<0.0010	<0.0010	0.048J	0.042J
T4-3HB	<0.0012	0.0023	<0.0010	0.0049	0.036J	0.064
T4-4HB	<0.0012	0.0017J	<0.0010	0.0036	0.035J	0.066
<i>Ash Pond Water</i>						
MCM-05HT ASHPOND	0.0019J	0.0013J	<0.0010	<0.0010	0.018J	0.020J
MCM-05LT ASHPOND	0.0017J	<0.0012	<0.0010	<0.0010	0.012J	0.021J
MCM-06HT ASHPOND	0.0025	0.0012J	<0.0010	<0.0010	0.020J	0.021J
MCM-06LT ASHPOND	0.0017J	0.0013J	<0.0010	<0.0010	0.012J	0.022J
MCM-07HT ASHPOND	0.0019J	<0.0012	<0.0010	<0.0010	0.020J	0.020J
MCM-07LT ASHPOND	0.0022	<0.0012	<0.0010	<0.0010	0.019J	0.019J
POND 4L	0.0015J	0.0013J	<0.0010	0.0013J	0.022J	0.022J
POND 4H	0.0012J	0.0013J	<0.0010	0.0016J	0.016J	0.020J

Notes: N/A - Not Applicable or Not Available

GWPS - Groundwater Protection Standard

ISWQS - Georgia In-Stream Water Quality Standard

Results shown in milligrams per liter (mg/l)

"<" - Not detected at the laboratory's Method Detection Limit (MDL) shown

"J" - Estimated concentration greater than the laboratory's MDL, but less than the laboratory's Reporting Limit

Table 2
Groundwater Wells Sample Results
Georgia Power Company Plant McManus, Brunswick, Georgia

Location	Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Cobalt (mg/l)	Dissolved Cobalt (mg/l)	Lithium (mg/l)	Dissolved Lithium (mg/l)
Groundwater Samples						
MCL or RSL GWPS	0.010 MCL	N/A	0.006 RSL	N/A	0.04 RSL	N/A
Site Specific Background GWPS	0.031	N/A	0.031	N/A	<RSL	N/A
MCM-04LT	0.0016J	<0.0012	0.003	0.0026	<0.0084	<0.0084
MCM-05HT	0.0013J	<0.0012	<0.0010	<0.0010	0.017J	0.024J
MCM-05LT	0.0016J	<0.0012	<0.0010	<0.0010	0.023J	0.021J
MCM-06HT	0.4	0.48	<0.0010	<0.0010	0.096	0.11
MCM-06LT	0.44	0.47	<0.0010	<0.0010	0.094	0.094
MCM-07HT	0.018	0.02	<0.0010	<0.0010	0.047J	0.048J
MCM-07LT	0.016	0.018	<0.0010	<0.0010	0.044J	0.062
MCM-08LT	0.0019J	0.0013J	0.0020J	0.0020J	<0.0084	<0.0084
MCM-14L	<0.0012	<0.0012	<0.0010	0.0015J	0.040J	0.055
MCM-14H	<0.0012	<0.0012	<0.0010	0.0031	0.035J	0.044J

Notes: N/A - Not Applicable or Not Available

GWPS - Groundwater Protection Standard

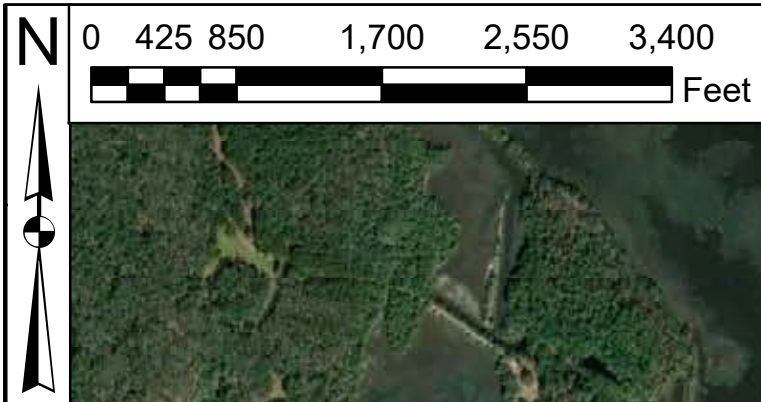
ISWQS - Georgia In-Stream Water Quality Standard

Results shown in milligrams per liter (mg/l)

"<" - Not detected at the laboratory's Method Detection Limit (MDL) shown

"J" - Estimated concentration greater than the laboratory's MDL, but less than the laboratory's Reporting Limit

FIGURES



X:\ArcGIS\McManus\ASD2020\AlternateSourceDemonstration\SamplingLocations



Legend

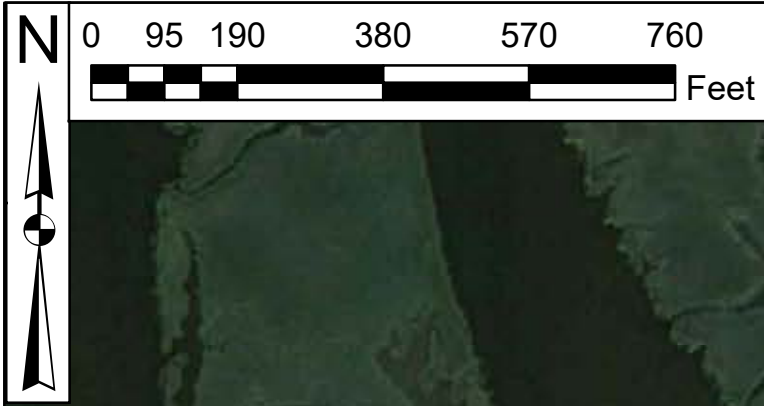
- Surface Water
- Pond Sample
- Background Surface Water Sample
- CCR Permitted Boundary

Resolute
Environmental & Water Resources Consulting

Woodstock, GA	March 2020
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**Plant McManus
Surface Water
Sample Collection Location**
Brunswick, GA

**Figure
1**



X:\ArcGIS\Manus\ASD2020\AlternateSourceDemonstration\SamplingLocations



Legend

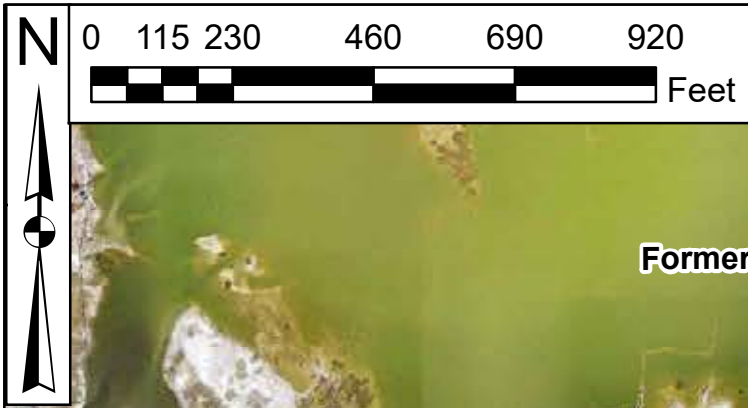
- Surface Water Sample
- Pond Sample
- CCR Permitted Boundary

Resolute
Environmental & Water Resources Consulting

Woodstock, GA	April 2020
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**Plant McManus
Surface Water
Sample Collection Locations**
Brunswick, GA

**Figure
2**



X:\ArcGIS\McManus\ASD2020\AlternateSourceDemonstration\SamplingLocations



Legend

- Surface Water Sample
- Pond Sample
- CCR Permitted Boundary

Resolute
Environmental & Water Resources Consulting

Woodstock, GA	April 2020
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**Plant McManus
Surface Water
Sample Collection Locations**
Brunswick, GA

**Figure
3**

APPENDIX: LABORATORY ANALYTICAL REPORTS

Final Laboratory Reports - Pace Analytical Services, Asheville (Huntersville), NC

March 31, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant McManus
Pace Project No.: 92466089

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McManus
Pace Project No.: 92466089

Pace Analytical Services Asheville

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus
Pace Project No.: 92466089

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92466089001	T2-1HT	Water	02/01/20 13:55	02/04/20 08:00
92466089002	T2-2HT	Water	02/01/20 14:32	02/04/20 08:00
92466089003	T2-2HTS	Water	02/01/20 14:28	02/04/20 08:00
92466089004	T2-2LT	Water	02/02/20 13:38	02/04/20 08:00
92466089005	T2-3HT	Water	02/01/20 14:50	02/04/20 08:00
92466089006	T2-3HTS	Water	02/01/20 14:46	02/04/20 08:00
92466089007	T2-3LT	Water	02/02/20 11:20	02/04/20 08:00
92466089008	T2-4HT	Water	02/01/20 15:14	02/04/20 08:00
92466089009	T2-4HTS	Water	02/01/20 15:00	02/04/20 08:00
92466089010	T2-4LT	Water	02/02/20 09:46	02/04/20 08:00
92466089011	T1-1HT	Water	02/01/20 14:08	02/04/20 08:00
92466089012	T1-1LT	Water	02/01/20 09:50	02/04/20 08:00
92466089013	T1-2HT	Water	02/01/20 14:20	02/04/20 08:00
92466089014	T1-2HTS	Water	02/01/20 14:16	02/04/20 08:00
92466089015	T1-2LT	Water	02/01/20 10:16	02/04/20 08:00
92466089016	T1-3HT	Water	02/01/20 13:56	02/04/20 08:00
92466089017	T1-3HTS	Water	02/01/20 13:52	02/04/20 08:00
92466089018	T1-3LT	Water	02/01/20 10:06	02/04/20 08:00
92466089019	T1-4HT	Water	02/01/20 13:40	02/04/20 08:00
92466089020	T1-4HTS	Water	02/01/20 13:34	02/04/20 08:00
92466089021	T1-4LT	Water	02/01/20 09:56	02/04/20 08:00
92466089022	T3-1HT	Water	02/02/20 14:35	02/04/20 08:00
92466089023	T3-2HT	Water	02/02/20 14:34	02/04/20 08:00
92466089024	T3-2HTS	Water	02/02/20 14:28	02/04/20 08:00
92466089025	T3-2LT	Water	02/03/20 13:30	02/04/20 08:00
92466089026	T3-3HT	Water	02/02/20 14:10	02/04/20 08:00
92466089027	T3-3HTS	Water	02/02/20 14:08	02/04/20 08:00
92466089028	T3-3LT	Water	02/03/20 12:12	02/04/20 08:00
92466089029	T3-4HT	Water	02/02/20 13:50	02/04/20 08:00
92466089030	T3-4HTS	Water	02/02/20 13:44	02/04/20 08:00
92466089031	T3-4LT	Water	02/03/20 10:40	02/04/20 08:00
92466089032	MCM-05HT	Water	02/02/20 14:46	02/04/20 08:00
92466089033	MCM-05LT	Water	02/03/20 09:47	02/04/20 08:00
92466089034	MCM-06HT	Water	02/01/20 13:55	02/04/20 08:00
92466089035	MCM-06LT	Water	02/02/20 09:00	02/04/20 08:00
92466089036	MCM-07HT	Water	02/01/20 14:20	02/04/20 08:00
92466089037	MCM-07LT	Water	02/01/20 10:15	02/04/20 08:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus

Pace Project No.: 92466089

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92466089038	DUP-01	Water	02/03/20 00:00	02/04/20 08:00
92466089039	MCM-05HT ASHPOND	Water	02/02/20 14:30	02/04/20 08:00
92466089040	MCM-06LT ASHPOND	Water	02/02/20 08:50	02/04/20 08:00
92466089041	MCM-05LT ASHPOND	Water	02/03/20 09:45	02/04/20 08:00
92466089042	MCM-07HT ASHPOND	Water	02/01/20 14:20	02/04/20 08:00
92466089043	MCM-07LT ASHPOND	Water	02/01/20 09:40	02/04/20 08:00
92466089044	MCM-06HT ASHPOND	Water	02/01/20 13:55	02/04/20 08:00
92466089045	BG-1LT	Water	02/02/20 08:58	02/04/20 08:00
92466089046	BG-2HT	Water	02/02/20 15:04	02/04/20 08:00
92466089047	MCM-04LT	Water	02/03/20 11:35	02/04/20 10:48
92466089048	MCM-08LT	Water	02/03/20 12:41	02/04/20 10:48

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus

Pace Project No.: 92466089

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92466089001	T2-1HT	EPA 6020B	BG2	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089002	T2-2HT	EPA 6020B	BG2	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089003	T2-2HTS	EPA 6020B	BG2	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089004	T2-2LT	EPA 6020B	BG2	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089005	T2-3HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089006	T2-3HTS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089007	T2-3LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089008	T2-4HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089009	T2-4HTS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089010	T2-4LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089011	T1-1HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089012	T1-1LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089013	T1-2HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089014	T1-2HTS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A
92466089015	T1-2LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089016	T1-3HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089017	T1-3HTS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089018	T1-3LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089019	T1-4HT	EPA 6020B	JOR	3	PASI-A

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus
Pace Project No.: 92466089

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	JOR	3	PASI-A
92466089020	T1-4HTS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089021	T1-4LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089022	T3-1HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089023	T3-2HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089024	T3-2HTS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089025	T3-2LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089026	T3-3HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089027	T3-3HTS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089028	T3-3LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089029	T3-4HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089030	T3-4HTS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089031	T3-4LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089032	MCM-05HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089033	MCM-05LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089034	MCM-06HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089035	MCM-06LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089036	MCM-07HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089037	MCM-07LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus

Pace Project No.: 92466089

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92466089038	DUP-01	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089039	MCM-05HT ASHPOND	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089040	MCM-06LT ASHPOND	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089041	MCM-05LT ASHPOND	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92466089042	MCM-07HT ASHPOND	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2, JOR	3	PASI-A
92466089043	MCM-07LT ASHPOND	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2, JOR	3	PASI-A
92466089044	MCM-06HT ASHPOND	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2, JOR	3	PASI-A
92466089045	BG-1LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2, JOR	3	PASI-A
92466089046	BG-2HT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2, JOR	3	PASI-A
92466089047	MCM-04LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2, JOR	3	PASI-A
92466089048	MCM-08LT	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	BG2	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus

Pace Project No.: 92466089

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92466089001	T2-1HT					
EPA 6020B	Arsenic	0.0014	mg/L	0.0010	02/25/20 10:30	
EPA 6020B	Lithium	0.052	mg/L	0.025	02/25/20 10:30	
EPA 6020B	Arsenic, Dissolved	0.0014J	mg/L	0.0020	02/26/20 15:45	D3
EPA 6020B	Lithium, Dissolved	0.059	mg/L	0.050	02/26/20 15:45	
92466089002	T2-2HT					
EPA 6020B	Arsenic	0.0019	mg/L	0.0010	02/25/20 10:39	
EPA 6020B	Lithium	0.10	mg/L	0.025	02/25/20 10:39	
EPA 6020B	Arsenic, Dissolved	0.0015J	mg/L	0.0020	02/26/20 18:39	D3
EPA 6020B	Lithium, Dissolved	0.084	mg/L	0.050	02/26/20 18:39	
92466089003	T2-2HTS					
EPA 6020B	Arsenic	0.0019	mg/L	0.0010	02/25/20 10:52	
EPA 6020B	Lithium	0.073	mg/L	0.025	02/25/20 10:52	
EPA 6020B	Arsenic, Dissolved	0.0014J	mg/L	0.0020	02/26/20 18:53	D3
EPA 6020B	Lithium, Dissolved	0.060	mg/L	0.050	02/26/20 18:53	
92466089004	T2-2LT					
EPA 6020B	Arsenic	0.0018	mg/L	0.0010	02/25/20 11:01	
EPA 6020B	Lithium	0.063	mg/L	0.025	02/25/20 11:01	
EPA 6020B	Arsenic, Dissolved	0.0016J	mg/L	0.0020	02/26/20 19:06	D3
EPA 6020B	Lithium, Dissolved	0.057	mg/L	0.050	02/26/20 19:06	
92466089005	T2-3HT					
EPA 6020B	Arsenic	0.0016J	mg/L	0.0020	03/05/20 23:55	
EPA 6020B	Lithium	0.099	mg/L	0.050	03/05/20 23:55	
EPA 6020B	Arsenic, Dissolved	0.0015J	mg/L	0.0020	02/26/20 19:15	D3
EPA 6020B	Lithium, Dissolved	0.093	mg/L	0.050	02/26/20 19:15	
92466089006	T2-3HTS					
EPA 6020B	Arsenic	0.0018J	mg/L	0.0020	03/06/20 00:16	
EPA 6020B	Lithium	0.11	mg/L	0.050	03/06/20 00:16	
EPA 6020B	Arsenic, Dissolved	0.0015J	mg/L	0.0020	02/26/20 19:23	D3
EPA 6020B	Lithium, Dissolved	0.094	mg/L	0.050	02/26/20 19:23	
92466089007	T2-3LT					
EPA 6020B	Arsenic	0.0020	mg/L	0.0020	03/06/20 00:42	
EPA 6020B	Lithium	0.049J	mg/L	0.050	03/06/20 00:42	
EPA 6020B	Arsenic, Dissolved	0.0012J	mg/L	0.0020	02/26/20 19:32	D3
EPA 6020B	Lithium, Dissolved	0.041J	mg/L	0.050	02/26/20 19:32	
92466089008	T2-4HT					
EPA 6020B	Arsenic	0.0016J	mg/L	0.0020	03/06/20 00:48	
EPA 6020B	Lithium	0.091	mg/L	0.050	03/06/20 00:48	
EPA 6020B	Arsenic, Dissolved	0.0020J	mg/L	0.0020	02/26/20 20:15	D3
EPA 6020B	Lithium, Dissolved	0.092	mg/L	0.050	02/26/20 20:15	
92466089009	T2-4HTS					
EPA 6020B	Arsenic	0.0015J	mg/L	0.0020	03/06/20 00:58	
EPA 6020B	Lithium	0.085	mg/L	0.050	03/06/20 00:58	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus

Pace Project No.: 92466089

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92466089009	T2-4HTS					
EPA 6020B	Arsenic, Dissolved	0.0016J	mg/L	0.0020	02/26/20 20:24	D3
EPA 6020B	Lithium, Dissolved	0.088	mg/L	0.050	02/26/20 20:24	
92466089010	T2-4LT					
EPA 6020B	Arsenic	0.0015J	mg/L	0.0020	03/06/20 01:03	
EPA 6020B	Lithium	0.075	mg/L	0.050	03/06/20 01:03	
EPA 6020B	Arsenic, Dissolved	0.0015J	mg/L	0.0020	02/26/20 20:37	D3
EPA 6020B	Lithium, Dissolved	0.077	mg/L	0.050	02/26/20 20:37	
92466089011	T1-1HT					
EPA 6020B	Arsenic	0.0016J	mg/L	0.0020	03/06/20 01:19	
EPA 6020B	Lithium	0.039J	mg/L	0.050	03/06/20 01:19	
EPA 6020B	Lithium, Dissolved	0.038J	mg/L	0.050	02/26/20 20:46	
92466089012	T1-1LT					
EPA 6020B	Lithium	0.024J	mg/L	0.050	03/06/20 01:51	
EPA 6020B	Lithium, Dissolved	0.022J	mg/L	0.050	02/26/20 20:59	
92466089013	T1-2HT					
EPA 6020B	Lithium	0.11	mg/L	0.050	03/06/20 01:56	
EPA 6020B	Arsenic, Dissolved	0.0015J	mg/L	0.0020	02/26/20 21:04	D3
EPA 6020B	Lithium, Dissolved	0.088	mg/L	0.050	02/26/20 21:04	
92466089014	T1-2HTS					
EPA 6020B	Lithium	0.055	mg/L	0.050	03/06/20 02:01	
EPA 6020B	Arsenic, Dissolved	0.0015J	mg/L	0.0020	02/26/20 21:17	D3
EPA 6020B	Lithium, Dissolved	0.061	mg/L	0.050	02/26/20 21:17	
92466089015	T1-2LT					
EPA 6020B	Lithium	0.022J	mg/L	0.050	03/06/20 02:06	
EPA 6020B	Lithium, Dissolved	0.024J	mg/L	0.050	02/26/20 21:39	
92466089016	T1-3HT					
EPA 6020B	Lithium	0.092	mg/L	0.050	03/06/20 02:12	
EPA 6020B	Arsenic, Dissolved	0.0016J	mg/L	0.0020	02/26/20 21:48	D3
EPA 6020B	Lithium, Dissolved	0.080	mg/L	0.050	02/26/20 21:48	
92466089017	T1-3HTS					
EPA 6020B	Lithium	0.067	mg/L	0.050	03/06/20 02:17	
EPA 6020B	Arsenic, Dissolved	0.0015J	mg/L	0.0020	02/26/20 22:01	D3
EPA 6020B	Lithium, Dissolved	0.072	mg/L	0.050	02/26/20 22:01	
92466089018	T1-3LT					
EPA 6020B	Lithium	0.022J	mg/L	0.050	03/06/20 02:22	
EPA 6020B	Lithium, Dissolved	0.019J	mg/L	0.050	02/26/20 22:35	
92466089019	T1-4HT					
EPA 6020B	Lithium	0.080	mg/L	0.050	03/06/20 02:27	
EPA 6020B	Arsenic, Dissolved	0.0019J	mg/L	0.0020	02/26/20 22:40	D3
EPA 6020B	Lithium, Dissolved	0.086	mg/L	0.050	02/26/20 22:40	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus
Pace Project No.: 92466089

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92466089020	T1-4HTS					
EPA 6020B	Arsenic	0.0014J	mg/L	0.0020	03/06/20 02:33	
EPA 6020B	Lithium	0.081	mg/L	0.050	03/06/20 02:33	
EPA 6020B	Arsenic, Dissolved	0.0016J	mg/L	0.0020	02/26/20 22:56	D3
EPA 6020B	Lithium, Dissolved	0.083	mg/L	0.050	02/26/20 22:56	
92466089021	T1-4LT					
EPA 6020B	Arsenic	0.0016J	mg/L	0.0020	03/06/20 02:48	
EPA 6020B	Lithium	0.090	mg/L	0.050	03/06/20 02:48	
EPA 6020B	Arsenic, Dissolved	0.0016J	mg/L	0.0020	02/26/20 23:01	D3
EPA 6020B	Lithium, Dissolved	0.090	mg/L	0.050	02/26/20 23:01	
92466089022	T3-1HT					
EPA 6020B	Arsenic	0.0018J	mg/L	0.0020	03/06/20 02:54	
EPA 6020B	Lithium	0.076	mg/L	0.050	03/06/20 02:54	
EPA 6020B	Arsenic, Dissolved	0.0016J	mg/L	0.0020	02/27/20 00:09	D3
EPA 6020B	Lithium, Dissolved	0.075	mg/L	0.050	02/27/20 00:09	
92466089023	T3-2HT					
EPA 6020B	Arsenic	0.0015J	mg/L	0.0020	03/06/20 02:59	
EPA 6020B	Lithium	0.097	mg/L	0.050	03/06/20 02:59	
EPA 6020B	Arsenic, Dissolved	0.0017J	mg/L	0.0020	02/27/20 00:14	D3
EPA 6020B	Lithium, Dissolved	0.087	mg/L	0.050	02/27/20 00:14	
92466089024	T3-2HTS					
EPA 6020B	Arsenic	0.0013J	mg/L	0.0020	03/06/20 03:04	
EPA 6020B	Lithium	0.075	mg/L	0.050	03/06/20 03:04	
EPA 6020B	Arsenic, Dissolved	0.0017J	mg/L	0.0020	02/27/20 00:18	D3
EPA 6020B	Lithium, Dissolved	0.078	mg/L	0.050	02/27/20 00:18	
92466089025	T3-2LT					
EPA 6020B	Arsenic	0.0029	mg/L	0.0020	03/06/20 03:20	BC
EPA 6020B	Lithium	0.077	mg/L	0.050	03/06/20 03:20	
EPA 6020B	Arsenic, Dissolved	0.0017J	mg/L	0.0020	02/27/20 00:27	D3
EPA 6020B	Lithium, Dissolved	0.079	mg/L	0.050	02/27/20 00:27	
92466089026	T3-3HT					
EPA 6020B	Arsenic	0.0021	mg/L	0.0020	03/06/20 03:25	BC
EPA 6020B	Lithium	0.081	mg/L	0.050	03/06/20 03:25	
EPA 6020B	Arsenic, Dissolved	0.0017J	mg/L	0.0020	02/27/20 00:31	D3
EPA 6020B	Lithium, Dissolved	0.088	mg/L	0.050	02/27/20 00:31	
92466089027	T3-3HTS					
EPA 6020B	Arsenic	0.0018J	mg/L	0.0020	03/06/20 04:02	BC
EPA 6020B	Lithium	0.080	mg/L	0.050	03/06/20 04:02	
EPA 6020B	Arsenic, Dissolved	0.0019J	mg/L	0.0020	02/27/20 00:36	D3
EPA 6020B	Lithium, Dissolved	0.081	mg/L	0.050	02/27/20 00:36	
92466089028	T3-3LT					
EPA 6020B	Arsenic	0.0018J	mg/L	0.0020	03/06/20 04:07	BC
EPA 6020B	Lithium	0.084	mg/L	0.050	03/06/20 04:07	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus
Pace Project No.: 92466089

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92466089028	T3-3LT					
EPA 6020B	Arsenic, Dissolved	0.0016J	mg/L	0.0020	02/27/20 00:44	D3
EPA 6020B	Lithium, Dissolved	0.078	mg/L	0.050	02/27/20 00:44	
92466089029	T3-4HT					
EPA 6020B	Arsenic	0.0018J	mg/L	0.0020	03/06/20 04:12	BC
EPA 6020B	Lithium	0.087	mg/L	0.050	03/06/20 04:12	
EPA 6020B	Arsenic, Dissolved	0.0019J	mg/L	0.0020	02/27/20 00:49	D3
EPA 6020B	Lithium, Dissolved	0.10	mg/L	0.050	02/27/20 00:49	
92466089030	T3-4HTS					
EPA 6020B	Arsenic	0.0014J	mg/L	0.0020	03/06/20 04:18	BC
EPA 6020B	Lithium	0.085	mg/L	0.050	03/06/20 04:18	
EPA 6020B	Arsenic, Dissolved	0.0016J	mg/L	0.0020	02/27/20 00:58	D3
EPA 6020B	Lithium, Dissolved	0.090	mg/L	0.050	02/27/20 00:58	
92466089031	T3-4LT					
EPA 6020B	Arsenic	0.0012J	mg/L	0.0020	03/06/20 04:23	BC
EPA 6020B	Lithium	0.072	mg/L	0.050	03/06/20 04:23	
EPA 6020B	Arsenic, Dissolved	0.0015J	mg/L	0.0020	02/27/20 01:02	D3
EPA 6020B	Lithium, Dissolved	0.072	mg/L	0.050	02/27/20 01:02	
92466089032	MCM-05HT					
EPA 6020B	Arsenic	0.0013J	mg/L	0.0020	03/06/20 04:28	BC
EPA 6020B	Lithium	0.017J	mg/L	0.050	03/06/20 04:28	
EPA 6020B	Lithium, Dissolved	0.024J	mg/L	0.050	02/27/20 01:20	
92466089033	MCM-05LT					
EPA 6020B	Arsenic	0.0016J	mg/L	0.0020	03/06/20 04:34	BC
EPA 6020B	Lithium	0.023J	mg/L	0.050	03/06/20 04:34	
EPA 6020B	Lithium, Dissolved	0.021J	mg/L	0.050	02/27/20 01:24	
92466089034	MCM-06HT					
EPA 6020B	Arsenic	0.40	mg/L	0.0020	03/06/20 04:39	BC
EPA 6020B	Lithium	0.096	mg/L	0.050	03/06/20 04:39	
EPA 6020B	Arsenic, Dissolved	0.48	mg/L	0.0020	02/27/20 01:28	
EPA 6020B	Lithium, Dissolved	0.11	mg/L	0.050	02/27/20 01:28	
92466089035	MCM-06LT					
EPA 6020B	Arsenic	0.44	mg/L	0.0020	03/06/20 05:00	BC
EPA 6020B	Lithium	0.094	mg/L	0.050	03/06/20 05:00	
EPA 6020B	Arsenic, Dissolved	0.47	mg/L	0.0020	02/27/20 01:37	
EPA 6020B	Lithium, Dissolved	0.094	mg/L	0.050	02/27/20 01:37	
92466089036	MCM-07HT					
EPA 6020B	Arsenic	0.018	mg/L	0.0020	03/06/20 05:05	BC
EPA 6020B	Lithium	0.047J	mg/L	0.050	03/06/20 05:05	
EPA 6020B	Arsenic, Dissolved	0.020	mg/L	0.0020	02/27/20 01:42	
EPA 6020B	Lithium, Dissolved	0.048J	mg/L	0.050	02/27/20 01:42	
92466089037	MCM-07LT					
EPA 6020B	Arsenic	0.016	mg/L	0.0020	03/06/20 05:10	BC

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus

Pace Project No.: 92466089

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92466089037	MCM-07LT					
EPA 6020B	Lithium	0.044J	mg/L	0.050	03/06/20 05:10	
EPA 6020B	Arsenic, Dissolved	0.018	mg/L	0.0020	02/27/20 01:46	
EPA 6020B	Lithium, Dissolved	0.062	mg/L	0.050	02/27/20 01:46	
92466089038	DUP-01					
EPA 6020B	Arsenic	0.0018J	mg/L	0.0020	03/06/20 05:15	BC
EPA 6020B	Lithium	0.073	mg/L	0.050	03/06/20 05:15	
EPA 6020B	Arsenic, Dissolved	0.0018J	mg/L	0.0020	02/27/20 01:51	D3
EPA 6020B	Lithium, Dissolved	0.080	mg/L	0.050	02/27/20 01:51	
92466089039	MCM-05HT ASHPOND					
EPA 6020B	Arsenic	0.0019J	mg/L	0.0020	03/06/20 05:21	BC
EPA 6020B	Lithium	0.018J	mg/L	0.050	03/06/20 05:21	
EPA 6020B	Arsenic, Dissolved	0.0013J	mg/L	0.0020	02/27/20 01:59	D3
EPA 6020B	Lithium, Dissolved	0.020J	mg/L	0.050	02/27/20 01:59	
92466089040	MCM-06LT ASHPOND					
EPA 6020B	Arsenic	0.0017J	mg/L	0.0020	03/06/20 05:26	BC
EPA 6020B	Lithium	0.012J	mg/L	0.050	03/06/20 05:26	
EPA 6020B	Arsenic, Dissolved	0.0013J	mg/L	0.0020	02/27/20 02:04	D3
EPA 6020B	Lithium, Dissolved	0.022J	mg/L	0.050	02/27/20 02:04	
92466089041	MCM-05LT ASHPOND					
EPA 6020B	Arsenic	0.0017J	mg/L	0.0020	03/06/20 05:31	BC
EPA 6020B	Lithium	0.012J	mg/L	0.050	03/06/20 05:31	
EPA 6020B	Lithium, Dissolved	0.021J	mg/L	0.050	02/27/20 02:08	
92466089042	MCM-07HT ASHPOND					
EPA 6020B	Arsenic	0.0019J	mg/L	0.0020	03/06/20 05:37	BC
EPA 6020B	Lithium	0.020J	mg/L	0.050	03/06/20 05:37	
EPA 6020B	Lithium, Dissolved	0.020J	mg/L	0.050	02/27/20 02:48	
92466089043	MCM-07LT ASHPOND					
EPA 6020B	Arsenic	0.0022	mg/L	0.0020	03/06/20 05:42	BC
EPA 6020B	Lithium	0.019J	mg/L	0.050	03/06/20 05:42	
EPA 6020B	Lithium, Dissolved	0.019J	mg/L	0.050	02/27/20 02:52	
92466089044	MCM-06HT ASHPOND					
EPA 6020B	Arsenic	0.0025	mg/L	0.0020	03/06/20 05:47	BC
EPA 6020B	Lithium	0.020J	mg/L	0.050	03/06/20 05:47	
EPA 6020B	Arsenic, Dissolved	0.0012J	mg/L	0.0020	02/27/20 15:55	D3
EPA 6020B	Lithium, Dissolved	0.021J	mg/L	0.050	02/27/20 02:57	
92466089045	BG-1LT					
EPA 6020B	Arsenic	0.0019J	mg/L	0.0020	03/06/20 06:45	
EPA 6020B	Lithium	0.090	mg/L	0.050	03/06/20 06:45	
EPA 6020B	Arsenic, Dissolved	0.0014J	mg/L	0.0020	02/27/20 16:00	D3
EPA 6020B	Lithium, Dissolved	0.098	mg/L	0.050	02/27/20 03:06	
92466089046	BG-2HT					
EPA 6020B	Arsenic	0.0023	mg/L	0.0020	03/06/20 07:06	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus

Pace Project No.: 92466089

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92466089046	BG-2HT					
EPA 6020B	Lithium	0.099	mg/L	0.050	03/06/20 07:06	
EPA 6020B	Arsenic, Dissolved	0.0016J	mg/L	0.0020	02/27/20 16:08	D3
EPA 6020B	Lithium, Dissolved	0.099	mg/L	0.050	02/27/20 03:10	
92466089047	MCM-04LT					
EPA 6020B	Arsenic	0.0016J	mg/L	0.0020	03/06/20 06:13	
EPA 6020B	Cobalt	0.0030	mg/L	0.0020	03/06/20 06:13	
EPA 6020B	Cobalt, Dissolved	0.0026	mg/L	0.0020	02/27/20 16:17	
92466089048	MCM-08LT					
EPA 6020B	Arsenic	0.0019J	mg/L	0.0020	03/06/20 06:19	
EPA 6020B	Cobalt	0.0020J	mg/L	0.0020	03/06/20 06:19	
EPA 6020B	Arsenic, Dissolved	0.0013J	mg/L	0.0020	02/27/20 16:22	D3
EPA 6020B	Cobalt, Dissolved	0.0020J	mg/L	0.0020	02/27/20 16:22	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T2-1HT		Lab ID: 92466089001		Collected: 02/01/20 13:55	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0014	mg/L	0.0010	0.00060	10	02/25/20 02:03	02/25/20 10:30	7440-38-2	
Cobalt	ND	mg/L	0.0010	0.00050	10	02/25/20 02:03	02/25/20 10:30	7440-48-4	
Lithium	0.052	mg/L	0.025	0.0042	10	02/25/20 02:03	02/25/20 10:30	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	0.0014J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 15:45	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 15:45	7440-48-4	
Lithium, Dissolved	0.059	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 15:45	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T2-2HT		Lab ID: 92466089002		Collected: 02/01/20 14:32		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0019	mg/L	0.0010	0.00060	10	02/25/20 02:03	02/25/20 10:39	7440-38-2	
Cobalt	ND	mg/L	0.0010	0.00050	10	02/25/20 02:03	02/25/20 10:39	7440-48-4	
Lithium	0.10	mg/L	0.025	0.0042	10	02/25/20 02:03	02/25/20 10:39	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	0.0015J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 18:39	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 18:39	7440-48-4	
Lithium, Dissolved	0.084	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 18:39	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T2-2HTS **Lab ID: 92466089003** Collected: 02/01/20 14:28 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0019	mg/L	0.0010	0.00060	10	02/25/20 02:03	02/25/20 10:52	7440-38-2	
Cobalt	ND	mg/L	0.0010	0.00050	10	02/25/20 02:03	02/25/20 10:52	7440-48-4	
Lithium	0.073	mg/L	0.025	0.0042	10	02/25/20 02:03	02/25/20 10:52	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0014J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 18:53	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 18:53	7440-48-4	
Lithium, Dissolved	0.060	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 18:53	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T2-2LT **Lab ID:** 92466089004 Collected: 02/02/20 13:38 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0018	mg/L	0.0010	0.00060	10	02/25/20 02:03	02/25/20 11:01	7440-38-2	
Cobalt	ND	mg/L	0.0010	0.00050	10	02/25/20 02:03	02/25/20 11:01	7440-48-4	
Lithium	0.063	mg/L	0.025	0.0042	10	02/25/20 02:03	02/25/20 11:01	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0016J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 19:06	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 19:06	7440-48-4	
Lithium, Dissolved	0.057	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 19:06	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T2-3HT **Lab ID: 92466089005** Collected: 02/01/20 14:50 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0016J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/05/20 23:55	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/05/20 23:55	7440-48-4	
Lithium	0.099	mg/L	0.050	0.0084	2	03/04/20 02:26	03/05/20 23:55	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0015J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 19:15	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 19:15	7440-48-4	
Lithium, Dissolved	0.093	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 19:15	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T2-3HTS **Lab ID: 92466089006** Collected: 02/01/20 14:46 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0018J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 00:16	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 00:16	7440-48-4	
Lithium	0.11	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 00:16	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0015J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 19:23	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 19:23	7440-48-4	
Lithium, Dissolved	0.094	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 19:23	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T2-3LT		Lab ID: 92466089007		Collected: 02/02/20 11:20	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0020	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 00:42	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 00:42	7440-48-4	
Lithium	0.049J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 00:42	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	0.0012J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 19:32	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 19:32	7440-48-4	
Lithium, Dissolved	0.041J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 19:32	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T2-4HT **Lab ID: 92466089008** Collected: 02/01/20 15:14 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0016J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 00:48	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 00:48	7440-48-4	
Lithium	0.091	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 00:48	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0020J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 20:15	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 20:15	7440-48-4	
Lithium, Dissolved	0.092	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 20:15	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T2-4HTS **Lab ID: 92466089009** Collected: 02/01/20 15:00 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0015J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 00:58	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 00:58	7440-48-4	
Lithium	0.085	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 00:58	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0016J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 20:24	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 20:24	7440-48-4	
Lithium, Dissolved	0.088	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 20:24	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T2-4LT **Lab ID: 92466089010** Collected: 02/02/20 09:46 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0015J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 01:03	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 01:03	7440-48-4	
Lithium	0.075	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 01:03	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0015J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 20:37	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 20:37	7440-48-4	
Lithium, Dissolved	0.077	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 20:37	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T1-1HT		Lab ID: 92466089011		Collected: 02/01/20 14:08	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0016J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 01:19	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 01:19	7440-48-4	
Lithium	0.039J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 01:19	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 20:46	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 20:46	7440-48-4	
Lithium, Dissolved	0.038J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 20:46	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T1-1LT **Lab ID: 92466089012** Collected: 02/01/20 09:50 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 01:51	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 01:51	7440-48-4	
Lithium	0.024J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 01:51	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 20:59	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 20:59	7440-48-4	
Lithium, Dissolved	0.022J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 20:59	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T1-2HT **Lab ID: 92466089013** Collected: 02/01/20 14:20 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 01:56	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 01:56	7440-48-4	
Lithium	0.11	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 01:56	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0015J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 21:04	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 21:04	7440-48-4	
Lithium, Dissolved	0.088	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 21:04	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T1-2HTS **Lab ID: 92466089014** Collected: 02/01/20 14:16 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 02:01	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 02:01	7440-48-4	
Lithium	0.055	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 02:01	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0015J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 21:17	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 21:17	7440-48-4	
Lithium, Dissolved	0.061	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 21:17	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T1-2LT **Lab ID: 92466089015** Collected: 02/01/20 10:16 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 02:06	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 02:06	7440-48-4	
Lithium	0.022J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 02:06	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 21:39	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 21:39	7440-48-4	
Lithium, Dissolved	0.024J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 21:39	7439-93-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T1-3HT **Lab ID: 92466089016** Collected: 02/01/20 13:56 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 02:12	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 02:12	7440-48-4	
Lithium	0.092	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 02:12	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0016J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 21:48	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 21:48	7440-48-4	
Lithium, Dissolved	0.080	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 21:48	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T1-3HTS **Lab ID: 92466089017** Collected: 02/01/20 13:52 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 02:17	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 02:17	7440-48-4	
Lithium	0.067	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 02:17	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0015J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 22:01	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 22:01	7440-48-4	
Lithium, Dissolved	0.072	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 22:01	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus
Pace Project No.: 92466089

Sample: T1-3LT		Lab ID: 92466089018		Collected: 02/01/20 10:06	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	ND	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 02:22	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 02:22	7440-48-4	
Lithium	0.022J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 02:22	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 22:35	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 22:35	7440-48-4	
Lithium, Dissolved	0.019J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 22:35	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T1-4HT **Lab ID: 92466089019** Collected: 02/01/20 13:40 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 02:27	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 02:27	7440-48-4	
Lithium	0.080	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 02:27	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0019J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 22:40	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 22:40	7440-48-4	
Lithium, Dissolved	0.086	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 22:40	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T1-4HTS **Lab ID: 92466089020** Collected: 02/01/20 13:34 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0014J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 02:33	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 02:33	7440-48-4	
Lithium	0.081	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 02:33	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0016J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 22:56	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 22:56	7440-48-4	
Lithium, Dissolved	0.083	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 22:56	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T1-4LT **Lab ID: 92466089021** Collected: 02/01/20 09:56 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0016J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 02:48	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 02:48	7440-48-4	
Lithium	0.090	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 02:48	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0016J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/26/20 23:01	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/26/20 23:01	7440-48-4	
Lithium, Dissolved	0.090	mg/L	0.050	0.0084	20	02/26/20 11:47	02/26/20 23:01	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T3-1HT **Lab ID: 92466089022** Collected: 02/02/20 14:35 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0018J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 02:54	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 02:54	7440-48-4	
Lithium	0.076	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 02:54	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0016J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 00:09	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 00:09	7440-48-4	
Lithium, Dissolved	0.075	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 00:09	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T3-2HT **Lab ID: 92466089023** Collected: 02/02/20 14:34 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0015J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 02:59	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 02:59	7440-48-4	
Lithium	0.097	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 02:59	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0017J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 00:14	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 00:14	7440-48-4	
Lithium, Dissolved	0.087	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 00:14	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T3-2HTS **Lab ID: 92466089024** Collected: 02/02/20 14:28 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0013J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 03:04	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 03:04	7440-48-4	
Lithium	0.075	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 03:04	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0017J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 00:18	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 00:18	7440-48-4	
Lithium, Dissolved	0.078	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 00:18	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T3-2LT		Lab ID: 92466089025		Collected: 02/03/20 13:30		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0029	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 03:20	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 03:20	7440-48-4	
Lithium	0.077	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 03:20	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	0.0017J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 00:27	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 00:27	7440-48-4	
Lithium, Dissolved	0.079	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 00:27	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T3-3HT		Lab ID: 92466089026		Collected: 02/02/20 14:10	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0021	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 03:25	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 03:25	7440-48-4	
Lithium	0.081	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 03:25	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	0.0017J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 00:31	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 00:31	7440-48-4	
Lithium, Dissolved	0.088	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 00:31	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T3-3HTS **Lab ID: 92466089027** Collected: 02/02/20 14:08 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0018J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 04:02	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 04:02	7440-48-4	
Lithium	0.080	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 04:02	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0019J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 00:36	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 00:36	7440-48-4	
Lithium, Dissolved	0.081	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 00:36	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T3-3LT **Lab ID: 92466089028** Collected: 02/03/20 12:12 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0018J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 04:07	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 04:07	7440-48-4	
Lithium	0.084	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 04:07	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0016J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 00:44	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 00:44	7440-48-4	
Lithium, Dissolved	0.078	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 00:44	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T3-4HT **Lab ID: 92466089029** Collected: 02/02/20 13:50 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0018J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 04:12	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 04:12	7440-48-4	
Lithium	0.087	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 04:12	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0019J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 00:49	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 00:49	7440-48-4	
Lithium, Dissolved	0.10	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 00:49	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T3-4HTS **Lab ID: 92466089030** Collected: 02/02/20 13:44 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0014J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 04:18	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 04:18	7440-48-4	
Lithium	0.085	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 04:18	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0016J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 00:58	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 00:58	7440-48-4	
Lithium, Dissolved	0.090	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 00:58	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: T3-4LT		Lab ID: 92466089031		Collected: 02/03/20 10:40	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	0.0012J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 04:23	7440-38-2	BC	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 04:23	7440-48-4		
Lithium	0.072	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 04:23	7439-93-2		
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic, Dissolved	0.0015J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 01:02	7440-38-2	D3	
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 01:02	7440-48-4		
Lithium, Dissolved	0.072	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 01:02	7439-93-2		

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-05HT		Lab ID: 92466089032		Collected: 02/02/20 14:46	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	0.0013J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 04:28	7440-38-2	BC	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 04:28	7440-48-4		
Lithium	0.017J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 04:28	7439-93-2		
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 01:20	7440-38-2	D3	
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 01:20	7440-48-4		
Lithium, Dissolved	0.024J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 01:20	7439-93-2		

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-05LT		Lab ID: 92466089033		Collected: 02/03/20 09:47	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	0.0016J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 04:34	7440-38-2	BC	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 04:34	7440-48-4		
Lithium	0.023J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 04:34	7439-93-2		
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 01:24	7440-38-2	D3	
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 01:24	7440-48-4		
Lithium, Dissolved	0.021J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 01:24	7439-93-2		

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-06HT		Lab ID: 92466089034		Collected: 02/01/20 13:55	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	0.40	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 04:39	7440-38-2	BC	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 04:39	7440-48-4		
Lithium	0.096	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 04:39	7439-93-2		
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic, Dissolved	0.48	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 01:28	7440-38-2		
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 01:28	7440-48-4		
Lithium, Dissolved	0.11	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 01:28	7439-93-2		

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-06LT		Lab ID: 92466089035		Collected: 02/02/20 09:00	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	0.44	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 05:00	7440-38-2	BC	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 05:00	7440-48-4		
Lithium	0.094	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 05:00	7439-93-2		
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic, Dissolved	0.47	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 01:37	7440-38-2		
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 01:37	7440-48-4		
Lithium, Dissolved	0.094	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 01:37	7439-93-2		

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-07HT		Lab ID: 92466089036		Collected: 02/01/20 14:20	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.018	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 05:05	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 05:05	7440-48-4	
Lithium	0.047J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 05:05	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	0.020	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 01:42	7440-38-2	
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 01:42	7440-48-4	
Lithium, Dissolved	0.048J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 01:42	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-07LT		Lab ID: 92466089037		Collected: 02/01/20 10:15	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.016	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 05:10	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 05:10	7440-48-4	
Lithium	0.044J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 05:10	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	0.018	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 01:46	7440-38-2	
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 01:46	7440-48-4	
Lithium, Dissolved	0.062	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 01:46	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: DUP-01		Lab ID: 92466089038		Collected: 02/03/20 00:00	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	0.0018J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 05:15	7440-38-2	BC	
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 05:15	7440-48-4		
Lithium	0.073	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 05:15	7439-93-2		
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic, Dissolved	0.0018J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 01:51	7440-38-2	D3	
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 01:51	7440-48-4		
Lithium, Dissolved	0.080	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 01:51	7439-93-2		

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-05HT ASHPOND **Lab ID: 92466089039** Collected: 02/02/20 14:30 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0019J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 05:21	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 05:21	7440-48-4	
Lithium	0.018J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 05:21	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0013J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 01:59	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 01:59	7440-48-4	
Lithium, Dissolved	0.020J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 01:59	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-06LT ASHPOND **Lab ID: 92466089040** Collected: 02/02/20 08:50 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0017J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 05:26	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 05:26	7440-48-4	
Lithium	0.012J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 05:26	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0013J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 02:04	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 02:04	7440-48-4	
Lithium, Dissolved	0.022J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 02:04	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-05LT ASHPOND **Lab ID: 92466089041** Collected: 02/03/20 09:45 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0017J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 05:31	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 05:31	7440-48-4	
Lithium	0.012J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 05:31	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 02:08	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 02:08	7440-48-4	
Lithium, Dissolved	0.021J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 02:08	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-07HT ASHPOND **Lab ID: 92466089042** Collected: 02/01/20 14:20 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0019J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 05:37	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 05:37	7440-48-4	
Lithium	0.020J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 05:37	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 15:46	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 15:46	7440-48-4	
Lithium, Dissolved	0.020J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 02:48	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-07LT ASHPOND **Lab ID: 92466089043** Collected: 02/01/20 09:40 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0022	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 05:42	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 05:42	7440-48-4	
Lithium	0.019J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 05:42	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 15:51	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 15:51	7440-48-4	
Lithium, Dissolved	0.019J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 02:52	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-06HT ASHPOND **Lab ID: 92466089044** Collected: 02/01/20 13:55 Received: 02/04/20 08:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0025	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 05:47	7440-38-2	BC
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 05:47	7440-48-4	
Lithium	0.020J	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 05:47	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0012J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 15:55	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 15:55	7440-48-4	
Lithium, Dissolved	0.021J	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 02:57	7439-93-2	

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: BG-1LT		Lab ID: 92466089045		Collected: 02/02/20 08:58	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	0.0019J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 06:45	7440-38-2		
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 06:45	7440-48-4		
Lithium	0.090	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 06:45	7439-93-2		
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic, Dissolved	0.0014J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 16:00	7440-38-2	D3	
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 16:00	7440-48-4		
Lithium, Dissolved	0.098	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 03:06	7439-93-2		

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: BG-2HT		Lab ID: 92466089046		Collected: 02/02/20 15:04	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	0.0023	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 07:06	7440-38-2		
Cobalt	ND	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 07:06	7440-48-4		
Lithium	0.099	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 07:06	7439-93-2		
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic, Dissolved	0.0016J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 16:08	7440-38-2	D3	
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 16:08	7440-48-4		
Lithium, Dissolved	0.099	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 03:10	7439-93-2		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-04LT		Lab ID: 92466089047		Collected: 02/03/20 11:35	Received: 02/04/20 10:48	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	0.0016J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 06:13	7440-38-2		
Cobalt	0.0030	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 06:13	7440-48-4		
Lithium	ND	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 06:13	7439-93-2		
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 16:17	7440-38-2	D3	
Cobalt, Dissolved	0.0026	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 16:17	7440-48-4		
Lithium, Dissolved	ND	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 03:14	7439-93-2		

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ANALYTICAL RESULTS

Project: Plant McManus

Pace Project No.: 92466089

Sample: MCM-08LT **Lab ID: 92466089048** Collected: 02/03/20 12:41 Received: 02/04/20 10:48 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0019J	mg/L	0.0020	0.0012	2	03/04/20 02:26	03/06/20 06:19	7440-38-2	
Cobalt	0.0020J	mg/L	0.0020	0.0010	2	03/04/20 02:26	03/06/20 06:19	7440-48-4	
Lithium	ND	mg/L	0.050	0.0084	2	03/04/20 02:26	03/06/20 06:19	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0013J	mg/L	0.0020	0.0012	20	02/26/20 11:47	02/27/20 16:22	7440-38-2	D3
Cobalt, Dissolved	0.0020J	mg/L	0.0020	0.0010	20	02/26/20 11:47	02/27/20 16:22	7440-48-4	
Lithium, Dissolved	ND	mg/L	0.050	0.0084	20	02/26/20 11:47	02/27/20 16:22	7439-93-2	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus

Pace Project No.: 92466089

QC Batch:	526783	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3010A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92466089001, 92466089002, 92466089003, 92466089004

METHOD BLANK: 2814966 Matrix: Water

Associated Lab Samples: 92466089001, 92466089002, 92466089003, 92466089004, 92466089005, 92466089006, 92466089007, 92466089008, 92466089009, 92466089010, 92466089011, 92466089012, 92466089013, 92466089014, 92466089015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.00010	0.000060	02/25/20 10:17	
Cobalt	mg/L	ND	0.00010	0.000050	02/25/20 10:17	
Lithium	mg/L	ND	0.0025	0.00042	02/25/20 10:17	

LABORATORY CONTROL SAMPLE: 2814967

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.0099	99	80-120	
Cobalt	mg/L	0.01	0.010	102	80-120	
Lithium	mg/L	0.05	0.050	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2814968 2814969

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result	% Rec	% Rec						
Arsenic	mg/L	2.6 ug/L	0.01	0.01	0.012	0.013	97	100	75-125	2	20		
Cobalt	mg/L	0.11 ug/L	0.01	0.01	0.010	0.010	100	101	75-125	0	20		
Lithium	mg/L	2.6 ug/L	0.05	0.05	0.051	0.054	98	103	75-125	5	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus
Pace Project No.: 92466089

QC Batch: 528310 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92466089005, 92466089006, 92466089007, 92466089008, 92466089009, 92466089010, 92466089011, 92466089012, 92466089013, 92466089014, 92466089015, 92466089016, 92466089017, 92466089018, 92466089019, 92466089020, 92466089021, 92466089022, 92466089023, 92466089024

METHOD BLANK: 2822122 Matrix: Water
Associated Lab Samples: 92466089005, 92466089006, 92466089007, 92466089008, 92466089009, 92466089010, 92466089011, 92466089012, 92466089013, 92466089014, 92466089015, 92466089016, 92466089017, 92466089018, 92466089019, 92466089020, 92466089021, 92466089022, 92466089023, 92466089024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.00010	0.000060	03/05/20 23:45	
Cobalt	mg/L	ND	0.00010	0.000050	03/05/20 23:45	
Lithium	mg/L	ND	0.0025	0.00042	03/05/20 23:45	

LABORATORY CONTROL SAMPLE: 2822123

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	104	80-120	
Cobalt	mg/L	0.01	0.010	103	80-120	
Lithium	mg/L	0.05	0.056	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2822124 2822125

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92466089006 Result	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	0.0018J	0.1	0.1	0.12	0.11	119	109	75-125	8	20
Cobalt	mg/L	ND	0.1	0.1	0.11	0.11	114	107	75-125	7	20
Lithium	mg/L	0.11	0.5	0.5	0.68	0.62	114	102	75-125	10	20

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QUALITY CONTROL DATA

Project: Plant McManus
Pace Project No.: 92466089

QC Batch: 528311 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92466089025, 92466089026, 92466089027, 92466089028, 92466089029, 92466089030, 92466089031, 92466089032, 92466089033, 92466089034, 92466089035, 92466089036, 92466089037, 92466089038, 92466089039, 92466089040, 92466089041, 92466089042, 92466089043, 92466089044

METHOD BLANK: 2822126 Matrix: Water
Associated Lab Samples: 92466089025, 92466089026, 92466089027, 92466089028, 92466089029, 92466089030, 92466089031, 92466089032, 92466089033, 92466089034, 92466089035, 92466089036, 92466089037, 92466089038, 92466089039, 92466089040, 92466089041, 92466089042, 92466089043, 92466089044

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.000086J	0.00010	0.000060	03/06/20 03:09	BC
Cobalt	mg/L	ND	0.00010	0.000050	03/06/20 03:09	
Lithium	mg/L	ND	0.0025	0.00042	03/06/20 03:09	

LABORATORY CONTROL SAMPLE: 2822127

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.0099	99	80-120	BC
Cobalt	mg/L	0.01	0.010	100	80-120	
Lithium	mg/L	0.05	0.052	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2822128 2822129

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92466089026 Result	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	0.0021	0.1	0.1	0.11	0.12	107	113	75-125	6	20
Cobalt	mg/L	ND	0.1	0.1	0.10	0.12	104	116	75-125	10	20
Lithium	mg/L	0.081	0.5	0.5	0.58	0.63	99	110	75-125	9	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus
Pace Project No.: 92466089

QC Batch: 528312 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92466089045, 92466089046, 92466089047, 92466089048

METHOD BLANK: 2822130 Matrix: Water
Associated Lab Samples: 92466089045, 92466089046, 92466089047, 92466089048

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.00010	0.000060	03/06/20 06:03	
Cobalt	mg/L	ND	0.00010	0.000050	03/06/20 06:03	
Lithium	mg/L	ND	0.0025	0.00042	03/06/20 06:03	

LABORATORY CONTROL SAMPLE: 2822131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.0098	98	80-120	
Cobalt	mg/L	0.01	0.010	101	80-120	
Lithium	mg/L	0.05	0.050	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2822132 2822133

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92466089048	Result	Spike Conc.	Spike Conc.								
Arsenic	mg/L	0.0019J	0.1	0.1	0.11	0.10	104	100	75-125	4	20		
Cobalt	mg/L	0.0020J	0.1	0.1	0.11	0.10	107	100	75-125	7	20		
Lithium	mg/L	ND	0.5	0.5	0.53	0.51	106	103	75-125	3	20		

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QUALITY CONTROL DATA

Project: Plant McManus
Pace Project No.: 92466089

QC Batch: 527145 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET Dissolved
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92466089001, 92466089002, 92466089003, 92466089004, 92466089005, 92466089006, 92466089007, 92466089008, 92466089009, 92466089010, 92466089011, 92466089012, 92466089013, 92466089014, 92466089015, 92466089016, 92466089017, 92466089018, 92466089019, 92466089020

METHOD BLANK: 2816511 Matrix: Water
Associated Lab Samples: 92466089001, 92466089002, 92466089003, 92466089004, 92466089005, 92466089006, 92466089007, 92466089008, 92466089009, 92466089010, 92466089011, 92466089012, 92466089013, 92466089014, 92466089015, 92466089016, 92466089017, 92466089018, 92466089019, 92466089020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.00010	0.000060	02/26/20 16:11	
Cobalt, Dissolved	mg/L	ND	0.00010	0.000050	02/26/20 16:11	
Lithium, Dissolved	mg/L	ND	0.0025	0.00042	02/26/20 16:11	

LABORATORY CONTROL SAMPLE: 2816512

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.01	0.0096	96	80-120	
Cobalt, Dissolved	mg/L	0.01	0.0098	98	80-120	
Lithium, Dissolved	mg/L	0.05	0.047	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2816513 2816514

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92466089001 Result	Spike Conc.	Spike Conc.	Result						
Arsenic, Dissolved	mg/L	0.0014J	0.01	0.01	0.012	0.012	106	105	75-125	2	20
Cobalt, Dissolved	mg/L	ND	0.01	0.01	0.011	0.011	109	108	75-125	1	20
Lithium, Dissolved	mg/L	0.059	0.05	0.05	0.10	0.10	83	86	75-125	2	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus
Pace Project No.: 92466089

QC Batch: 527147 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET Dissolved
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92466089021, 92466089022, 92466089023, 92466089024, 92466089025, 92466089026, 92466089027, 92466089028, 92466089029, 92466089030, 92466089031, 92466089032, 92466089033, 92466089034, 92466089035, 92466089036, 92466089037, 92466089038, 92466089039, 92466089040

METHOD BLANK: 2816517 Matrix: Water
Associated Lab Samples: 92466089021, 92466089022, 92466089023, 92466089024, 92466089025, 92466089026, 92466089027, 92466089028, 92466089029, 92466089030, 92466089031, 92466089032, 92466089033, 92466089034, 92466089035, 92466089036, 92466089037, 92466089038, 92466089039, 92466089040

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.00010	0.000060	02/26/20 16:02	
Cobalt, Dissolved	mg/L	ND	0.00010	0.000050	02/26/20 16:02	
Lithium, Dissolved	mg/L	ND	0.0025	0.00042	02/26/20 16:02	

LABORATORY CONTROL SAMPLE: 2816518

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.01	0.0098	98	80-120	
Cobalt, Dissolved	mg/L	0.01	0.010	103	80-120	
Lithium, Dissolved	mg/L	0.05	0.045	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2816519 2816520

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92466089021 Result	Spike Conc.	Spike Conc.	Result						
Arsenic, Dissolved	mg/L	0.0016J	0.01	0.01	0.012	0.013	105	111	75-125	5	20
Cobalt, Dissolved	mg/L	ND	0.01	0.01	0.011	0.011	106	109	75-125	3	20
Lithium, Dissolved	mg/L	0.090	0.05	0.05	0.14	0.14	104	103	75-125	0	20

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QUALITY CONTROL DATA

Project: Plant McManus

Pace Project No.: 92466089

QC Batch: 527148

Analysis Method: EPA 6020B

QC Batch Method: EPA 3010A

Analysis Description: 6020 MET Dissolved

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92466089041, 92466089042, 92466089043, 92466089044, 92466089045, 92466089046, 92466089047, 92466089048

METHOD BLANK: 2816523

Matrix: Water

Associated Lab Samples: 92466089041, 92466089042, 92466089043, 92466089044, 92466089045, 92466089046, 92466089047, 92466089048

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.00010	0.000060	02/26/20 15:54	
Cobalt, Dissolved	mg/L	ND	0.00010	0.000050	02/26/20 15:54	
Lithium, Dissolved	mg/L	ND	0.0025	0.00042	02/26/20 15:54	

LABORATORY CONTROL SAMPLE: 2816524

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.01	0.0098	98	80-120	
Cobalt, Dissolved	mg/L	0.01	0.010	100	80-120	
Lithium, Dissolved	mg/L	0.05	0.047	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2816525 2816526

Parameter	Units	2816525		2816526		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic, Dissolved	mg/L	ND	0.01	0.011	0.011	99	100	75-125	1	20	
Cobalt, Dissolved	mg/L	ND	0.01	0.0097	0.0094	96	94	75-125	3	20	
Lithium, Dissolved	mg/L	0.021J	0.05	0.065	0.072	89	102	75-125	10	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McManus

Pace Project No.: 92466089

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

BC The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus
Pace Project No.: 92466089

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92466089001	T2-1HT	EPA 3010A	526783	EPA 6020B	526805
92466089002	T2-2HT	EPA 3010A	526783	EPA 6020B	526805
92466089003	T2-2HTS	EPA 3010A	526783	EPA 6020B	526805
92466089004	T2-2LT	EPA 3010A	526783	EPA 6020B	526805
92466089005	T2-3HT	EPA 3010A	528310	EPA 6020B	528347
92466089006	T2-3HTS	EPA 3010A	528310	EPA 6020B	528347
92466089007	T2-3LT	EPA 3010A	528310	EPA 6020B	528347
92466089008	T2-4HT	EPA 3010A	528310	EPA 6020B	528347
92466089009	T2-4HTS	EPA 3010A	528310	EPA 6020B	528347
92466089010	T2-4LT	EPA 3010A	528310	EPA 6020B	528347
92466089011	T1-1HT	EPA 3010A	528310	EPA 6020B	528347
92466089012	T1-1LT	EPA 3010A	528310	EPA 6020B	528347
92466089013	T1-2HT	EPA 3010A	528310	EPA 6020B	528347
92466089014	T1-2HTS	EPA 3010A	528310	EPA 6020B	528347
92466089015	T1-2LT	EPA 3010A	528310	EPA 6020B	528347
92466089016	T1-3HT	EPA 3010A	528310	EPA 6020B	528347
92466089017	T1-3HTS	EPA 3010A	528310	EPA 6020B	528347
92466089018	T1-3LT	EPA 3010A	528310	EPA 6020B	528347
92466089019	T1-4HT	EPA 3010A	528310	EPA 6020B	528347
92466089020	T1-4HTS	EPA 3010A	528310	EPA 6020B	528347
92466089021	T1-4LT	EPA 3010A	528310	EPA 6020B	528347
92466089022	T3-1HT	EPA 3010A	528310	EPA 6020B	528347
92466089023	T3-2HT	EPA 3010A	528310	EPA 6020B	528347
92466089024	T3-2HTS	EPA 3010A	528310	EPA 6020B	528347
92466089025	T3-2LT	EPA 3010A	528311	EPA 6020B	528348
92466089026	T3-3HT	EPA 3010A	528311	EPA 6020B	528348
92466089027	T3-3HTS	EPA 3010A	528311	EPA 6020B	528348
92466089028	T3-3LT	EPA 3010A	528311	EPA 6020B	528348
92466089029	T3-4HT	EPA 3010A	528311	EPA 6020B	528348
92466089030	T3-4HTS	EPA 3010A	528311	EPA 6020B	528348
92466089031	T3-4LT	EPA 3010A	528311	EPA 6020B	528348
92466089032	MCM-05HT	EPA 3010A	528311	EPA 6020B	528348
92466089033	MCM-05LT	EPA 3010A	528311	EPA 6020B	528348
92466089034	MCM-06HT	EPA 3010A	528311	EPA 6020B	528348
92466089035	MCM-06LT	EPA 3010A	528311	EPA 6020B	528348
92466089036	MCM-07HT	EPA 3010A	528311	EPA 6020B	528348
92466089037	MCM-07LT	EPA 3010A	528311	EPA 6020B	528348
92466089038	DUP-01	EPA 3010A	528311	EPA 6020B	528348
92466089039	MCM-05HT ASHPOND	EPA 3010A	528311	EPA 6020B	528348
92466089040	MCM-06LT ASHPOND	EPA 3010A	528311	EPA 6020B	528348
92466089041	MCM-05LT ASHPOND	EPA 3010A	528311	EPA 6020B	528348
92466089042	MCM-07HT ASHPOND	EPA 3010A	528311	EPA 6020B	528348
92466089043	MCM-07LT ASHPOND	EPA 3010A	528311	EPA 6020B	528348
92466089044	MCM-06HT ASHPOND	EPA 3010A	528311	EPA 6020B	528348
92466089045	BG-1LT	EPA 3010A	528312	EPA 6020B	528350
92466089046	BG-2HT	EPA 3010A	528312	EPA 6020B	528350
92466089047	MCM-04LT	EPA 3010A	528312	EPA 6020B	528350

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus
Pace Project No.: 92466089

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92466089048	MCM-08LT	EPA 3010A	528312	EPA 6020B	528350
92466089001	T2-1HT	EPA 3010A	527145	EPA 6020B	527187
92466089002	T2-2HT	EPA 3010A	527145	EPA 6020B	527187
92466089003	T2-2HTS	EPA 3010A	527145	EPA 6020B	527187
92466089004	T2-2LT	EPA 3010A	527145	EPA 6020B	527187
92466089005	T2-3HT	EPA 3010A	527145	EPA 6020B	527187
92466089006	T2-3HTS	EPA 3010A	527145	EPA 6020B	527187
92466089007	T2-3LT	EPA 3010A	527145	EPA 6020B	527187
92466089008	T2-4HT	EPA 3010A	527145	EPA 6020B	527187
92466089009	T2-4HTS	EPA 3010A	527145	EPA 6020B	527187
92466089010	T2-4LT	EPA 3010A	527145	EPA 6020B	527187
92466089011	T1-1HT	EPA 3010A	527145	EPA 6020B	527187
92466089012	T1-1LT	EPA 3010A	527145	EPA 6020B	527187
92466089013	T1-2HT	EPA 3010A	527145	EPA 6020B	527187
92466089014	T1-2HTS	EPA 3010A	527145	EPA 6020B	527187
92466089015	T1-2LT	EPA 3010A	527145	EPA 6020B	527187
92466089016	T1-3HT	EPA 3010A	527145	EPA 6020B	527187
92466089017	T1-3HTS	EPA 3010A	527145	EPA 6020B	527187
92466089018	T1-3LT	EPA 3010A	527145	EPA 6020B	527187
92466089019	T1-4HT	EPA 3010A	527145	EPA 6020B	527187
92466089020	T1-4HTS	EPA 3010A	527145	EPA 6020B	527187
92466089021	T1-4LT	EPA 3010A	527147	EPA 6020B	527190
92466089022	T3-1HT	EPA 3010A	527147	EPA 6020B	527190
92466089023	T3-2HT	EPA 3010A	527147	EPA 6020B	527190
92466089024	T3-2HTS	EPA 3010A	527147	EPA 6020B	527190
92466089025	T3-2LT	EPA 3010A	527147	EPA 6020B	527190
92466089026	T3-3HT	EPA 3010A	527147	EPA 6020B	527190
92466089027	T3-3HTS	EPA 3010A	527147	EPA 6020B	527190
92466089028	T3-3LT	EPA 3010A	527147	EPA 6020B	527190
92466089029	T3-4HT	EPA 3010A	527147	EPA 6020B	527190
92466089030	T3-4HTS	EPA 3010A	527147	EPA 6020B	527190
92466089031	T3-4LT	EPA 3010A	527147	EPA 6020B	527190
92466089032	MCM-05HT	EPA 3010A	527147	EPA 6020B	527190
92466089033	MCM-05LT	EPA 3010A	527147	EPA 6020B	527190
92466089034	MCM-06HT	EPA 3010A	527147	EPA 6020B	527190
92466089035	MCM-06LT	EPA 3010A	527147	EPA 6020B	527190
92466089036	MCM-07HT	EPA 3010A	527147	EPA 6020B	527190
92466089037	MCM-07LT	EPA 3010A	527147	EPA 6020B	527190
92466089038	DUP-01	EPA 3010A	527147	EPA 6020B	527190
92466089039	MCM-05HT ASHPOND	EPA 3010A	527147	EPA 6020B	527190
92466089040	MCM-06LT ASHPOND	EPA 3010A	527147	EPA 6020B	527190
92466089041	MCM-05LT ASHPOND	EPA 3010A	527148	EPA 6020B	527192
92466089042	MCM-07HT ASHPOND	EPA 3010A	527148	EPA 6020B	527192
92466089043	MCM-07LT ASHPOND	EPA 3010A	527148	EPA 6020B	527192
92466089044	MCM-06HT ASHPOND	EPA 3010A	527148	EPA 6020B	527192
92466089045	BG-1LT	EPA 3010A	527148	EPA 6020B	527192
92466089046	BG-2HT	EPA 3010A	527148	EPA 6020B	527192

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus

Pace Project No.: 92466089

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92466089047	MCM-04LT	EPA 3010A	527148	EPA 6020B	527192
92466089048	MCM-08LT	EPA 3010A	527148	EPA 6020B	527192

REPORT OF LABORATORY ANALYSIS

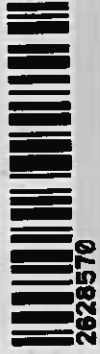
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CHAIN-OF-CUSTODY / Analytical Request Document

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NO# : 2628570



Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power	Report To: Millet, Lea	Company Name: Plant McManus SW	Attention: Kevin Herring	Company Name: Pace Analytical	Invoice #:
Address: 1003 Weatherstone Parkway	Copy To:	Purchase Order #:	Project Name: Plant McManus SW	Address: 2628570	Project #:
Suite 320, Woodstock, GA 30188		Project #:	Project Name: Plant McManus SW	State / Location: GA	
Email: lea.millet@ge.com			Pace Quote:		
Phone: 770-276-2760	Fac:		Pace Project Manager: kevin.herring@pace.com		
Requested Due Date:			Pace Profile #:		

ITEM #	MATRIX	MATRIX CODE	COLLECTED		SAMPLE TYPE (G-RAB C-COMP)	SAMPLE TEMP AT COLLECTION	PRESERVATIVES		ANALYSES TEST	# OF CONTAINERS	ACCEPTED BY / AFFILIATION	DATE	TIME	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME	TEMP IN C	Received on	Ice (Y/N)	Custody (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)	
			START	END			H2SO4	HNO3																	HCl
1	Drinking Water	DW	08/21/20	1355	G	1			Metals by 6020	1															
2	Waste Water	WW	08/21/20	1356	G	1			Metals by 6020	1															
3	Waste Water Product	P	08/21/20	1408	G	1			Metals by 6020	1															
4	Soil/Solid	SS	08/21/20	1416	G	1			Metals by 6020	1															
5	Oil	OL	08/21/20	1420	G	1			Metals by 6020	1															
6	Wipe	WP	08/21/20	1420	G	1			Metals by 6020	1															
7	Air	AR	08/21/20	1420	G	1			Metals by 6020	1															
8	Other	OT	08/21/20	1428	G	1			Metals by 6020	1															
9	Tissue	TS	08/21/20	1432	G	1			Metals by 6020	1															
10	Drinking Water	DW	08/21/20	1446	G	1			Metals by 6020	1															
11	Waste Water	WW	08/21/20	1450	G	1			Metals by 6020	1															
12	Waste Water Product	P	08/21/20	1500	G	1			Metals by 6020	1															
Additional Comments		VOID SIGNATURE		08/21/20 1446		K. Wellington/Pace		08/21/20 1446		08/21/20 1446		08/21/20 1446		08/21/20 1446		08/21/20 1446		08/21/20 1446		08/21/20 1446		08/21/20 1446		08/21/20 1446	

RESIDUAL CHLORINE (Y/N)

TEMP IN C

Received on

Ice (Y/N)

Custody (Y/N)

Sealed Cooler (Y/N)

Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE OF SAMPLER:

DATE signed:



CHAIN-OF-CUSTODY / Analytical Request Document

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Section A
Required Client Information:
 Company: Georgia Power
 Address: 1003 Weatherstone Parkway
 Suite 320, Woodstock, GA 30188
 Email: lea.miller@ge.com
 Phone: (251) 776-2760
 Requested Due Date:

Section B
Required Project Information:
 Report To: Millie Lea
 Copy To: Wilson, Stephen
 Purchase Order #: Plant McManus SW
 Project Name: Plant McManus SW
 Project #:

Section C
Invoice Information:
 Attention: Regulatory Agency
 Company Name: State of Georgia
 Address: State Capitol
 Pace Quote: kevin.herring@peacelabs.com
 Pace Project Manager: 2819
 Pace Profile #:

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-RAB or COMP)	MATRIX CODE (see valid codes to left)	PRESERVATIVES		# OF CONTAINERS	ANALYSIS TEST	DATE	TIME	APPROVED BY / APPLICATION	DATE	TIME	RECEIVED ON	TEMP °C	Isa (Y/N)	Custody (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)		
			START DATE	END DATE			UNPRESERVED	H2SO4															HNO3	HCl
1	Drinking Water	DW	2/20/13		G-RAB	51	Unpreserved			Metals by 6020	2/20/13	11:35	Johnston	2/3/20	16:34									
2	Drinking Water	DW	2/20/13		G-RAB	51	Unpreserved			Metals by 6020	2/20/13	11:35	Johnston	2/3/20	16:34									
3	Drinking Water	DW	2/4/20		G-RAB	51	Unpreserved			Metals by 6020	2/4/20	10:48	Yemenovskaya/Pace	2/4/20	10:48									
4	Drinking Water	DW	2/4/20		G-RAB	51	Unpreserved			Metals by 6020	2/4/20	12:16	K. Wellington/Pace	2/4/20	12:16									

ADDITIONAL COMMENTS:
 No. Carlini Only!

SAMPLER NAME AND SIGNATURE:
 K. Wellington
 DATE SIGNED: 2/3/20

SIGNATURE OF SAMPLER:
 K. Wellington
 DATE SIGNED: 2/3/20

TEMP °C:

Isa (Y/N):

Custody (Y/N):

Sealed (Y/N):

Cooler (Y/N):

Samples Intact (Y/N):

WO# : 2628593

Page 14 of 68



CHAIN-OF-CUSTODY / Analytical Request C

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WO#: 2628595

PM: KH Due Date: 02/06/20
 CLIENT: 26-GA Power

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power	Report To: Millet, Lee	Company Name:	Address:	Company Name:	Address:
Address: 1003 Weatherstone Parkway	Copy To:	Address:	Project Name: Plant McManus SW	Address:	Project Profile #: 2919
Suite 320, Woodstock, GA 30188		Project Name:	Project #:	Pace Project Manager: kevin.herring@pace-labs.com	
Email: lee.millet@ge.com	Phone: (251) 776-2760	Project #:		Pace Profile #:	
Requested Due Date:					

ITEM #	MATRIX	CODE	SAMPLE TYPE (S-GRAB C-COMP)	COLLECTED		DATE	TIME	# OF CONTAINERS	PRESERVATIVES							Metals by 6020	Disolved Metals by 6020	Residual Chlorine (Y/N)
				START	END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Method			
1	MCM-07-LT	DW	S-G	2/1/20	0840			1										
2	TA-1-LT	WT	S-G	2/1/20	0850			1										
3	TA-4-LT	WW	S-G	2/1/20	0910			1										
4	TA-3-LT	P	S-G	2/1/20	0910			1										
5	MCM-08-LT	SL	S-G	2/1/20	1000			1										
6	TA-2-LT	CL	S-G	2/1/20	1015			1										
7	TA-4-LT	WP	S-G	2/1/20	1026			1										
8	TA-4-LT	AR	S-G	2/1/20	1334			1										
9	TA-4-LT	OT	S-G	2/1/20	1340			1										
10	TA-2-LT	TS	S-G	2/1/20	1352			1										
11	TA-1-LT		S-G	2/1/20	1355			1										
12	MCM-06-LT		S-G	2/1/20	1355			1										

ANALYST SIGNATURE K. Wellington Pace 2/4/20 0800 DATE SIGNED: 2/4/20		ACCEPTED BY / APPROVAL DATE TIME		RECEIVED BY / APPROVAL DATE TIME	
TEMP in C 1.4 Y Y Y		RECEIVED ON (Y/N)		SAFETY CONDITIONS Sealed (Y/N) Cooled (Y/N) Intact (Y/N)	

EQUIP. NAME AND SIGNATURE
 PRINT Name of SAMPLER: Scott G...
 SIGNATURE of SAMPLER: [Signature]
 DATE SIGNED: 2/4/20



CHAIN-OF-CUSTODY / Analytical Request Doi

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WO# : 2628595

PM: KH Due Date: 02/06/20
CLIENT: 26-GA Power

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power	Report To: Millie Lee	Report To: Millie Lee	Copy To: <i>Wilson, Stephen</i>	Company Name:	Address:
Address: 1003 Weatherstone Parkway Suite 320, Woodstock, GA 30188	Phone: (251)776-2760	Project Name: Plant McMarus SW	Project #: 29119	Pace Quote:	Pace Project Manager: kevin.herring@pacealab.com
Email: lee.milling@ge.com	Fax:	Purchase Order #:			
Requested Due Date:					

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES							Metals by 6020	Disolved Metals by 6020	Residual Chlorine (Y/N)
			START DATE	END DATE				H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other			
1	Drinking Water	DW	2/3/20 14:28		G		1										
2	Water	WT	2/3/20 14:28		G		1										
3	Waste Water	WW	2/3/20 14:28		G		1										
4	Product	P	2/3/20 14:46		G		1										
5	Soil/Solid	SL	2/3/20 14:46		G		1										
6	Oil	OL	2/3/20 14:46		G		1										
7	Wipe	WP	2/3/20 14:46		G		1										
8	Air	AR	2/3/20 14:46		G		1										
9	Other	OT	2/3/20 14:46		G		1										
10	Tissue	TS	2/3/20 14:46		G		1										

DATE		TIME		DATE		TIME		DATE		TIME	
2/3/20		16:54		2/3/20		16:54		2/3/20		16:54	
2/4/20		10:48		2/4/20		10:48		2/4/20		10:48	
2/4/20		18:16		2/4/20		18:16		2/4/20		18:16	
2/4/20		18:16		2/4/20		18:16		2/4/20		18:16	

Conti Only

Stephen Wilson

Kevin Herring

R. Willington/Pace

2/3/20



Section A
 Required Client Information:
 Company: Georgia Power
 Address: 1003 Weatherstone Parkway
 Suite 320, Woodstock, GA 30188
 E-mail: tea.miller@gepower.com
 Phone: (251) 776-2760 Fax
 Requested Due Date:

Section B
 Required Project Information:
 Report To: Miller, Lee
 Copy To:
 Purchase Order #:
 Project Name: Plant Mchlanus SW
 Project #:

Section C
 Invoice Information:
 Attention:
 Company Name:
 Address:
 POC Project Manager: kevin.herring@pacelaba.com
 POC Profile #: 2919

CHAIN-OF-CUSTODY / Analytical Request Dr
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W0#: 2628595

2628595

Section D
 Required Laboratory Information:
 Matrix:
 Drinking Water
 Wastewater
 Wastewater
 Product
 Surface
 Air
 Wipe
 Other
 Tissue

CODE:
 DW
 WW
 P
 SL
 WIP
 AR
 OT
 TS

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / - / .) Sample IDs must be unique	MATRIX	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	Preservatives							Analysis Test		Residual Chlorine (Y/N)				
						START DATE TIME	END DATE TIME		Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Metals by 6020		Dissolved Metals by 6020			
1	MCM-07-WAT		G	2/12/20 1355				1														
2	T1-3-WAT		G	2/12/20 1356				1														
3	T1-3-WAT		G	2/12/20 1408				1														
4	T1-2-WAT		G	2/12/20 1416				1														
5	MCM-07-WAT		G	2/12/20 1420				1														
6	MCM-07-WAT		G	2/12/20 1420				1														
7	T1-2-WAT		G	2/12/20 1420				1														
8	T2-2-WATS		G	2/12/20 1438				1														
9	T2-2-WAT		G	2/12/20 1452				1														
10	T2-3-WATS		G	2/12/20 1446				1														
11	T2-3-WAT		G	2/12/20 1450				1														
12	T2-3-WAT		G	2/12/20 1500				1														

Approved by: [Signature] DATE: 2/12/20

Received by: [Signature] DATE: 2/12/20

Accepted by: [Signature] DATE: 2/12/20

TEMP in C: 14

Received on ice (Y/N): Y

Custody Sealed Cooler (Y/N): Y

Samples Intact (Y/N): Y

PRINT Name of SAMPLER: [Signature]

SIGNATURE OF SAMPLER: [Signature]

DATE Signed: 2/3/20



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CHAIN-OF-CUSTODY / Analytical Request Doc
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W0# : 2628595

PM: KH Due Date: 02/06/20
CLIENT: 26-GA Power

Section A

Required Client Information:

Company: Georgia Power
Address: 1003 Weatherstone Parkway
Suite 320 Woodstock, GA 30188
Email: lee.miller@ga.com
Phone: (770) 276-2760 Fax
Requested Due Date:

Section B

Required Project Information:

Report To: Matt Lee
Copy To: Kevin, Stephen
Purchase Order #:
Project Name: Plant Mclanahan SW
Project #:

Section C

Invoice Information:

Attention:
Company Name:
Address:
Pace Quota:
Pace Project Manager: Kevin, herring@paceanalytical.com
Pace Profile #: 2919

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Metals by 6020	Dissolved Metals by 6020	Residual Chlorine (Y/N)		
			START DATE	START TIME			END DATE	END TIME	Unpreserved	H2SO4	HNO3	HCl	NaOH				Na2S2O3	Methanol
T2-4HRT	G	GRAB	1/14/14	15:14		1												
MCA-06LT Ashpond	G	GRAB	1/14/14	09:50		1												
MCA-06LT Ashpond	G	GRAB	1/14/14	09:50		1												
T2-4HRT	G	GRAB	1/14/14	09:46		1												
T2-3LT	G	GRAB	1/14/14	11:20		1												
T2-2LT	G	GRAB	1/14/14	11:28		1												
T3-4HRTS	G	GRAB	1/14/14	13:44		1												
T3-4HRT	G	GRAB	1/14/14	13:50		1												
T3-3HRTS	G	GRAB	1/14/14	14:08		1												
T3-2HRTS	G	GRAB	1/14/14	14:28		1												
MCA-05HRT Ashpond	G	GRAB	1/14/14	14:30		1												

DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME
1/14/14	15:14	1/14/14	09:50	1/14/14	09:50	1/14/14	09:46
1/14/14	11:20	1/14/14	11:28	1/14/14	13:44	1/14/14	13:50
1/14/14	14:08	1/14/14	14:28	1/14/14	14:30		

PRINT Name of SAMPLER:
 SIGNATURE OF SAMPLER:
 DATE SIGNED:
 SIGNATURE OF CUSTOMER:
 DATE SIGNED:
 TEMP in C:
 Received on ice (Y/N):
 Custody Sealed Cooler (Y/N):
 Samples Intact (Y/N):



WO#: 2628598

CHAIN-OF-CUSTODY / Analytical Request
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields r

Section A
 Company: Georgia Power
 Address: 1003 Westchester Parkway
 Suite 320, Woodstock, GA 30188
 Email: lea.milled@resolutions.com
 Phone: (251)776-2760 Fax:
 Requested Due Date:

Section B
 Report To: Millie Lee
 Copy To: *[Signature]*
 Purchase Order #: Plant McManus SW
 Project Name:
 Project #:

Section C
 Invoice Information:
 Attention:
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: kevin.herring@pace-labs.com
 Pace Profile #: 2919
 Regulatory Agency:
 State / Location: GA

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES						Metals by 6020	Dispersed Metals by 6020	Residual Chlorine (Y/N)
			START DATE	END DATE				UNPRESERVED	H2SO4	HNO3	HCl	NaOH	Na2S2O3			
1	MCM-07-LT Asympt	DW	2/13/20 09:00		G		1									
2	TI-1-LT	WT	2/13/20 09:00		G		1									
3	TI-4-LT	WW	2/13/20 09:00		G		1									
4	TI-3-LT	P	2/13/20 09:00		G		1									
5	TI-2-LT	SL	2/13/20 09:00		G		1									
6	TI-1-LT	CL	2/13/20 09:00		G		1									
7	MCM-07-LT	WP	2/13/20 10:15		G		1									
8	TI-4-LT	AR	2/13/20 10:16		G		1									
9	TI-4-LT	OT	2/13/20 10:16		G		1									
10	TI-2-LT	T8	2/13/20 10:16		G		1									
11	TI-1-LT		2/13/20 10:16		G		1									
12	MCM-07-LT Asympt		2/13/20 10:16		G		1									

ADDITIONAL COMMENTS:
As only

RELINQUISHED BY / AFFILIATION:
 2/13/20 10:54 *[Signature]*
 2/14/20 10:48 *[Signature]*
 2/14/20 12:16 *[Signature]*

ACCEPTED BY / AFFILIATION:
 2/13/20 16:54 *[Signature]*
 2/14/20 10:48 *[Signature]*
 2/14/20 12:16 *[Signature]*

DATE: 2/13/20 16:54, 2/14/20 10:48, 2/14/20 12:16

TEMP in C: -

SAMPLE CONDITIONS:
 Received on: (Y/N)
 Ice: (Y/N)
 Sealed: (Y/N)
 Cooled: (Y/N)
 Intact: (Y/N)

SIGNATURES:
 PRINT Name of SAMPLER: *[Signature]*
 SIGNATURE of SAMPLER: *[Signature]*
 DATE Signed: 2/13/20



CHAIN-OF-CUSTODY / Analytical Request Document

WO#: 2628598

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

PM: KH Due Date: 02/05/20
CLIENT: 26-GA Power

Section A Required Client Information:
 Company: Georgia Power
 Address: 1003 Weatherstone Parkway
 Suite 320, Woodstock, GA 30188
 Email: lea.miller@resolutionsenv.com
 Phone: (751) 776-2760 Fax:
 Requested Due Date:

Section B Required Project Information:
 Report To: Miller, Lea
 Copy To:
 Purchase Order #: Plant McManus SW
 Project Name: Project #:

Section C Invoice Information:
 Attention: Kevin Herring
 Company Name: Pace Analytical
 Address: 2600 Peachtree Industrial Blvd, Atlanta, GA 30329
 Pace Quote: kevin.herring@pace-analytical.com
 Pace Project Manager: kevin.herring@pace-analytical.com
 Pace Profile #: 2919

ITEM #	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLER NAME AND SIGNATURE	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLER CONDITIONS	Received on	TEMP in C	Isol (Y/N)	Custody (Y/N)	Sealed (Y/N)	Samples Intact (Y/N)
		START DATE	END DATE														
1	T3-245			G	Kevin Herring	2/1/20	14:30	Kevin Herring / Pace	2/1/20	08:00	Y	Y	1.4	Y	Y	Y	Y
2	T3-145			G	Kevin Herring	2/1/20	14:30	Kevin Herring / Pace	2/1/20	08:00	Y	Y	1.4	Y	Y	Y	Y
3	McM-OS-45			G	Kevin Herring	2/1/20	14:30	Kevin Herring / Pace	2/1/20	08:00	Y	Y	1.4	Y	Y	Y	Y
4	McM-OS-13			G	Kevin Herring	2/1/20	14:30	Kevin Herring / Pace	2/1/20	08:00	Y	Y	1.4	Y	Y	Y	Y
5	McM-OS-17			G	Kevin Herring	2/1/20	14:30	Kevin Herring / Pace	2/1/20	08:00	Y	Y	1.4	Y	Y	Y	Y
6	T3-415			G	Kevin Herring	2/1/20	14:30	Kevin Herring / Pace	2/1/20	08:00	Y	Y	1.4	Y	Y	Y	Y
7	T3-315			G	Kevin Herring	2/1/20	14:30	Kevin Herring / Pace	2/1/20	08:00	Y	Y	1.4	Y	Y	Y	Y
8	T3-245			G	Kevin Herring	2/1/20	14:30	Kevin Herring / Pace	2/1/20	08:00	Y	Y	1.4	Y	Y	Y	Y
9	Dug-1			G	Kevin Herring	2/1/20	14:30	Kevin Herring / Pace	2/1/20	08:00	Y	Y	1.4	Y	Y	Y	Y
10																	
11																	
12																	

ADDITIONAL COMMENTS:
 As only

ANALYSIS TESTS:
 Metals by 6020
 Dissolved Metals by 6020
 Residual Chlorine (Y/N)

Preservatives:
 H2SO4
 HNO3
 HCl
 NaOH
 Na2S2O3
 Methanol
 Other

RECEIVED BY / AFFILIATION:
 Kevin Herring / Pace

DATE: 2/1/20
TIME: 08:00

TEMP in C: 1.4

Isol (Y/N): Y
Custody (Y/N): Y
Sealed (Y/N): Y
Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE:
 Kevin Herring
DATE: 2/1/20



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

WO#: 2628598

PM: KH Due Date: **02/05/20**
CLIENT: 26-GA Power

Section A
 Required Client Information:
 Company: Georgia Power
 Address: 1003 Weatherstone Parkway
 Suite 320, Woodstock, GA 30188
 Email: kea.millet@pacelabs.com
 Phone: (251) 776-2780 Fax
 Requested Due Date:

Section B
 Required Project Information:
 Report To: Millet, Lea
 Copy To:
 Purchase Order #: Plant McMarus SW
 Project Name: Project #:

Section C
 Invoice Information:
 Attribution:
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: kevin.heating@pacelabs.com
 Pace Profile #: 2819
 Regulatory Agency:
 State/County/Capitol:
 GA

ITEM #	MATRIX	MATRIX CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES							ANALYSIS TEST	Metals by 6020	Dissolved Metals by 6020	Residual Chlorine (Y/N)		
			START	END				DATE	TIME	H2SO4	HNO3	HCl	NaOH	Na2S2O3					Methanol	Other
1	T2-4HT						1													
2	MCM-06-LT Asignand						1													
3	REG-MCM-06-LT						1													
4	T2-4HT						1													
6	T2-3LT						1													
8	T2-2LT						1													
7	T3-4HTS						1													
8	T3-4HT						1													
9	T3-3HTS						1													
10	T3-3HT						1													
11	T3-2HTS						1													
12	MCM-05-HT Asignand						1													

As only

RELINQUISHED BY (APPLICATION) DATE TIME ACCEPTED BY (APPLICATION) DATE TIME

RELINQUISHED BY: [Signature] DATE: 2/4/20 TIME: 0800
 ACCEPTED BY: K. Wellington/Pace Sub Ex DATE: 2/4/20 TIME: 0800

TEMP IN C

Received on ice (Y/N)

Sealed Cooler (Y/N)

Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: K. Wellington
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed: 2/4/20



CHAIN-OF-CUSTODY / Analytical Request Docu

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

WO#: 2628598

PM: KH Due Date: 02/05/20

CLIENT: 26-GA Power

Section A

Required Client Information:

Company: Georgia Power
 Address: 1003 Weatherstone Parkway
 Suite 320, Woodstock, GA 30188
 Email: lea.millet@racelab.com
 Phone: (251) 776-2760 Fax:
 Requested Due Date:

Section B

Required Project Information:

Report To: Millie Lewis
 Copy To: *William Stofor*
 Purchase Order #: Plant McManus SW
 Project Name:
 Project #:

Section C

Invoice Information:

Attention:
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: kevin.herring@pacelab.com
 Pace Profile #: 2919

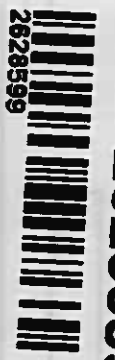
ITEM #	MATRIX CODE Disting Water Waste Water Product Soils/solid Oil Wipe Air Other Tissue	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-RAB C-COMP)	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFIRMATION	DATE	TIME	TEMP IN C	Received on	Is (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
				START	END													
1			G Grab	2/3/20	14:30	2/3/20	16:57	2/3/20	16:57	<i>K. Williams</i>	2/3/20	16:57	40	Y	Y	Y	Y	Y
2			G Grab	2/3/20	14:35	2/3/20	10:48	2/3/20	10:48	<i>K. Williams</i>	2/3/20	10:48	40	Y	Y	Y	Y	Y
3			G Grab	2/3/20	14:46	2/3/20	12:16	2/3/20	12:16	<i>K. Williams</i>	2/3/20	12:16	40	Y	Y	Y	Y	Y
4			G Grab	2/3/20	10:45	2/3/20	10:48	2/3/20	10:48	<i>K. Williams</i>	2/3/20	10:48	40	Y	Y	Y	Y	Y
5			G Grab	2/3/20	10:45	2/3/20	10:48	2/3/20	10:48	<i>K. Williams</i>	2/3/20	10:48	40	Y	Y	Y	Y	Y
6			G Grab	2/3/20	10:45	2/3/20	10:48	2/3/20	10:48	<i>K. Williams</i>	2/3/20	10:48	40	Y	Y	Y	Y	Y
7			G Grab	2/3/20	10:45	2/3/20	10:48	2/3/20	10:48	<i>K. Williams</i>	2/3/20	10:48	40	Y	Y	Y	Y	Y
8			G Grab	2/3/20	10:45	2/3/20	10:48	2/3/20	10:48	<i>K. Williams</i>	2/3/20	10:48	40	Y	Y	Y	Y	Y
9			G Grab	2/3/20	10:45	2/3/20	10:48	2/3/20	10:48	<i>K. Williams</i>	2/3/20	10:48	40	Y	Y	Y	Y	Y
10			G Grab	2/3/20	10:45	2/3/20	10:48	2/3/20	10:48	<i>K. Williams</i>	2/3/20	10:48	40	Y	Y	Y	Y	Y
11			G Grab	2/3/20	10:45	2/3/20	10:48	2/3/20	10:48	<i>K. Williams</i>	2/3/20	10:48	40	Y	Y	Y	Y	Y
12			G Grab	2/3/20	10:45	2/3/20	10:48	2/3/20	10:48	<i>K. Williams</i>	2/3/20	10:48	40	Y	Y	Y	Y	Y



CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu

W0#: 2628599



2628599

Section A

Required Client Information:
Company: Georgia Power
Address: 1003 Westbriar Parkway
Suite 320, Woodstock, GA 30188
Email: lea.milledge@ge.com
Phone: (770) 276-2760
Requested Due Date:

Section B

Required Project Information:
Report To: Millie Lee
Copy To: *M. Lee*
Purchase Order #:
Project Name: Plant McManus SW
Project #:

Section C

Invoice Information:
Attention:
Company Name:
Address:
Pace Quote:
Pace Project Manager: Kevin Herring
Pace Profile #: 2919

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test		Residual Chlorine (Y/N)		
			START DATE TIME	END DATE TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Metals by 6020		Disolved Metals by 6020	
1	T2-4HT	G	2/12/10 15:14			1												
2	MCM-DBLT Asupond	G	2/12/10 08:00			1												
3	MCM-DBLT	G	2/12/10 09:00			1												
4	T2-4LT	G	2/12/10 09:00			1												
5	T2-2LT	G	2/12/10 11:20			1												
6	T2-3LT	G	2/12/10 11:20			1												
7	T3-4HTS	G	2/12/10 13:44			1												
8	T3-4HT	G	2/12/10 13:50			1												
9	T3-3HTS	G	2/12/10 13:58			1												
10	T3-3HT	G	2/12/10 14:10			1												
11	T3-2HTS	G	2/12/10 14:28			1												
12	MCM-OSHT Asupond	G	2/12/10 14:30			1												

As Supond

Kept Supond *2/12/10* *West* *1048* *Shore* *2/12/10* *16:57*

Shore *2/12/10* *10:18*

Shore *2/12/10* *12:16* *40*

Kept Supond *2/12/10* *West* *1048* *Shore* *2/12/10* *16:57*

Shore *2/12/10* *10:18*

Shore *2/12/10* *12:16* *40*

PRINT Name of SAFFLER: *Kevin Herring* DATE Signed: *2/12/10*

Signature of SAFFLER: *Kevin Herring*

Signature of SAFFLER: *Kevin Herring*

TEMP in C: *40*

Received on Ice (Y/N): *Y*

Custody Sealed Cooler (Y/N): *Y*

Samples Intact (Y/N): *Y*



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

WO# : 2628599
PM: KH
CLIENT : 26-GR Power
Due Date: 02/07/20

Section A Required Client Information:
 Company: Georgia Power
 Address: 1003 Westlakeside Parkway
 Building: 220, Woodstock, GA 30188
 Email: lea.miller@resolutions.com
 Phone: (251) 776-2760
 Requested Due Date: []

Section B Required Project Information:
 Report To: Millie Lee
 Copy To: Amber Sykes
 Purchase Order #: []
 Project Name: Plant Mckinnis SW
 Project #:

Section C Invoice Information:
 Attention: []
 Company Name: []
 Address: []
 Project Manager: Kevin Herring
 Project Profile #: 2919

ITEM #	SAMPLE ID (A-Z, 0-9 / . -) Sample IDs must be unique	MATRIX	CODE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Metals by 6020	Dissolved Metals by 6020	Residual Chlorine (Y/N)	
				START DATE	END DATE			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol				Other
MCN-0715	Asphalt	Gravel	G 21120 0910				1											
TT-411T		Gravel	G 21120 0910				1											
TT-411T		Gravel	G 21120 0910				1											
TT-311T		Gravel	G 21120 1006				1											
MCN-0715		Gravel	G 21120 1016				1											
TT-211T		Gravel	G 21120 1334				1											
TT-411T		Gravel	G 21120 1340				1											
TT-211T		Gravel	G 21120 1352				1											
TT-211T		Gravel	G 21120 1355				1											
TT-211T		Gravel	G 21120 1355				1											
MCN-0615	Asphalt	Gravel	G 21120 1355				1											
MCN-0615	Asphalt	Gravel	G 21120 1355				1											

PRINT Name of SAMPLER: []
DATE SIGNED: []
TEMP in C: []
Received on Ice (Y/N): []
Custody Sealed Cooler (Y/N): []
Samples Intact (Y/N): []



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

W0# : 2628599

PM: KH Due Date: 02/07/20
CLIENT: 26-GR Power

Section A

Requested Client Information:
Company: Georgia Power
Address: 1003 Weststratone Parkway
Suite 320, Woodstock, GA 30188
Email: lea.miller@georgiapower.com
Phone: (251)776-2760 Fax: [blank]
Requested Due Date: [blank]

Section B

Requested Project Information:
Report To: Millie Lee
Copy To: [blank]
Purchase Order #: [blank]
Project Name: Plant Mechanism SW
Project #:

Section C

Invoice Information:
Attention: [blank]
Company Name: [blank]
Address: [blank]
Pace Quote: [blank]
Pace Project Manager: Kevin Herring
Pace Profile #: 2919

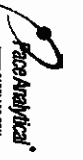
ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / -)	MATRIX	CODE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Metals by 6020	Dissolved Metals by 6020	Residual Chlorine (Y/N)
				START DATE	END DATE			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol			
TA-3HT	TA-3HT	Drinking Water	DW				1										
TA-3HT	TA-3HT	Water	WT				1										
TA-3HT	TA-3HT	Waste Water	WW				1										
TA-3HT	TA-3HT	Product Water	P				1										
TA-3HT	TA-3HT	Soil/Sediment	SL				1										
TA-3HT	TA-3HT	Oil	OL				1										
TA-3HT	TA-3HT	Wipe	WP				1										
TA-3HT	TA-3HT	Air	AR				1										
TA-3HT	TA-3HT	Other	OT				1										
TA-3HT	TA-3HT	Tissue	TS				1										

MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME	Temp	Time	Temp	Time
G	G	2/12/20	1355			1	1		
G	G	2/12/20	1356			1	1		
G	G	2/12/20	1408			1	1		
G	G	2/12/20	1416			1	1		
G	G	2/12/20	1420			1	1		
G	G	2/12/20	1420			1	1		
G	G	2/12/20	1428			1	1		
G	G	2/12/20	1432			1	1		
G	G	2/12/20	1446			1	1		
G	G	2/12/20	1450			1	1		
G	G	2/12/20	1500			1	1		

COLLECTED BY: [blank]

DATE	TIME	DATE	TIME	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2/12/20	1654	2/13/20	1654				Y	Y	Y
2/12/20	10:48	2/12/20	10:48						
2/12/20	18:16	2/12/20	18:16						

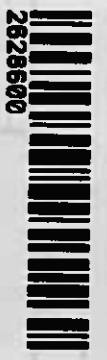
PRINT Name of SAMPLER: [blank]
DATE Signed: 2/23/20



CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields:

WQ#: 2628600



2628600

Section A

Required Client Information:
 Company: Georgia Power
 Address: 1003 Weatherstone Parkway
 Suite 320 Woodstock, GA 30188
 Email: lea.miller@gepower.com
 Phone: (251)776-2760
 Requested Due Date:

Section B

Required Project Information:
 Report To: Miller, Lea
 Copy To:
 Purchase Order #:
 Project Name: Plant McKinna SW
 Project #:

Section C

Invoice Information:
 Attention:
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: Kevin.Herring@pecelabs.com,
 Pace Profile #: 2919

Regulatory Agency:
 State / Location: GA

ITEM #	SAMPLE ID <small>One Character per box. (A-Z, 0-9 / . -)</small> Sample IDs must be unique	MATRIX		MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	PRESERVATIVES								ANALYSES TEST		Residual Chlorine (Y/N)								
		Drinking Water	Waste Water			Start	End		Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Metals by 6020	Dissolved Metals by 6020									
1	T2-4HT	✓	✓	GA	GRAB	15/14																					
2	MCNA-OLIT Adugond	✓	✓	GA	GRAB	08/30																					
3	MCNA-OLIT	✓	✓	GA	GRAB	09/05																					
4	T2-4LS	✓	✓	GA	GRAB	09/05																					
5	T2-3LT	✓	✓	GA	GRAB	09/20																					
6	T2-2LT	✓	✓	GA	GRAB	11/08																					
7	T3-4HTS	✓	✓	GA	GRAB	12/14																					
8	T3-4HT	✓	✓	GA	GRAB	12/30																					
9	T3-3HTS	✓	✓	GA	GRAB	1/08																					
10	T3-3HT	✓	✓	GA	GRAB	1/10																					
11	T3-2HTS	✓	✓	GA	GRAB	1/28																					
12	MCNA-OLIT Adugond	✓	✓	GA	GRAB	1/30																					

COULD ONLY

Kevin Stinson

2/10/20

5-17

Kevin Stinson

2/10/20

Kevin Stinson

ADDITIONAL COMMENTS	RECEIVED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP IN C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Kevin Stinson	2/10/20	1:4	Kevin Stinson	2/10/20	8:00	1.4	Y	Y	Y

LABORATORY USE ONLY

PRINT Name of SAMPLER: Kevin Stinson

SIGNATURE OF SAMPLER: *Kevin Stinson*

DATE SIGNED: 2/10/20

TEMP IN C

Received on ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)



CHAIN-OF-CUSTODY / Analytical Request D
 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu

WO# : 2628600

PM: KH Due Date: 02/11/20
 CLIENT: 26-GA Power

Section A

Requested Client Information:
 Company: Georgia Power
 Address: 1000 Weatherstone Parkway
 Suite 320, Woodstock, GA 30188
 Email: lea.miller@ge.com
 Phone: (251) 776-2760 Fax:
 Requested Due Date:

Section B

Required Project Information:
 Report To: Milliel, Lea
 Copy To:
 Purchase Order #:
 Project Name: Plant Mechanus SW
 Project #:

Section C

Invoice Information:
 Attention:
 Company Name:
 Address:
 Pace Quota:
 Pace Project Manager: Kevin Herring@paceelab.com
 Pace Profile #: 2919

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test	Residual Chlorine (Y/N)				
			START DATE TIME	END DATE TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol			Other			
1	TS-2-VIS	G Grab	1/23/20	14:00		1													
2	TS-1-VIS	G Grab	1/23/20	14:05		1													
3	MCN-OS-VIS	G Grab	1/23/20	14:10		1													
4	MCN-OS-VIS	G Grab	1/23/20	14:15		1													
5	MCN-OS-VIS	G Grab	1/23/20	14:20		1													
6	TS-2-VIS	G Grab	1/23/20	14:25		1													
7	TS-3-VIS	G Grab	1/23/20	14:30		1													
8	TS-2-VIS	G Grab	1/23/20	14:35		1													
9	Dag-1	G Grab	1/23/20	14:40		1													
10																			
11																			
12																			

ADDITIONAL COMMENTS: *Call Only*

RELINQUISHED BY / AFFILIATION: *Kenn Stinson*

DATE: *1/23/20* TIME: *14:40*

ACCEPTED BY / AFFILIATION: *SEBEX K. Wellington / Pace*

DATE: *2/3/20* TIME: *0800*

TEMP in C: *14*

Received on Ice (Y/N): *Y*

Custody Sealed Cooler (Y/N): *Y*

Samples Intact (Y/N): *Y*

SAMPLER NAME AND SIGNATURE: *[Signature]*

PRINT Name of SAMPLER: *[Name]*

SIGNATURE OF SAMPLER: *[Signature]*

DATE signed: *2/3/20*

March 31, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: Plant McManus SW
Pace Project No.: 92470735

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 24, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McManus SW
Pace Project No.: 92470735

Pace Analytical Services Asheville

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus SW

Pace Project No.: 92470735

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92470735001	T4-1L	Water	03/18/20 14:18	03/24/20 12:20
92470735002	T4-2L	Water	03/18/20 13:50	03/24/20 12:20
92470735003	T4-3L	Water	03/18/20 13:06	03/24/20 12:20
92470735004	T4-4L	Water	03/18/20 11:55	03/24/20 12:20
92470735005	T4-1HS	Water	03/18/20 17:30	03/24/20 12:20
92470735006	T4-2HS	Water	03/18/20 17:50	03/24/20 12:20
92470735007	T4-3HS	Water	03/18/20 18:12	03/24/20 12:20
92470735008	T4-4HS	Water	03/18/20 18:40	03/24/20 12:20
92470735009	T4-1HB	Water	03/18/20 17:35	03/24/20 12:20
92470735010	T4-2HB	Water	03/18/20 17:55	03/24/20 12:20
92470735011	T4-3HB	Water	03/18/20 18:17	03/24/20 12:20
92470735012	T4-4HB	Water	03/18/20 18:45	03/24/20 12:20
92470735013	POND 4L	Water	03/18/20 11:14	03/24/20 12:20
92470735014	MCM-14L	Water	03/18/20 12:30	03/24/20 12:20
92470735015	POND 4H	Water	03/18/20 17:45	03/24/20 12:20
92470735016	MCM-14H	Water	03/18/20 19:27	03/24/20 12:20
92470735017	DUP-1	Water	03/18/20 00:00	03/24/20 12:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus SW
Pace Project No.: 92470735

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92470735001	T4-1L	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735002	T4-2L	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735003	T4-3L	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735004	T4-4L	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735005	T4-1HS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735006	T4-2HS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735007	T4-3HS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735008	T4-4HS	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735009	T4-1HB	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735010	T4-2HB	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735011	T4-3HB	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735012	T4-4HB	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735013	POND 4L	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735014	MCM-14L	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735015	POND 4H	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735016	MCM-14H	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A
92470735017	DUP-1	EPA 6020B	JOR	3	PASI-A
		EPA 6020B	JOR	3	PASI-A

PASI-A = Pace Analytical Services - Asheville

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW
Pace Project No.: 92470735

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92470735001	T4-1L					
EPA 6020B	Arsenic	0.0034	mg/L	0.0020	03/27/20 20:19	
EPA 6020B	Lithium	0.076	mg/L	0.050	03/27/20 20:19	M6
EPA 6020B	Arsenic, Dissolved	0.0018J	mg/L	0.0020	03/28/20 01:09	1g
EPA 6020B	Lithium, Dissolved	0.056	mg/L	0.050	03/28/20 01:09	1g,M6
92470735002	T4-2L					
EPA 6020B	Arsenic	0.0014J	mg/L	0.0020	03/26/20 23:21	
EPA 6020B	Lithium	0.043J	mg/L	0.050	03/26/20 23:21	
EPA 6020B	Arsenic, Dissolved	0.0012J	mg/L	0.0020	03/26/20 20:58	1g
EPA 6020B	Lithium, Dissolved	0.061	mg/L	0.050	03/26/20 20:58	1g
92470735003	T4-3L					
EPA 6020B	Arsenic	0.0035	mg/L	0.0020	03/26/20 23:25	
EPA 6020B	Cobalt	0.0020	mg/L	0.0020	03/26/20 23:25	
EPA 6020B	Lithium	0.053	mg/L	0.050	03/26/20 23:25	
EPA 6020B	Arsenic, Dissolved	0.0021	mg/L	0.0020	03/26/20 21:02	1g
EPA 6020B	Lithium, Dissolved	0.037J	mg/L	0.050	03/26/20 21:02	1g
92470735004	T4-4L					
EPA 6020B	Arsenic	0.0031	mg/L	0.0020	03/26/20 23:39	
EPA 6020B	Lithium	0.062	mg/L	0.050	03/26/20 23:39	
EPA 6020B	Lithium, Dissolved	0.036J	mg/L	0.050	03/26/20 21:06	1g
92470735005	T4-1HS					
EPA 6020B	Arsenic	0.0012J	mg/L	0.0020	03/26/20 23:43	
EPA 6020B	Lithium	0.042J	mg/L	0.050	03/26/20 23:43	
EPA 6020B	Lithium, Dissolved	0.058	mg/L	0.050	03/26/20 21:11	1g
92470735006	T4-2HS					
EPA 6020B	Lithium	0.043J	mg/L	0.050	03/26/20 23:47	
EPA 6020B	Arsenic, Dissolved	0.0013J	mg/L	0.0020	03/26/20 21:15	1g
EPA 6020B	Lithium, Dissolved	0.064	mg/L	0.050	03/26/20 21:15	1g
92470735007	T4-3HS					
EPA 6020B	Lithium	0.035J	mg/L	0.050	03/26/20 23:52	
EPA 6020B	Lithium, Dissolved	0.051	mg/L	0.050	03/26/20 21:28	1g
92470735008	T4-4HS					
EPA 6020B	Lithium	0.047J	mg/L	0.050	03/26/20 23:56	
EPA 6020B	Lithium, Dissolved	0.041J	mg/L	0.050	03/26/20 21:32	1g
92470735009	T4-1HB					
EPA 6020B	Lithium	0.036J	mg/L	0.050	03/27/20 00:00	
EPA 6020B	Lithium, Dissolved	0.033J	mg/L	0.050	03/26/20 21:37	1g
92470735010	T4-2HB					
EPA 6020B	Arsenic	0.0015J	mg/L	0.0020	03/27/20 00:05	
EPA 6020B	Lithium	0.048J	mg/L	0.050	03/27/20 00:05	
EPA 6020B	Lithium, Dissolved	0.042J	mg/L	0.050	03/26/20 21:41	1g

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW

Pace Project No.: 92470735

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92470735011	T4-3HB					
EPA 6020B	Lithium	0.036J	mg/L	0.050	03/27/20 00:09	
EPA 6020B	Arsenic, Dissolved	0.0023	mg/L	0.0020	03/26/20 21:45	1g
EPA 6020B	Cobalt, Dissolved	0.0049	mg/L	0.0020	03/26/20 21:45	1g
EPA 6020B	Lithium, Dissolved	0.064	mg/L	0.050	03/26/20 21:45	1g
92470735012	T4-4HB					
EPA 6020B	Lithium	0.035J	mg/L	0.050	03/27/20 00:13	
EPA 6020B	Arsenic, Dissolved	0.0017J	mg/L	0.0020	03/26/20 21:50	1g
EPA 6020B	Cobalt, Dissolved	0.0036	mg/L	0.0020	03/26/20 21:50	1g
EPA 6020B	Lithium, Dissolved	0.066	mg/L	0.050	03/26/20 21:50	1g
92470735013	POND 4L					
EPA 6020B	Arsenic	0.0015J	mg/L	0.0020	03/27/20 00:18	
EPA 6020B	Lithium	0.022J	mg/L	0.050	03/27/20 00:18	
EPA 6020B	Arsenic, Dissolved	0.0013J	mg/L	0.0020	03/26/20 21:54	1g
EPA 6020B	Cobalt, Dissolved	0.0013J	mg/L	0.0020	03/26/20 21:54	1g
EPA 6020B	Lithium, Dissolved	0.022J	mg/L	0.050	03/26/20 21:54	1g
92470735014	MCM-14L					
EPA 6020B	Lithium	0.040J	mg/L	0.050	03/27/20 00:31	
EPA 6020B	Cobalt, Dissolved	0.0015J	mg/L	0.0020	03/26/20 21:58	1g
EPA 6020B	Lithium, Dissolved	0.055	mg/L	0.050	03/26/20 21:58	1g
92470735015	POND 4H					
EPA 6020B	Arsenic	0.0012J	mg/L	0.0020	03/27/20 00:35	
EPA 6020B	Lithium	0.016J	mg/L	0.050	03/27/20 00:35	
EPA 6020B	Arsenic, Dissolved	0.0013J	mg/L	0.0020	03/26/20 22:03	1g
EPA 6020B	Cobalt, Dissolved	0.0016J	mg/L	0.0020	03/26/20 22:03	1g
EPA 6020B	Lithium, Dissolved	0.020J	mg/L	0.050	03/26/20 22:03	1g
92470735016	MCM-14H					
EPA 6020B	Lithium	0.035J	mg/L	0.050	03/27/20 00:39	
EPA 6020B	Cobalt, Dissolved	0.0031	mg/L	0.0020	03/26/20 22:07	1g
EPA 6020B	Lithium, Dissolved	0.044J	mg/L	0.050	03/26/20 22:07	1g
92470735017	DUP-1					
EPA 6020B	Lithium	0.039J	mg/L	0.050	03/27/20 00:44	
EPA 6020B	Arsenic, Dissolved	0.0012J	mg/L	0.0020	03/28/20 01:23	1g
EPA 6020B	Lithium, Dissolved	0.053	mg/L	0.050	03/28/20 01:23	1g

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW
Pace Project No.: 92470735

Sample: T4-1L		Lab ID: 92470735001		Collected: 03/18/20 14:18		Received: 03/24/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0034	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/27/20 20:19	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/27/20 20:19	7440-48-4	
Lithium	0.076	mg/L	0.050	0.0084	20	03/25/20 00:22	03/27/20 20:19	7439-93-2	M6
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	0.0018J	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/28/20 01:09	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/28/20 01:09	7440-48-4	1g
Lithium, Dissolved	0.056	mg/L	0.050	0.0084	20	03/26/20 03:08	03/28/20 01:09	7439-93-2	1g,M6

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-2L		Lab ID: 92470735002		Collected: 03/18/20 13:50	Received: 03/24/20 12:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0014J	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/26/20 23:21	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/26/20 23:21	7440-48-4	
Lithium	0.043J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/26/20 23:21	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	0.0012J	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 20:58	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 20:58	7440-48-4	1g
Lithium, Dissolved	0.061	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 20:58	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-3L **Lab ID: 92470735003** Collected: 03/18/20 13:06 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0035	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/26/20 23:25	7440-38-2	
Cobalt	0.0020	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/26/20 23:25	7440-48-4	
Lithium	0.053	mg/L	0.050	0.0084	20	03/25/20 00:22	03/26/20 23:25	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0021	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:02	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:02	7440-48-4	1g
Lithium, Dissolved	0.037J	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:02	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-4L **Lab ID: 92470735004** Collected: 03/18/20 11:55 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0031	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/26/20 23:39	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/26/20 23:39	7440-48-4	
Lithium	0.062	mg/L	0.050	0.0084	20	03/25/20 00:22	03/26/20 23:39	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:06	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:06	7440-48-4	1g
Lithium, Dissolved	0.036J	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:06	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-1HS **Lab ID: 92470735005** Collected: 03/18/20 17:30 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0012J	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/26/20 23:43	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/26/20 23:43	7440-48-4	
Lithium	0.042J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/26/20 23:43	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:11	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:11	7440-48-4	1g
Lithium, Dissolved	0.058	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:11	7439-93-2	1g

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-2HS **Lab ID: 92470735006** Collected: 03/18/20 17:50 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/26/20 23:47	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/26/20 23:47	7440-48-4	
Lithium	0.043J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/26/20 23:47	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0013J	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:15	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:15	7440-48-4	1g
Lithium, Dissolved	0.064	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:15	7439-93-2	1g

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-3HS **Lab ID: 92470735007** Collected: 03/18/20 18:12 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/26/20 23:52	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/26/20 23:52	7440-48-4	
Lithium	0.035J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/26/20 23:52	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:28	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:28	7440-48-4	1g
Lithium, Dissolved	0.051	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:28	7439-93-2	1g

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-4HS **Lab ID: 92470735008** Collected: 03/18/20 18:40 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/26/20 23:56	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/26/20 23:56	7440-48-4	
Lithium	0.047J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/26/20 23:56	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:32	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:32	7440-48-4	1g
Lithium, Dissolved	0.041J	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:32	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-1HB **Lab ID: 92470735009** Collected: 03/18/20 17:35 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/27/20 00:00	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/27/20 00:00	7440-48-4	
Lithium	0.036J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/27/20 00:00	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:37	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:37	7440-48-4	1g
Lithium, Dissolved	0.033J	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:37	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-2HB **Lab ID: 92470735010** Collected: 03/18/20 17:55 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0015J	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/27/20 00:05	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/27/20 00:05	7440-48-4	
Lithium	0.048J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/27/20 00:05	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:41	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:41	7440-48-4	1g
Lithium, Dissolved	0.042J	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:41	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-3HB **Lab ID: 92470735011** Collected: 03/18/20 18:17 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/27/20 00:09	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/27/20 00:09	7440-48-4	
Lithium	0.036J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/27/20 00:09	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0023	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:45	7440-38-2	1g
Cobalt, Dissolved	0.0049	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:45	7440-48-4	1g
Lithium, Dissolved	0.064	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:45	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: T4-4HB **Lab ID: 92470735012** Collected: 03/18/20 18:45 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/27/20 00:13	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/27/20 00:13	7440-48-4	
Lithium	0.035J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/27/20 00:13	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0017J	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:50	7440-38-2	1g
Cobalt, Dissolved	0.0036	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:50	7440-48-4	1g
Lithium, Dissolved	0.066	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:50	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW
Pace Project No.: 92470735

Sample: POND 4L		Lab ID: 92470735013		Collected: 03/18/20 11:14	Received: 03/24/20 12:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0015J	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/27/20 00:18	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/27/20 00:18	7440-48-4	
Lithium	0.022J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/27/20 00:18	7439-93-2	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic, Dissolved	0.0013J	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:54	7440-38-2	1g
Cobalt, Dissolved	0.0013J	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:54	7440-48-4	1g
Lithium, Dissolved	0.022J	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:54	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: MCM-14L **Lab ID: 92470735014** Collected: 03/18/20 12:30 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/27/20 00:31	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/27/20 00:31	7440-48-4	
Lithium	0.040J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/27/20 00:31	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 21:58	7440-38-2	1g
Cobalt, Dissolved	0.0015J	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 21:58	7440-48-4	1g
Lithium, Dissolved	0.055	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 21:58	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: POND 4H		Lab ID: 92470735015		Collected: 03/18/20 17:45	Received: 03/24/20 12:20	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic	0.0012J	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/27/20 00:35	7440-38-2		
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/27/20 00:35	7440-48-4		
Lithium	0.016J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/27/20 00:35	7439-93-2		
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville								
Arsenic, Dissolved	0.0013J	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 22:03	7440-38-2	1g	
Cobalt, Dissolved	0.0016J	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 22:03	7440-48-4	1g	
Lithium, Dissolved	0.020J	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 22:03	7439-93-2	1g	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: MCM-14H **Lab ID: 92470735016** Collected: 03/18/20 19:27 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/27/20 00:39	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/27/20 00:39	7440-48-4	
Lithium	0.035J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/27/20 00:39	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	ND	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/26/20 22:07	7440-38-2	1g
Cobalt, Dissolved	0.0031	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/26/20 22:07	7440-48-4	1g
Lithium, Dissolved	0.044J	mg/L	0.050	0.0084	20	03/26/20 03:08	03/26/20 22:07	7439-93-2	1g

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 92470735

Sample: DUP-1 **Lab ID: 92470735017** Collected: 03/18/20 00:00 Received: 03/24/20 12:20 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0020	0.0012	20	03/25/20 00:22	03/27/20 00:44	7440-38-2	
Cobalt	ND	mg/L	0.0020	0.0010	20	03/25/20 00:22	03/27/20 00:44	7440-48-4	
Lithium	0.039J	mg/L	0.050	0.0084	20	03/25/20 00:22	03/27/20 00:44	7439-93-2	
6020 MET ICPMS, Dissolved									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic, Dissolved	0.0012J	mg/L	0.0020	0.0012	20	03/26/20 03:08	03/28/20 01:23	7440-38-2	1g
Cobalt, Dissolved	ND	mg/L	0.0020	0.0010	20	03/26/20 03:08	03/28/20 01:23	7440-48-4	1g
Lithium, Dissolved	0.053	mg/L	0.050	0.0084	20	03/26/20 03:08	03/28/20 01:23	7439-93-2	1g

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QUALITY CONTROL DATA

Project: Plant McManus SW
Pace Project No.: 92470735

QC Batch:	532336	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3010A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92470735001, 92470735002, 92470735003, 92470735004, 92470735005, 92470735006, 92470735007, 92470735008, 92470735009, 92470735010, 92470735011, 92470735012, 92470735013, 92470735014, 92470735015, 92470735016, 92470735017

METHOD BLANK: 2841830 Matrix: Water
Associated Lab Samples: 92470735001, 92470735002, 92470735003, 92470735004, 92470735005, 92470735006, 92470735007, 92470735008, 92470735009, 92470735010, 92470735011, 92470735012, 92470735013, 92470735014, 92470735015, 92470735016, 92470735017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.00010	0.000060	03/26/20 22:51	
Cobalt	mg/L	ND	0.00010	0.000050	03/26/20 22:51	
Lithium	mg/L	ND	0.0025	0.00042	03/26/20 22:51	

LABORATORY CONTROL SAMPLE: 2841831

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.0098	98	80-120	
Cobalt	mg/L	0.01	0.011	106	80-120	
Lithium	mg/L	0.05	0.052	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2841832 2841833

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92470735001 Result	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	0.0034	0.01	0.01	0.011	0.011	80	81	75-125	1	20
Cobalt	mg/L	ND	0.01	0.01	0.0094	0.0099	94	99	75-125	5	20
Lithium	mg/L	0.076	0.05	0.05	0.097	0.10	42	52	75-125	5	20 M6

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QUALITY CONTROL DATA

Project: Plant McManus SW

Pace Project No.: 92470735

QC Batch: 532344

Analysis Method: EPA 6020B

QC Batch Method: EPA 3010A

Analysis Description: 6020 MET Dissolved

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92470735001, 92470735002, 92470735003, 92470735004, 92470735005, 92470735006, 92470735007, 92470735008, 92470735009, 92470735010, 92470735011, 92470735012, 92470735013, 92470735014, 92470735015, 92470735016, 92470735017

METHOD BLANK: 2841847

Matrix: Water

Associated Lab Samples: 92470735001, 92470735002, 92470735003, 92470735004, 92470735005, 92470735006, 92470735007, 92470735008, 92470735009, 92470735010, 92470735011, 92470735012, 92470735013, 92470735014, 92470735015, 92470735016, 92470735017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.00010	0.000060	03/26/20 20:19	
Cobalt, Dissolved	mg/L	ND	0.00010	0.000050	03/26/20 20:19	
Lithium, Dissolved	mg/L	ND	0.0025	0.00042	03/26/20 20:19	

LABORATORY CONTROL SAMPLE: 2841848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.01	0.011	113	80-120	
Cobalt, Dissolved	mg/L	0.01	0.011	112	80-120	
Lithium, Dissolved	mg/L	0.05	0.057	114	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2841849 2841850

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92470735001 Result	Spike Conc.	Spike Conc.	Result						
Arsenic, Dissolved	mg/L	0.0018J	0.01	0.01	0.010	0.011	86	93	75-125	6	20
Cobalt, Dissolved	mg/L	ND	0.01	0.01	0.0090	0.0096	89	95	75-125	7	20
Lithium, Dissolved	mg/L	0.056	0.05	0.05	0.091	0.097	69	81	75-125	6	20 M6

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

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QUALIFIERS

Project: Plant McManus SW

Pace Project No.: 92470735

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt(SCUR)
Document No.:
F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
Page 1 of 2
Issuing Authority:
Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition Upon Receipt

Client Name:

GA Power

Project

WO#: 92470735



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

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: N.P.F 3/24/20

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?
 Yes No N/A

Thermometer: 937061 Type of Ice: Wet Blue None

IR Gun ID: _____ Cooler Temp (°C): 8.5 Correction Factor: Add/Subtract (°C) 0.0

Temp should be above freezing to 6°C

Cooler Temp Corrected (°C): 8.5

Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>			
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DR0/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottle

Project **WO# : 92470735**

PM: KLH1 Due Date: 03/31/20

CLIENT: 26-GA Power

1062

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)	
1																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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



Document Name:
 Sample Condition Upon Receipt(SCUR)
 Document No.:
 F-CAR-CS-033-Rev.06

Document Revised: February 7, 2013
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

Proj **WO#: 92470735**
 PM: KLH1 Due Date: 03/31/20
 CLIENT: 26-GA Power

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRD/8015 (water) DOC, L/Hg

**Bottom half of box is to list number of bottle

2 of 2

Item#	Item Description	1	2	3	4	5	6	7	8	9	10	11	12
BP4U-125 mL Plastic Unpreserved (N/A) (C+)	BP3U-250 mL Plastic Unpreserved (N/A)												
BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)												
BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)												
BP4Z-125 mL Plastic ZN Acetate & NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass Jar Unpreserved												
AG1U-1 liter Amber Unpreserved (N/A) (C)	AG1H-1 liter Amber HCl (pH < 2)												
AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG1S-1 liter Amber H2SO4 (pH < 2)												
AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)												
DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA N2S2O3 (N/A)												
VG9U-40 mL VOA One (N/A)	DG9P-40 mL VOA H3PO4 (N/A)												
VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)												
SP2T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)												
BP3A-250 mL Plastic (NH4)2SO4 (pH > 9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)												
VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)												

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Section B Required Project Information: Section C Invoice Information: Regulatory Agency: State / Location: GA

Company: Resolute Environment
 Address: 1003 Westchester Parkway, Suite 320, Woodstock, GA, 30189
 Email: Stephen.Wilson@resoluteenv.com
 Phone: (404)359-9469 Fax
 Requested Due Date:
 Report To: Stephen Wilson, Trent Godwin
 Copy To: Lauren Peip, Leslie Miller
 Purchase Order #:
 Project Name: Plant Mechanics SW
 Project #:
 Attention:
 Company Name:
 Address:
 Pace Order:
 Pace Project Manager: Kevin Harman@pacelabs.com
 Pace Profile #: 2019
 Regulatory Agency:
 State / Location: GA

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9, '-', ' ') Sample IDs must be unique	MATRIX CODE DW SW WT PT SC SL SA WP AS AT TS	MATRIX Type Waste Product Other Wipe Air Soil Tissue	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	
						START DATE TIME	END DATE TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol					Other
1	T4-1L					3/18/20	1419		2	1	1						X	X			
2	T4-2L					3/18/20	1350		2	1	1						X	X			
3	T4-3L					3/18/20	1306		2	1	1						X	X			
4	T4-4L					3/18/20	1195		2	1	1						X	X			
5	T4-1HS					3/18/20	1730		2	1	1						X	X			
6	T4-2HS					3/18/20	1750		2	1	1						X	X			
7	T4-3HS					3/18/20	1812		2	1	1						X	X			
8	T4-4HS					3/18/20	1840		2	1	1						X	X			
9	T4-1HB					3/18/20	1735		2	1	1						X	X			
10	T4-2HB					3/18/20	1755		2	1	1						X	X			
11	T4-3HB					3/18/20	1917		2	1	1						X	X			
12	T4-4HB					3/18/20	1845		2	1	1						X	X			

Metals 6020 (Co, Li, As)
 Lab Filter Dissolved Metals by 6020 (As, Li, Co)
 Relinquished by: Veronica Fay / Resolute
 Date: 3/20/20
 Time: 1440
 Accepted by: Fed Ex
 Date: 3/20/20
 Time: 1440
 Temp in C: 8.5
 Received on Ice (Y/N): Y
 Custody Sealed Cooler (Y/N): NY
 Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE: Stephen Wilson, Trent Godwin, Veronica Fay
 PRINT Name of SAMPLER: Stephen Wilson, Trent Godwin, Veronica Fay
 SIGNATURE of SAMPLER: Veronica Fay
 DATE Signed: 3/18/20



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 2 of 2

Section A Required Client Information: Company: Resolute Environment Address: 1003 Weatherstone Parkway, Suite 320 Woodstock, Ga, 30188 Email: stephen.wilson@resoluteenv.com Phone: (404)358-8469 Fax Requested Due Date:	Section B Required Project Information: Report To: Stephen Wilson, Trent Godwin Copy To: Lauren Petty, Leslie Miller Project Name: Plant McManus SW Project #:
Section C Invoice Information: Attention: Kevin Hermin Company Name: Pace Analytical Address: Pace Analytical Pace Quote: Kevin Hermin@paceanalytical.com Pace Project Manager: Kevin Hermin@paceanalytical.com Pace Profile #: 2919	
Regulatory Agency State / Location GA	

ITEM #	SAMPLE ID <small>One Character per box. (A-Z, 0-9, /, -)</small> Sample IDs must be unique	MATRIX <small>Dinking Water Water Waste Water Product Soils/Sediment Oil Wires Cables Other Trash</small>	CODE <small>DW WW P SL CL WP AT TS</small>	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analyses Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
						START DATE TIME	END DATE TIME						
1	Pond 4L					3/18/20	11:14		2		X		
2	MCM-14 L					3/18/20	12:30		2		X		
3	Pond 4H					3/18/20	12:45		2		X		
4	MCM-14H					3/18/20	19:27		2		X		
5	DUP-1					3/18/20	—		2		X		
6													
7													
8													
9													
10													
11													
12													

ADDITIONAL COMMENTS Relinquished by / Affiliation Veronica Fay / Resolute	ACCEPTED BY / AFFILIATION Fed EX
Metals 6020 consist of As, Co, U, OMV Lab Filter Dissolved Metals by 6020 (As, U, Co)	DATE: 3/20/20 TIME: 1440

SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Stephen Wilson, Trent Godwin, Veronica Fay SIGNATURE of SAMPLER: <i>Stephen Wilson</i> , <i>Trent Godwin</i> , <i>Veronica Fay</i>	
DATE Signed: 3/18/20	TEMP in C:
Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)
Samples Intact (Y/N)	Residual Chlorine (Y/N)

Initial Laboratory Reports - Pace Analytical Services, Atlanta (Norcross), GA

February 04, 2020

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

RE: Project: Plant McManus SW
Pace Project No.: 2628570

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Faye, Resolute
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Lea Millet, Resolute Environmental & Water Resources
Lauren Petty, Southern Company Services, Inc.
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McManus SW

Pace Project No.: 2628570

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus SW

Pace Project No.: 2628570

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628570001	T2-1HT	Water	02/01/20 13:55	02/04/20 08:00
2628570002	T2-2HTS	Water	02/01/20 14:28	02/04/20 08:00
2628570003	T2-2HT	Water	02/01/20 14:32	02/04/20 08:00
2628570004	T2-3HTS	Water	02/01/20 14:46	02/04/20 08:00
2628570005	T2-3HT	Water	02/01/20 14:50	02/04/20 08:00
2628570006	T2-4HTS	Water	02/01/20 15:00	02/04/20 08:00
2628570007	T2-4HT	Water	02/01/20 15:14	02/04/20 08:00
2628570008	T2-4LT	Water	02/02/20 09:46	02/04/20 08:00
2628570009	T2-3LT	Water	02/02/20 11:20	02/04/20 08:00
2628570010	T2-2LT	Water	02/02/20 13:38	02/04/20 08:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus SW

Pace Project No.: 2628570

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2628570001	T2-1HT	EPA 6020B	CSW	1
2628570002	T2-2HTS	EPA 6020B	CSW	1
2628570003	T2-2HT	EPA 6020B	CSW	1
2628570004	T2-3HTS	EPA 6020B	CSW	1
2628570005	T2-3HT	EPA 6020B	CSW	1
2628570006	T2-4HTS	EPA 6020B	CSW	1
2628570007	T2-4HT	EPA 6020B	CSW	1
2628570008	T2-4LT	EPA 6020B	CSW	1
2628570009	T2-3LT	EPA 6020B	CSW	1
2628570010	T2-2LT	EPA 6020B	CSW	1

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW
Pace Project No.: 2628570

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628570001	T2-1HT					
EPA 6020B	Arsenic	0.0035J	mg/L	0.025	02/04/20 13:06	D3
2628570002	T2-2HTS					
EPA 6020B	Arsenic	0.0041J	mg/L	0.025	02/04/20 13:29	D3
2628570003	T2-2HT					
EPA 6020B	Arsenic	0.0044J	mg/L	0.025	02/04/20 13:34	D3
2628570004	T2-3HTS					
EPA 6020B	Arsenic	0.0039J	mg/L	0.025	02/04/20 13:40	D3
2628570005	T2-3HT					
EPA 6020B	Arsenic	0.0044J	mg/L	0.025	02/04/20 13:46	D3
2628570006	T2-4HTS					
EPA 6020B	Arsenic	0.0038J	mg/L	0.025	02/04/20 14:04	D3
2628570007	T2-4HT					
EPA 6020B	Arsenic	0.0041J	mg/L	0.025	02/04/20 14:10	D3
2628570008	T2-4LT					
EPA 6020B	Arsenic	0.0051J	mg/L	0.025	02/04/20 14:16	D3
2628570009	T2-3LT					
EPA 6020B	Arsenic	0.0038J	mg/L	0.025	02/04/20 14:21	D3
2628570010	T2-2LT					
EPA 6020B	Arsenic	0.0039J	mg/L	0.025	02/04/20 14:27	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628570

Sample: T2-1HT		Lab ID: 2628570001		Collected: 02/01/20 13:55	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.0035J	mg/L	0.025	0.0018	5	02/04/20 09:25	02/04/20 13:06	7440-38-2	D3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628570

Sample: T2-2HTS		Lab ID: 2628570002		Collected: 02/01/20 14:28	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.0041J	mg/L	0.025	0.0018	5	02/04/20 09:25	02/04/20 13:29	7440-38-2	D3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628570

Sample: T2-2HT		Lab ID: 2628570003		Collected: 02/01/20 14:32	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.0044J	mg/L	0.025	0.0018	5	02/04/20 09:25	02/04/20 13:34	7440-38-2	D3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628570

Sample: T2-3HTS		Lab ID: 2628570004		Collected: 02/01/20 14:46	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.0039J	mg/L	0.025	0.0018	5	02/04/20 09:25	02/04/20 13:40	7440-38-2	D3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW
Pace Project No.: 2628570

Sample: T2-3HT		Lab ID: 2628570005		Collected: 02/01/20 14:50	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.0044J	mg/L	0.025	0.0018	5	02/04/20 09:25	02/04/20 13:46	7440-38-2	D3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628570

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: T2-4HTS									
Lab ID: 2628570006									
Collected: 02/01/20 15:00 Received: 02/04/20 08:00 Matrix: Water									
6020B MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Arsenic	0.0038J	mg/L	0.025	0.0018	5	02/04/20 09:25	02/04/20 14:04	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628570

Sample: T2-4HT		Lab ID: 2628570007		Collected: 02/01/20 15:14		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0041J	mg/L	0.025	0.0018	5	02/04/20 09:25	02/04/20 14:10	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628570

Sample: T2-4LT		Lab ID: 2628570008		Collected: 02/02/20 09:46	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.0051J	mg/L	0.025	0.0018	5	02/04/20 09:25	02/04/20 14:16	7440-38-2	D3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW
Pace Project No.: 2628570

Sample: T2-3LT		Lab ID: 2628570009		Collected: 02/02/20 11:20	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.0038J	mg/L	0.025	0.0018	5	02/04/20 09:25	02/04/20 14:21	7440-38-2	D3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628570

Sample: T2-2LT		Lab ID: 2628570010		Collected: 02/02/20 13:38		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0039J	mg/L	0.025	0.0018	5	02/04/20 09:25	02/04/20 14:27	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW
Pace Project No.: 2628570

QC Batch: 42781 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2628570001, 2628570002, 2628570003, 2628570004, 2628570005, 2628570006, 2628570007, 2628570008, 2628570009, 2628570010

METHOD BLANK: 195438 Matrix: Water
Associated Lab Samples: 2628570001, 2628570002, 2628570003, 2628570004, 2628570005, 2628570006, 2628570007, 2628570008, 2628570009, 2628570010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	02/04/20 12:11	

LABORATORY CONTROL SAMPLE: 195439

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.093	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 195440 195441

Parameter	Units	2628570001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.0035J	0.1	0.1	0.098	0.097	94	93	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McManus SW

Pace Project No.: 2628570

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

REPORT OF LABORATORY ANALYSIS

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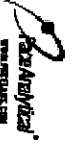
QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus SW
Pace Project No.: 2628570

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628570001	T2-1HT	EPA 3005A	42781	EPA 6020B	42798
2628570002	T2-2HTS	EPA 3005A	42781	EPA 6020B	42798
2628570003	T2-2HT	EPA 3005A	42781	EPA 6020B	42798
2628570004	T2-3HTS	EPA 3005A	42781	EPA 6020B	42798
2628570005	T2-3HT	EPA 3005A	42781	EPA 6020B	42798
2628570006	T2-4HTS	EPA 3005A	42781	EPA 6020B	42798
2628570007	T2-4HT	EPA 3005A	42781	EPA 6020B	42798
2628570008	T2-4LT	EPA 3005A	42781	EPA 6020B	42798
2628570009	T2-3LT	EPA 3005A	42781	EPA 6020B	42798
2628570010	T2-2LT	EPA 3005A	42781	EPA 6020B	42798

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

2628570

Section A

Required Client Information:
Company: Georgia Power
Address: 1003 Weatherstone Parkway
City: Atlanta, GA 30188

Section B

Required Project Information:
Report To: Mktg. Lab
Copy To:
Purchase Order #:
Project Name: Plant Mckinnis SW

Section C

Invoice Information:
Address:
Company Name:
Personnel:
Personnel Manager:
Personnel Profile #: 2919

Main data table with columns: ITEM #, MATRIX CODE, SAMPLE TYPE, DATE, TIME, COLLECTED, END, PRESERVATIVES, METALS BY 6020, DISOLVED METALS BY 6020, Residual Chlorine (Y/N), TEMP in C, Received on Ice (Y/N), Custody Sealed Cooler (Y/N), Samples Intact (Y/N).

PRINT Name of SAMPLER:
Signature of SAMPLER:
DATE Signed: 7/2/20

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



CHAIN-OF-CUSTODY / Analytical Request Document

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Section A

Required Client Information:

Company: Georgia Power
 Address: 1005 Westrestoration Parkway
 Suite 320, Woodstock, GA 30188
 Email: lean.rharrington@ge.com
 Phone: (251) 776-2760
 Requested Due Date:

Section B

Required Project Information:

Report To: Ming Lee
 Copy To:
 Purchase Order #:
 Project Name: Piedmont SV
 Project #:

Section C

Invoice Information:

Attention:
 Company Name:
 Address:
 POC Name:
 POC Project Manager: lean.rharrington@ge.com
 POC Profile #:

ITEM #	SAMPLE ID One Character per box (A-Z, 0-9 /, -) Sample IDs must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES								Metals by 6020	Dissolved Metals by 6020	Residual Chlorine (Y/N)
				START DATE	END DATE			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other			
1	1A-31WT	G	GRAB	1/28/20			1									1		
2	1A-32WT	G	GRAB	1/28/20			1									1		
3	1A-33WT	G	GRAB	1/28/20			1									1		
4	1A-34WT	G	GRAB	1/28/20			1									1		
5	1A-35WT	G	GRAB	1/28/20			1									1		
6	1A-36WT	G	GRAB	1/28/20			1									1		
7	1A-37WT	G	GRAB	1/28/20			1									1		
8	1A-38WT	G	GRAB	1/28/20			1									1		
9	1A-39WT	G	GRAB	1/28/20			1									1		
10	1A-40WT	G	GRAB	1/28/20			1									1		
11	1A-41WT	G	GRAB	1/28/20			1									1		
12	1A-42WT	G	GRAB	1/28/20			1									1		
13	1A-43WT	G	GRAB	1/28/20			1									1		
14	1A-44WT	G	GRAB	1/28/20			1									1		
15	1A-45WT	G	GRAB	1/28/20			1									1		
16	1A-46WT	G	GRAB	1/28/20			1									1		
17	1A-47WT	G	GRAB	1/28/20			1									1		
18	1A-48WT	G	GRAB	1/28/20			1									1		
19	1A-49WT	G	GRAB	1/28/20			1									1		
20	1A-50WT	G	GRAB	1/28/20			1									1		

AC ONLY

VOID SIGNATURE PLACES

DATE SIGNED: 2/2/20

TEMP in C

Received on Ice (Y/N)

Cooler Sealed (Y/N)

Samples Intact (Y/N)



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Requested Client Information:		Section B Requested Project Information:		Section C Invoice Information:	
Company: Georgia Power	Address: 1000 Westchase Parkway	Report To: Millie Lee	Client: Millie Lee	Address: Peach Dunwoody	Company Name: Peach Dunwoody
Address: 3001 Woodstock, GA 30188	City: Atlanta	Project Name: Plant Matthews SW	Project #:	Address: Peach Dunwoody	Company Name: Peach Dunwoody
Email: beam@ge.com	Phone: (770) 276-2780	Purchase Order #:	Project #:	Address: Peach Dunwoody	Company Name: Peach Dunwoody
Requested Date: 12/17/13	Requested Date:	Project #:	Project #:	Address: Peach Dunwoody	Company Name: Peach Dunwoody

ITEM #	SAMPLE ID	MATRIX	CONC	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS							Residual Chlorine (Y/N)			
				START DATE	END DATE		Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol		Other		
12-011T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-012T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-013T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-014T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-015T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-016T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-017T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-018T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-019T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-020T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-021T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-022T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-023T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-024T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-025T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-026T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-027T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-028T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-029T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-030T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-031T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-032T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-033T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-034T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-035T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-036T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-037T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-038T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-039T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-040T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-041T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-042T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-043T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-044T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-045T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-046T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-047T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-048T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-049T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									
12-050T	MON-OILT ADIPOL	Water	DW	12/17/13			1	1									

As Oils
 Vans Stoughton Zipped with SALEX

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

Print Name of Sample: _____
 Signature: _____
 Date Signed: 2/19/15



CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 4

Section A

Requested Client Information:
Company: Georgia Power
Address: 1003 Weatherstone Parkway
Suite 320, Woodstock, GA 30188
Phone: [251]718-2760 Fax:
Email: heath@georgiapower.com
Requested Due Date:

Section B

Requested Project Information:
Report To: Miley, Leo
Copy To:
Purchase Order #: Part Mechanics SVW
Project Name: Part Mechanics SVW
Project #:

Section C

Invoice Information:
Address:
Company Name:
Address:
Pace Order:
Pace Project Manager: Kevinberry@paceanalytical.com
Pace Profile #: 2919

ITEM #	SAMPLE ID	Matrix Code	Sample Type	COLLECTED		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives						Metals by 6020		Residual Chlorine (Y/N)
				START DATE	END DATE				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	

13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											
13-215	13-215	13-215	G Grab	13/21/15				1											

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

As only
Vendor Signature: [Signature]
DATE: [Date]

PRINT Name of ANALYST
[Signature]
[Signature]
DATE: [Date]

February 18, 2020

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

RE: Project: Plant McManus SW
Pace Project No.: 2628593

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Faye, Resolute
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Lea Millet, Resolute Environmental & Water Resources
Lauren Petty, Southern Company Services, Inc.
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McManus SW

Pace Project No.: 2628593

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus SW
Pace Project No.: 2628593

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628593001	MCM-04LT	Water	02/03/20 11:35	02/04/20 10:48
2628593002	MCM-08LT	Water	02/03/20 12:41	02/04/20 10:48

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus SW

Pace Project No.: 2628593

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2628593001	MCM-04LT	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628593002	MCM-08LT	EPA 6020B	CSW	3
		EPA 6020B	CSW	3

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW

Pace Project No.: 2628593

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628593001	MCM-04LT					
EPA 6020B	Arsenic	0.0063J	mg/L	0.050	02/17/20 15:10	D3
2628593002	MCM-08LT					
EPA 6020B	Arsenic	0.019J	mg/L	0.050	02/17/20 15:16	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628593

Sample: MCM-04LT		Lab ID: 2628593001		Collected: 02/03/20 11:35		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0063J	mg/L	0.050	0.0035	10	02/17/20 11:15	02/17/20 15:10	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/17/20 11:15	02/17/20 15:10	7440-48-4	D3
Lithium	ND	mg/L	0.30	0.0078	10	02/17/20 11:15	02/17/20 15:10	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	mg/L	0.050	0.0035	10	02/17/20 11:15	02/17/20 17:25	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/17/20 11:15	02/17/20 17:25	7440-48-4	D3
Lithium, Dissolved	ND	mg/L	0.30	0.0078	10	02/17/20 11:15	02/17/20 17:25	7439-93-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628593

Sample: MCM-08LT		Lab ID: 2628593002		Collected: 02/03/20 12:41		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.019J	mg/L	0.050	0.0035	10	02/17/20 11:15	02/17/20 15:16	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/17/20 11:15	02/17/20 15:16	7440-48-4	D3
Lithium	ND	mg/L	0.30	0.0078	10	02/17/20 11:15	02/17/20 15:16	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	mg/L	0.050	0.0035	10	02/17/20 11:15	02/17/20 17:48	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/17/20 11:15	02/17/20 17:48	7440-48-4	D3
Lithium, Dissolved	ND	mg/L	0.30	0.0078	10	02/17/20 11:15	02/17/20 17:48	7439-93-2	D3

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW

Pace Project No.: 2628593

QC Batch: 43407 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2628593001, 2628593002

METHOD BLANK: 198741 Matrix: Water

Associated Lab Samples: 2628593001, 2628593002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	02/17/20 14:58	
Cobalt	mg/L	ND	0.0050	0.00030	02/17/20 14:58	
Lithium	mg/L	ND	0.030	0.00078	02/17/20 14:58	

LABORATORY CONTROL SAMPLE: 198742

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.097	97	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 198743 198744

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2629097001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Arsenic	mg/L	ND	0.1	0.1	0.097	0.099	97	99	75-125	2	20		
Cobalt	mg/L	0.017	0.1	0.1	0.11	0.11	95	95	75-125	0	20		
Lithium	mg/L	0.019J	0.1	0.1	0.12	0.11	97	94	75-125	2	20		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW

Pace Project No.: 2628593

QC Batch: 43413 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 2628593001, 2628593002

METHOD BLANK: 198753 Matrix: Water

Associated Lab Samples: 2628593001, 2628593002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	0.00035	02/17/20 17:14	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00030	02/17/20 17:14	
Lithium, Dissolved	mg/L	ND	0.030	0.00078	02/17/20 17:14	

LABORATORY CONTROL SAMPLE: 198754

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.1	0.095	95	80-120	
Cobalt, Dissolved	mg/L	0.1	0.098	98	80-120	
Lithium, Dissolved	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 198755 198756

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2628593001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Arsenic, Dissolved	mg/L	ND	0.1	0.1	0.098	0.095	98	95	75-125	3	20		
Cobalt, Dissolved	mg/L	ND	0.1	0.1	0.098	0.094	95	91	75-125	4	20		
Lithium, Dissolved	mg/L	ND	0.1	0.1	0.095J	0.095J	94	93	75-125		20		

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McManus SW

Pace Project No.: 2628593

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus SW

Pace Project No.: 2628593

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628593001	MCM-04LT	EPA 3005A	43407	EPA 6020B	43433
2628593002	MCM-08LT	EPA 3005A	43407	EPA 6020B	43433
2628593001	MCM-04LT	EPA 3005A	43413	EPA 6020B	43435
2628593002	MCM-08LT	EPA 3005A	43413	EPA 6020B	43435

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Company: Georgia Power Address: 1003 Weatherstone Parkway Suite 320, Woodstock, GA 30188 Email: lea.miller@ge.com Phone: (251) 776-2760 Requested Due Date:	Section B Required Project Information: Report To: Millie Lea Copy To: Wilson, Stephen Purchase Order #: Project Name: Plant McManus SW Project #:	Section C Invoice Information: Attention: Company Name: Address: Pace Quote: Pace Project Manager: kevin.herring@peacelabs.com Pace Profile #: 2819 Regulatory Agency: State/Location: GA
---	--	--

ITEM #	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P BL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB Q-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	Analyte Test Metals by 6020 Dissolved Metals by 6020 <i>Trace Metals</i>	DATE	TIME	ADJUSTED BY / ANALYST	DATE	TIME	SAMPLING CONDITIONS	Received on	Is (Y/N)	Custody	Sealed	Cooler	Samples Intact (Y/N)				
					START	END																				
1			SW (G-GRAB)	Q	START	END		Unpreserved		Metals by 6020			Johnston	2/3/20	16:54	Y		Y	Y						Y	
2			SW (G-GRAB)	Q	START	END		Unpreserved		Metals by 6020			Johnston	2/4/20	10:48	Y		Y	Y						Y	
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS:

McManus Only!

Requester Signature: [Signature] DATE SIGNED: 2/3/20

Sampler Name of SAMPLER: [Signature] DATE SIGNED: 2/3/20

SAMPLER, MAKE/TYPE AND SERIAL NO:

SIGNATURE OF SAMPLER: [Signature] DATE SIGNED: 2/3/20

WO#: 2628593

Page 12 of 12



Sample Condition Upon Receipt

WO#: 2628593

Client Name: G-A Power

PM: KH Due Date: 02/07/20
CLIENT: 26-GA Power

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

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

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 230 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 3.7 C Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6 C

Data and initials of person examining contents: 2/14/2006

Table with 16 rows of checklist items including Chain of Custody Present, Samples Arrived within Hold Time, Short Hold Time Analysis, etc.

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

Project Manager Review: Date:

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

February 14, 2020

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

RE: Project: Plant McManus SW
Pace Project No.: 2628594

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Faye, Resolute
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Lea Millet, Resolute Environmental & Water Resources
Lauren Petty, Southern Company Services, Inc.
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McManus SW
Pace Project No.: 2628594

Pace Analytical Services Atlanta

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus SW

Pace Project No.: 2628594

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628594001	BG-1LT	Water	02/02/20 08:58	02/04/20 10:48
2628594002	BG-2HT	Water	02/02/20 15:04	02/04/20 10:48

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus SW
Pace Project No.: 2628594

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2628594001	BG-1LT	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628594002	BG-2HT	EPA 6020B	CSW	3
		EPA 6020B	CSW	3

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW

Pace Project No.: 2628594

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628594001	BG-1LT					
EPA 6020B	Lithium	0.090J	mg/L	0.30	02/11/20 21:14	
EPA 6020B	Arsenic, Dissolved	0.0057J	mg/L	0.050	02/12/20 21:23	D3
EPA 6020B	Lithium, Dissolved	0.094J	mg/L	0.30	02/12/20 21:23	
2628594002	BG-2HT					
EPA 6020B	Arsenic	0.0055J	mg/L	0.050	02/11/20 21:37	D3
EPA 6020B	Lithium	0.098J	mg/L	0.30	02/11/20 21:37	
EPA 6020B	Arsenic, Dissolved	0.0038J	mg/L	0.050	02/12/20 21:46	D3
EPA 6020B	Lithium, Dissolved	0.096J	mg/L	0.30	02/12/20 21:46	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628594

Sample: BG-1LT		Lab ID: 2628594001		Collected: 02/02/20 08:58		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.050	0.0035	10	02/11/20 12:50	02/11/20 21:14	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/11/20 12:50	02/11/20 21:14	7440-48-4	
Lithium	0.090J	mg/L	0.30	0.0078	10	02/11/20 12:50	02/11/20 21:14	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0057J	mg/L	0.050	0.0035	10	02/12/20 13:27	02/12/20 21:23	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/12/20 13:27	02/12/20 21:23	7440-48-4	
Lithium, Dissolved	0.094J	mg/L	0.30	0.0078	10	02/12/20 13:27	02/12/20 21:23	7439-93-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628594

Sample: BG-2HT		Lab ID: 2628594002		Collected: 02/02/20 15:04		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0055J	mg/L	0.050	0.0035	10	02/11/20 12:50	02/11/20 21:37	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/11/20 12:50	02/11/20 21:37	7440-48-4	
Lithium	0.098J	mg/L	0.30	0.0078	10	02/11/20 12:50	02/11/20 21:37	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0038J	mg/L	0.050	0.0035	10	02/12/20 13:27	02/12/20 21:46	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/12/20 13:27	02/12/20 21:46	7440-48-4	
Lithium, Dissolved	0.096J	mg/L	0.30	0.0078	10	02/12/20 13:27	02/12/20 21:46	7439-93-2	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW

Pace Project No.: 2628594

QC Batch: 43168 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2628594001, 2628594002

METHOD BLANK: 197286 Matrix: Water

Associated Lab Samples: 2628594001, 2628594002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	02/11/20 21:02	

LABORATORY CONTROL SAMPLE: 197287

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 197288 197289

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2628594001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Arsenic	mg/L	0.0057J	0.1	0.1	0.11	0.11	105	103	75-125	2	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW

Pace Project No.: 2628594

QC Batch: 43232 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 2628594001, 2628594002

METHOD BLANK: 197813 Matrix: Water

Associated Lab Samples: 2628594001, 2628594002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	0.00035	02/12/20 21:11	

LABORATORY CONTROL SAMPLE: 197814

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 197815 197816

Parameter	Units	197815		197816		% Rec Limits	RPD	Max RPD	Qual		
		2628594001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result					MSD Result	
Arsenic, Dissolved	mg/L	0.0057J	0.1	0.1	0.12	0.11	110	102	75-125	7	20

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McManus SW

Pace Project No.: 2628594

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus SW

Pace Project No.: 2628594

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628594001	BG-1LT	EPA 3005A	43168	EPA 6020B	43189
2628594002	BG-2HT	EPA 3005A	43168	EPA 6020B	43189
2628594001	BG-1LT	EPA 3005A	43232	EPA 6020B	43245
2628594002	BG-2HT	EPA 3005A	43232	EPA 6020B	43245

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

MO#: 2628594

Due Date: 02/07/20
 PM: KH
 CLIENT: 26-GR Power

Face Analytical

Client Name: G Power

Courier: Fed Ex UPS USPS Client Commercial Other

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no

Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Type of Ice: Wet Blue None

Samples on ice, cooling process has begun

Thermometer Used Yes No

230
37.5

Cooler Temperature _____

Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: 2/4/20 KH

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Face Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Filtered volume received for Dissolved tests:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
-Includes date/time/D/Analysis Matrix:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
All containers needing preservation have been checked:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	15.
All containers needing preservation are found to be in compliance with EPA recommendation:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	16.
exceptions: VOA, cotton, TOC, O&G, W-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	17.
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	18.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	19.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	20.
Trip Blank Custody Seals Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	21.
Face Trip Blank Lot # (if purchased):		22.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted:

Date/Time:

Comments/ Resolution:

Project Manager Review:

Date:

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



CHAIN-OF-CUSTODY / Analytical Request C

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

W0#: 2628595

PM: KH Due Date: 02/06/20
 CLIENT: 26-GA Power

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power	Report To: Millet, Lee	Address: 1003 Weatherstone Parkway Suite 320, Woodstock, GA 30188		Company Name:	Address:
Email: lee.millet@ge.com	Phone: (251) 776-2760	Copy To:	Project Name: Plant McManus SW	Pace Quote:	Pace Project Manager: kevin.herring@pace-labs.com
Requested Due Date:	Fax:	Project #:	Purchase Order #:	Pace Profile #:	2919

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES							Analytical Test	Metals by 6020	Disolved Metals by 6020	Residual Chlorine (Y/N)	TEMP in C	Received on	Ice (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)													
			START DATE	END DATE				H2SO4	HNO3	HCl	NaOH	Na2S2O3	Method	Other																							
1	MEM-07-LT	DW	2/1/20 0840		G		1																														
2	TA-11L	WT	2/1/20 0840		G		1																														
3	TA-4LT	WP	2/1/20 0840		G		1																														
4	TA-3LS	SL	2/1/20 0840		G		1																														
5	MEM-07-LT	DW	2/1/20 1045		G		1																														
6	TA-7LT	WT	2/1/20 1046		G		1																														
7	TA-4HTS	SL	2/1/20 1334		G		1																														
8	TA-4HT	WP	2/1/20 1340		G		1																														
9	TA-2HTS	SL	2/1/20 1352		G		1																														
10	TA-1HT	WP	2/1/20 1355		G		1																														
11	MEM-06-HT	DW	2/1/20 1355		G		1																														
12	MEM-06-HT	DW	2/1/20 1355		G		1																														

Accepted by Applicant: [Signature] DATE: 2/1/20 TIME: 1046

Accepted by Application: [Signature] DATE: 2/1/20 TIME: 1400

Equipment Name and Signature: [Signature] DATE SIGNED: 2/1/20

Print Name of Sampler: [Signature] DATE SIGNED: 2/1/20

Signature of Sampler: [Signature] DATE SIGNED: 2/1/20

Additional Comments: Ag Only



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

WO# : 2628595

PM: KH Due Date: 02/06/20
CLIENT: 26-GA Power

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power	Report To: Millie Lee	Report To: Millie Lee	Copy To: <i>Wilson, Stephen</i>	Company Name:	Address:
Address: 1003 Weatherstone Parkway Suite 320, Woodstock, GA 30188	Phone: (251)776-2760	Project Name: Plant McMarus SW	Project #: 2919	Pace Quote:	Pace Project Manager: kevin.herring@pacealab.com
Email: lee.milling@georgiapower.com	Fax:	Purchase Order #:			
Requested Due Date:					

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES							Metals by 6020	Disolved Metals by 6020	Residual Chlorine (Y/N)
			START DATE	END DATE				H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other			
1	Drinking Water	DW	2/3/20 14:28		G		1										
2	Water	WT	2/3/20 14:28		G		1										
3	Waste Water	WW	2/3/20 14:28		G		1										
4	Product	P	2/3/20 14:46		G		1										
5	Boil/Bold	SL	2/3/20 14:46		G		1										
6	Oil	OL	2/3/20 14:46		G		1										
7	Wipe	WP	2/3/20 14:46		G		1										
8	Air	AR	2/3/20 14:46		G		1										
9	Other	OT	2/3/20 14:46		G		1										
10	Tissue	TS	2/3/20 14:46		G		1										

DATE		TIME		DATE		TIME	
2/3/20	16:54	2/3/20	16:54	2/3/20	16:54	2/3/20	16:54
3/14/20	10:48	3/14/20	10:48	3/14/20	10:48	3/14/20	10:48
3/14/20	18:16	3/14/20	18:16	3/14/20	18:16	3/14/20	18:16

Conli Only

PRINT NAME OF SAMPLER: *Stephen Wilson* DATE SIGNED: *2/3/20*

SIGNATURE OF SAMPLER: *[Signature]*

TEMP in C: *90*

Received on: *2/3/20*

Sealed: *Y*

Cooler: *Y*

Intact (Y/N): *Y*



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power	Report To: Millet, Lea	Attention:		Company Name:	
Address: 1003 Weatherstone Parkway	Copy To:	Address:		Address:	
Suite 320, Woodstock, GA 30188		Purchase Order #:		State / Location:	
Email: lea.millet@essolution.com		Project Name: Plant McManus SW		GA	
Phone: (251)776-2760	Fac:	Project #:		Regulatory Agency:	
Requested Due Date:		Matrix Code (see valid codes to left)		Requested Analysis Filled (Y/N)	
		Sample Type (G-GRAB C-COMP)		Temp in C	

ITEM #	MATRIX	CODE	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on	Ice (Y/N)	Custody Sealed (Y/N)	Samples Intact (Y/N)
			START	END												
1	MCM-07-LT	WW	2/1/20	0840	2/1/20	0840										
2	TI-1-LT	WW	2/1/20	0850	2/1/20	0850										
3	TI-4-LT	WW	2/1/20	0856	2/1/20	0856										
4	TI-3-LT	WW	2/1/20	1006	2/1/20	1006										
5	MCM-07-LT	WW	2/1/20	1015	2/1/20	1015										
6	TI-2-LT	WW	2/1/20	1016	2/1/20	1016										
7	TI-4-LT	WW	2/1/20	1334	2/1/20	1334										
8	TI-4-LT	WW	2/1/20	1340	2/1/20	1340										
9	TI-4-LT	WW	2/1/20	1352	2/1/20	1352										
10	TI-3-LT	WW	2/1/20	1355	2/1/20	1355										
11	TI-4-LT	WW	2/1/20	1355	2/1/20	1355										
12	MCM-06-LT	WW	2/1/20	1355	2/1/20	1355										

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS	
Call Outing		Kasid Stephens		2/1/20		1046		K. Wellington / Pace		2/1/20		0810		1.4 Y Y Y	
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Kasid Stephens SIGNATURE of SAMPLER: <i>[Signature]</i> DATE Signed: 2/1/20															



Client Name: Georgia Power

WO#: 2628595

Courier: Fed Ex UPS USPS Client Commercial Pace Other

PM: KH Due Date: 02/06/20
CLIENT: 26-GR Power

Tracking #: 3901 2400 8795

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

Packing Material: Bubble Wrap Bubble Bags None Other ziplock bags

Thermometer Used THR230 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 1.4

Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: KW 2/4/20

Temp should be above freezing to 6°C

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

February 14, 2020

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

RE: Project: Plant McManus SW
Pace Project No.: 2628595

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Faye, Resolute
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Lea Millet, Resolute Environmental & Water Resources
Lauren Petty, Southern Company Services, Inc.
Kevin Stephenson, Resolute Environmental & Water Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McManus SW

Pace Project No.: 2628595

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus SW

Pace Project No.: 2628595

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628595001	T2-1HT	Water	02/01/20 13:55	02/04/20 10:48
2628595002	T2-2HTS	Water	02/01/20 14:28	02/04/20 10:48
2628595003	T2-2HT	Water	02/01/20 14:32	02/04/20 10:48
2628595004	T2-3HTS	Water	02/01/20 14:46	02/04/20 10:48
2628595005	T2-3HT	Water	02/01/20 14:50	02/04/20 10:48
2628595006	T2-4HTS	Water	02/01/20 15:00	02/04/20 10:48
2628595007	T2-4HT	Water	02/01/20 15:14	02/04/20 10:48
2628595008	T2-4LT	Water	02/02/20 09:46	02/04/20 10:48
2628595009	T2-3LT	Water	02/02/20 11:20	02/04/20 10:48
2628595010	T2-2LT	Water	02/02/20 11:38	02/04/20 10:48
2628595011	T1-1LT	Water	02/01/20 09:50	02/04/20 10:48
2628595012	T1-4LT	Water	02/01/20 09:56	02/04/20 10:48
2628595013	T1-3LT	Water	02/01/20 10:06	02/04/20 10:48
2628595014	T1-2LT	Water	02/01/20 10:16	02/04/20 10:48
2628595015	T1-4HTS	Water	02/01/20 13:34	02/04/20 10:48
2628595016	T1-4HT	Water	02/01/20 13:40	02/04/20 10:48
2628595017	T1-3HTS	Water	02/01/20 13:52	02/04/20 10:48
2628595018	T1-3HT	Water	02/01/20 13:56	02/04/20 10:48
2628595019	T1-1HT	Water	02/01/20 14:08	02/04/20 10:48
2628595020	T1-2HTS	Water	02/01/20 14:16	02/04/20 10:48
2628595021	T1-2HT	Water	02/01/20 14:20	02/04/20 10:48

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus SW

Pace Project No.: 2628595

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2628595001	T2-1HT	EPA 6020B	CSW	1
2628595002	T2-2HTS	EPA 6020B	CSW	1
2628595003	T2-2HT	EPA 6020B	CSW	1
2628595004	T2-3HTS	EPA 6020B	CSW	1
2628595005	T2-3HT	EPA 6020B	CSW	1
2628595006	T2-4HTS	EPA 6020B	CSW	1
2628595007	T2-4HT	EPA 6020B	CSW	1
2628595008	T2-4LT	EPA 6020B	CSW	1
2628595009	T2-3LT	EPA 6020B	CSW	1
2628595010	T2-2LT	EPA 6020B	CSW	1
2628595011	T1-1LT	EPA 6020B	CSW	1
2628595012	T1-4LT	EPA 6020B	CSW	1
2628595013	T1-3LT	EPA 6020B	CSW	1
2628595014	T1-2LT	EPA 6020B	CSW	1
2628595015	T1-4HTS	EPA 6020B	CSW	1
2628595016	T1-4HT	EPA 6020B	CSW	1
2628595017	T1-3HTS	EPA 6020B	CSW	1
2628595018	T1-3HT	EPA 6020B	CSW	1
2628595019	T1-1HT	EPA 6020B	CSW	1
2628595020	T1-2HTS	EPA 6020B	CSW	1
2628595021	T1-2HT	EPA 6020B	CSW	1

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW

Pace Project No.: 2628595

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628595001	T2-1HT					
EPA 6020B	Arsenic, Dissolved	0.012J	mg/L	0.050	02/13/20 14:15	D3
2628595002	T2-2HTS					
EPA 6020B	Arsenic, Dissolved	0.018J	mg/L	0.050	02/13/20 14:20	D3
2628595003	T2-2HT					
EPA 6020B	Arsenic, Dissolved	0.023J	mg/L	0.050	02/13/20 14:26	D3,M6
2628595004	T2-3HTS					
EPA 6020B	Arsenic, Dissolved	0.036J	mg/L	0.050	02/13/20 14:49	D3
2628595005	T2-3HT					
EPA 6020B	Arsenic, Dissolved	0.043J	mg/L	0.050	02/13/20 14:55	D3
2628595006	T2-4HTS					
EPA 6020B	Arsenic, Dissolved	0.037J	mg/L	0.050	02/13/20 15:35	D3
2628595007	T2-4HT					
EPA 6020B	Arsenic, Dissolved	0.040J	mg/L	0.050	02/13/20 15:43	D3
2628595008	T2-4LT					
EPA 6020B	Arsenic, Dissolved	0.044J	mg/L	0.050	02/13/20 15:49	D3
2628595009	T2-3LT					
EPA 6020B	Arsenic, Dissolved	0.043J	mg/L	0.050	02/13/20 15:54	D3
2628595010	T2-2LT					
EPA 6020B	Arsenic, Dissolved	0.040J	mg/L	0.050	02/13/20 16:29	D3
2628595011	T1-1LT					
EPA 6020B	Arsenic, Dissolved	0.039J	mg/L	0.050	02/13/20 16:35	D3
2628595012	T1-4LT					
EPA 6020B	Arsenic, Dissolved	0.046J	mg/L	0.050	02/13/20 16:41	D3
2628595013	T1-3LT					
EPA 6020B	Arsenic, Dissolved	0.043J	mg/L	0.050	02/13/20 16:47	D3
2628595014	T1-2LT					
EPA 6020B	Arsenic, Dissolved	0.041J	mg/L	0.050	02/13/20 16:52	D3
2628595015	T1-4HTS					
EPA 6020B	Arsenic, Dissolved	0.048J	mg/L	0.050	02/13/20 16:58	D3
2628595016	T1-4HT					
EPA 6020B	Arsenic, Dissolved	0.0065J	mg/L	0.050	02/13/20 19:04	D3
2628595017	T1-3HTS					
EPA 6020B	Arsenic, Dissolved	0.0086J	mg/L	0.050	02/13/20 19:10	D3
2628595018	T1-3HT					
EPA 6020B	Arsenic, Dissolved	0.0079J	mg/L	0.050	02/13/20 19:16	D3

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW

Pace Project No.: 2628595

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628595019	T1-1HT					
EPA 6020B	Arsenic, Dissolved	0.0082J	mg/L	0.050	02/13/20 19:21	D3
2628595020	T1-2HTS					
EPA 6020B	Arsenic, Dissolved	0.0077J	mg/L	0.050	02/13/20 19:27	D3
2628595021	T1-2HT					
EPA 6020B	Arsenic, Dissolved	0.0062J	mg/L	0.050	02/12/20 18:20	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T2-1HT		Lab ID: 2628595001		Collected: 02/01/20 13:55		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.012J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 14:15	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T2-2HTS		Lab ID: 2628595002		Collected: 02/01/20 14:28	Received: 02/04/20 10:48	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.018J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 14:20	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW
 Pace Project No.: 2628595

Sample: T2-2HT		Lab ID: 2628595003		Collected: 02/01/20 14:32		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.023J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 14:26	7440-38-2	D3,M6

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ANALYTICAL RESULTS

Project: Plant McManus SW
 Pace Project No.: 2628595

Sample: T2-3HTS		Lab ID: 2628595004		Collected: 02/01/20 14:46	Received: 02/04/20 10:48	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	0.036J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 14:49	7440-38-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T2-3HT		Lab ID: 2628595005		Collected: 02/01/20 14:50	Received: 02/04/20 10:48	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	0.043J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 14:55	7440-38-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T2-4HTS		Lab ID: 2628595006		Collected: 02/01/20 15:00		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.037J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 15:35	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T2-4HT		Lab ID: 2628595007		Collected: 02/01/20 15:14	Received: 02/04/20 10:48	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.040J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 15:43	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T2-4LT		Lab ID: 2628595008		Collected: 02/02/20 09:46	Received: 02/04/20 10:48	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.044J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 15:49	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T2-3LT		Lab ID: 2628595009		Collected: 02/02/20 11:20	Received: 02/04/20 10:48	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	0.043J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 15:54	7440-38-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T2-2LT		Lab ID: 2628595010		Collected: 02/02/20 11:38		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.040J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 16:29	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T1-1LT		Lab ID: 2628595011		Collected: 02/01/20 09:50	Received: 02/04/20 10:48	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.039J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 16:35	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T1-4LT		Lab ID: 2628595012		Collected: 02/01/20 09:56	Received: 02/04/20 10:48	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	0.046J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 16:41	7440-38-2	D3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T1-3LT		Lab ID: 2628595013		Collected: 02/01/20 10:06		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Arsenic, Dissolved	0.043J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 16:47	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T1-2LT		Lab ID: 2628595014		Collected: 02/01/20 10:16	Received: 02/04/20 10:48	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	0.041J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 16:52	7440-38-2	D3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T1-4HTS	Lab ID: 2628595015	Collected: 02/01/20 13:34	Received: 02/04/20 10:48	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<hr/>									
6020B MET ICPMS, Lab Filtered	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	0.048J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 16:58	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW
Pace Project No.: 2628595

Sample: T1-4HT		Lab ID: 2628595016		Collected: 02/01/20 13:40	Received: 02/04/20 10:48	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0065J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 19:04	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T1-3HTS		Lab ID: 2628595017		Collected: 02/01/20 13:52	Received: 02/04/20 10:48	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	0.0086J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 19:10	7440-38-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T1-3HT		Lab ID: 2628595018		Collected: 02/01/20 13:56	Received: 02/04/20 10:48	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	0.0079J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 19:16	7440-38-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T1-1HT		Lab ID: 2628595019		Collected: 02/01/20 14:08	Received: 02/04/20 10:48	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0082J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 19:21	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628595

Sample: T1-2HTS		Lab ID: 2628595020		Collected: 02/01/20 14:16		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0077J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/13/20 19:27	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW
 Pace Project No.: 2628595

Sample: T1-2HT		Lab ID: 2628595021		Collected: 02/01/20 14:20		Received: 02/04/20 10:48		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0062J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 18:20	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW

Pace Project No.: 2628595

QC Batch: 43170 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
 Associated Lab Samples: 2628595001, 2628595002, 2628595003, 2628595004, 2628595005, 2628595006, 2628595007, 2628595008,
 2628595009, 2628595010, 2628595011, 2628595012, 2628595013, 2628595014, 2628595015, 2628595016,
 2628595017, 2628595018, 2628595019, 2628595020

METHOD BLANK: 197294 Matrix: Water
 Associated Lab Samples: 2628595001, 2628595002, 2628595003, 2628595004, 2628595005, 2628595006, 2628595007, 2628595008,
 2628595009, 2628595010, 2628595011, 2628595012, 2628595013, 2628595014, 2628595015, 2628595016,
 2628595017, 2628595018, 2628595019, 2628595020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	0.00035	02/13/20 14:03	

LABORATORY CONTROL SAMPLE: 197295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 197296 197297

Parameter	Units	2628595003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	0.023J	0.1	0.1	0.14	0.15	122	127	75-125	3	20	M6

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW

Pace Project No.: 2628595

QC Batch: 43171

Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A

Analysis Description: 6020B MET Dissolved

Associated Lab Samples: 2628595021

METHOD BLANK: 197298

Matrix: Water

Associated Lab Samples: 2628595021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	0.00035	02/12/20 18:08	

LABORATORY CONTROL SAMPLE: 197299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 197300

197301

Parameter	Units	2628599001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	0.0065J	0.1	0.1	0.12	0.11	111	109	75-125	2	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McManus SW

Pace Project No.: 2628595

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus SW

Pace Project No.: 2628595

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628595001	T2-1HT	EPA 3005A	43170	EPA 6020B	43193
2628595002	T2-2HTS	EPA 3005A	43170	EPA 6020B	43193
2628595003	T2-2HT	EPA 3005A	43170	EPA 6020B	43193
2628595004	T2-3HTS	EPA 3005A	43170	EPA 6020B	43193
2628595005	T2-3HT	EPA 3005A	43170	EPA 6020B	43193
2628595006	T2-4HTS	EPA 3005A	43170	EPA 6020B	43193
2628595007	T2-4HT	EPA 3005A	43170	EPA 6020B	43193
2628595008	T2-4LT	EPA 3005A	43170	EPA 6020B	43193
2628595009	T2-3LT	EPA 3005A	43170	EPA 6020B	43193
2628595010	T2-2LT	EPA 3005A	43170	EPA 6020B	43193
2628595011	T1-1LT	EPA 3005A	43170	EPA 6020B	43193
2628595012	T1-4LT	EPA 3005A	43170	EPA 6020B	43193
2628595013	T1-3LT	EPA 3005A	43170	EPA 6020B	43193
2628595014	T1-2LT	EPA 3005A	43170	EPA 6020B	43193
2628595015	T1-4HTS	EPA 3005A	43170	EPA 6020B	43193
2628595016	T1-4HT	EPA 3005A	43170	EPA 6020B	43193
2628595017	T1-3HTS	EPA 3005A	43170	EPA 6020B	43193
2628595018	T1-3HT	EPA 3005A	43170	EPA 6020B	43193
2628595019	T1-1HT	EPA 3005A	43170	EPA 6020B	43193
2628595020	T1-2HTS	EPA 3005A	43170	EPA 6020B	43193
2628595021	T1-2HT	EPA 3005A	43171	EPA 6020B	43192

REPORT OF LABORATORY ANALYSIS

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Section A

Required Client Information:
Company: Georgia Power
Address: 1003 Weatherstone Parkway
Suite 320, Woodstock, GA 30188

Section B

Required Project Information:
Report To: Millett, Lee
Copy To:
Purchase Order #:
Project Name: Plant Macleanus SW

Section C

Invoice Information:
Attention:
Company Name:
Address:
Poc Project Manager: kevin.herring@pacelabs.com.
Poc Profile #: 2919

CHAIN-OF-CUSTODY / Analytical Request Dr
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu...

W0#: 2628595



2628595

Table with columns: ITEM #, MATRIX CODE, SAMPLE TYPE, DATE, TIME, SAMPLE TEMP AT COLLECTION, # OF CONTAINERS, Preservatives (Unpreserved, H2SO4, HNO3, HCl, NaOH, Na2S2O3, Methanol, Other), Analysis Test (Metals by 6020, Dissolved Metals by 6020), Residual Chlorine (Y/N), and various checkboxes for handling and custody.

As Only

Vertical handwritten notes including 'K. Wellingtons / POCE 2/4/20 0800 1.4' and 'K. Wellingtons'.

Form section for 'PRINT Name of SAMPLER', 'SIGNATURE OF SAMPLER', 'DATE Signed: 2/3/20', and checkboxes for 'TEMP in C', 'Received on ice (Y/N)', 'Custody Sealed Cooler (Y/N)', and 'Samples Intact (Y/N)'.



www.paceanalytical.com

CHAIN-OF-CUSTODY / Analytical Request Doc

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must!

W0# : 2628595

PM: KH Due Date: 02/06/20
CLIENT: 26-GA Power

Section A

Required Client Information:
 Company: Georgia Power
 Address: 1003 Weatherstone Parkway
 Suite 320 Woodstock, GA 30188
 Email: lee.miller@ga.com
 Phone: (770) 276-2760 Fax
 Requested Due Date:

Section B

Required Project Information:
 Report To: Matt Lee
 Copy To: *Kevin, Stephen*
 Purchase Order #:
 Project Name: Plant Mclanahan SW
 Project #:

Section C

Invoice Information:
 Attention:
 Company Name:
 Address:
 P: Kevin Herring
 Kevin.Herring@pacstate.com
 P: Kevin Herring
 Kevin.Herring@pacstate.com
 P: Kevin Herring
 Kevin.Herring@pacstate.com
 Project Profile #: 2919

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Metals by 6020	Dissolved Metals by 6020	Residual Chlorine (Y/N)		
			START DATE	START TIME			END DATE	END TIME	Unpreserved	H2SO4	HNO3	HCl	NaOH				Na2S2O3	Methanol
T2-4HT	G	GRAB	1/14/14	15:14		1												
MCA-06 LT Aalborg	G	GRAB	1/14/14	09:50		1												
MCA-06 LT	G	GRAB	1/14/14	09:50		1												
T2-4HT	G	GRAB	1/14/14	09:46		1												
T2-3LT	G	GRAB	1/14/14	11:20		1												
T2-2LT	G	GRAB	1/14/14	11:28		1												
T3-4HTS	G	GRAB	1/14/14	13:44		1												
T3-4HT	G	GRAB	1/14/14	13:50		1												
T3-3HTS	G	GRAB	1/14/14	13:58		1												
T3-2HTS	G	GRAB	1/14/14	14:08		1												
MCA-05 HT Aalborg	G	GRAB	1/14/14	14:30		1												

DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME
1/14/14	15:14								
1/14/14	09:50								
1/14/14	09:50								
1/14/14	09:46								
1/14/14	11:20								
1/14/14	11:28								
1/14/14	13:44								
1/14/14	13:50								
1/14/14	13:58								
1/14/14	14:08								
1/14/14	14:30								

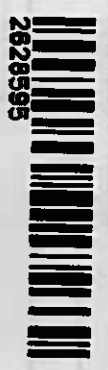
PRINT Name of SAMPLER: *Kevin Herring*
 SIGNATURE OF SAMPLER: *Kevin Herring*
 DATE SIGNED: 2/19/20

TEMP in C: 4.0
 Received on ice (Y/N): Y
 Sealed Cooler (Y/N): Y
 Samples Intact (Y/N): Y



CHAIN-OF-CUSTODY / Analytical Request D
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mt

W0# : 2628595



2628595

Section A

Required Client Information:

Company: Georgia Power
Address: 1003 Weatherstone Parkway
Suite 320, Woodstock, GA 30186
Email: lee.miller@geosclab.com
Phone: (251)776-2760
Requested Due Date:

Section B

Required Project Information:

Report To: Miller, Lee
Copy To: *Lee Miller*
Purchase Order #: *12345678*
Project Name: Plant Mclennan SW
Project #:

Section C

Invoice Information:

Attention:
Company Name:
Address:
Pace Project Manager: Kevin Harting@geosclab.com
Pace Profile #: 2919

Requested/Analysis Returned (Y/N)

GA

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample ids must be unique	MATRIX	CODE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Residual Chlorine (Y/N)			
				START DATE	END DATE			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3		Methanol	Other	
1	MCN-07WAT	MCN-07WAT	G	2/1/20	1355		1										
2	TA-3WAT	TA-3WAT	G	2/1/20	1356		1										
3	TA-1WAT	TA-1WAT	G	2/1/20	1358		1										
4	TA-2WAT	TA-2WAT	G	2/1/20	1416		1										
5	MCN-07WAT	MCN-07WAT	G	2/1/20	1420		1										
6	TA-2WAT	TA-2WAT	G	2/1/20	1420		1										
7	TA-2WAT	TA-2WAT	G	2/1/20	1428		1										
8	TA-2WAT	TA-2WAT	G	2/1/20	1432		1										
9	TA-2WAT	TA-2WAT	G	2/1/20	1432		1										
10	TA-3WAT	TA-3WAT	G	2/1/20	1446		1										
11	TA-3WAT	TA-3WAT	G	2/1/20	1450		1										
12	TA-4WAT	TA-4WAT	G	2/1/20	1500		1										

Additional Comments

Requested by (Name)	DATE	TIME	Approved by (Name)	DATE	TIME	Sample Conditions
<i>Kevin Harting</i>	2/1/20	1354	<i>Lee Miller</i>	2/3/20	1654	- Y Y Y
<i>Kevin Harting</i>	2/1/20	1416	<i>Lee Miller</i>	2/3/20	10:48	Y Y Y
<i>Kevin Harting</i>	2/1/20	1420	<i>Lee Miller</i>	2/3/20	1216	Y Y Y

Signature of Sampler: *Kevin Harting* DATE Signed: 2/3/20

Signature of Analyst: *Lee Miller* DATE Signed: 2/3/20

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

February 06, 2020

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

RE: Project: Plant McManus SW
Pace Project No.: 2628598

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Faye, Resolute
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Lea Millet, Resolute Environmental & Water Resources
Lauren Petty, Southern Company Services, Inc.
Kevin Stephenson, Resolute Environmental & Water Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McManus SW

Pace Project No.: 2628598

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus SW

Pace Project No.: 2628598

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628598001	T1-1LT	Water	02/01/20 09:50	02/04/20 08:00
2628598002	T1-4LT	Water	02/01/20 09:56	02/04/20 08:00
2628598003	T1-3LT	Water	02/01/20 10:06	02/04/20 08:00
2628598004	T1-2LT	Water	02/01/20 10:16	02/04/20 08:00
2628598005	T1-4HTS	Water	02/01/20 13:34	02/04/20 08:00
2628598006	T1-4HT	Water	02/01/20 13:40	02/04/20 08:00
2628598007	T1-3HTS	Water	02/01/20 13:52	02/04/20 08:00
2628598008	T1-3HT	Water	02/01/20 13:56	02/04/20 08:00
2628598009	T1-1HT	Water	02/01/20 14:08	02/04/20 08:00
2628598010	T1-2HTS	Water	02/01/20 14:16	02/04/20 08:00
2628598011	T1-2HT	Water	02/01/20 14:20	02/04/20 08:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus SW

Pace Project No.: 2628598

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2628598001	T1-1LT	EPA 6020B	CSW	1
2628598002	T1-4LT	EPA 6020B	CSW	1
2628598003	T1-3LT	EPA 6020B	CSW	1
2628598004	T1-2LT	EPA 6020B	CSW	1
2628598005	T1-4HTS	EPA 6020B	CSW	1
2628598006	T1-4HT	EPA 6020B	CSW	1
2628598007	T1-3HTS	EPA 6020B	CSW	1
2628598008	T1-3HT	EPA 6020B	CSW	1
2628598009	T1-1HT	EPA 6020B	CSW	1
2628598010	T1-2HTS	EPA 6020B	CSW	1
2628598011	T1-2HT	EPA 6020B	CSW	1

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW

Pace Project No.: 2628598

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628598002	T1-4LT					
EPA 6020B	Arsenic	0.0055J	mg/L	0.050	02/05/20 18:49	
2628598003	T1-3LT					
EPA 6020B	Arsenic	0.0039J	mg/L	0.050	02/05/20 18:55	
2628598005	T1-4HTS					
EPA 6020B	Arsenic	0.0037J	mg/L	0.050	02/05/20 19:06	
2628598006	T1-4HT					
EPA 6020B	Arsenic	0.0059J	mg/L	0.050	02/05/20 19:23	
2628598007	T1-3HTS					
EPA 6020B	Arsenic	0.0044J	mg/L	0.050	02/05/20 19:29	
2628598008	T1-3HT					
EPA 6020B	Arsenic	0.0052J	mg/L	0.050	02/05/20 19:35	
2628598009	T1-1HT					
EPA 6020B	Arsenic	0.0050J	mg/L	0.050	02/05/20 19:41	
2628598010	T1-2HTS					
EPA 6020B	Arsenic	0.0060J	mg/L	0.050	02/05/20 19:46	
2628598011	T1-2HT					
EPA 6020B	Arsenic	0.0049J	mg/L	0.050	02/05/20 19:52	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628598

Sample: T1-1LT		Lab ID: 2628598001		Collected: 02/01/20 09:50	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	ND	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 18:26	7440-38-2		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628598

Sample: T1-4LT **Lab ID: 2628598002** Collected: 02/01/20 09:56 Received: 02/04/20 08:00 Matrix: Water

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

6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A

Arsenic	0.0055J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 18:49	7440-38-2	
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW
Pace Project No.: 2628598

Sample: T1-3LT		Lab ID: 2628598003	Collected: 02/01/20 10:06	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0039J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 18:55	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628598

Sample: T1-2LT		Lab ID: 2628598004		Collected: 02/01/20 10:16	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 19:00	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628598

Sample: T1-4HTS		Lab ID: 2628598005		Collected: 02/01/20 13:34		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0037J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 19:06	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628598

Sample: T1-4HT		Lab ID: 2628598006		Collected: 02/01/20 13:40		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0059J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 19:23	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628598

Sample: T1-3HTS		Lab ID: 2628598007		Collected: 02/01/20 13:52	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0044J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 19:29	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW
Pace Project No.: 2628598

Sample: T1-3HT		Lab ID: 2628598008	Collected: 02/01/20 13:56	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0052J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 19:35	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628598

Sample: T1-1HT		Lab ID: 2628598009		Collected: 02/01/20 14:08		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0050J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 19:41	7440-38-2	

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ANALYTICAL RESULTS

Project: Plant McManus SW
 Pace Project No.: 2628598

Sample: T1-2HTS		Lab ID: 2628598010		Collected: 02/01/20 14:16	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.0060J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 19:46	7440-38-2		

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628598

Sample: T1-2HT		Lab ID: 2628598011		Collected: 02/01/20 14:20	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0049J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 19:52	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW

Pace Project No.: 2628598

QC Batch: 42836 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2628598001, 2628598002, 2628598003, 2628598004, 2628598005, 2628598006, 2628598007, 2628598008, 2628598009, 2628598010, 2628598011

METHOD BLANK: 195730 Matrix: Water
Associated Lab Samples: 2628598001, 2628598002, 2628598003, 2628598004, 2628598005, 2628598006, 2628598007, 2628598008, 2628598009, 2628598010, 2628598011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	02/05/20 18:15	

LABORATORY CONTROL SAMPLE: 195731

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 195732 195733

Parameter	Units	2628598001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	0.1	0.1	0.11	0.099	106	96	75-125	9	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McManus SW

Pace Project No.: 2628598

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus SW

Pace Project No.: 2628598

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628598001	T1-1LT	EPA 3005A	42836	EPA 6020B	42909
2628598002	T1-4LT	EPA 3005A	42836	EPA 6020B	42909
2628598003	T1-3LT	EPA 3005A	42836	EPA 6020B	42909
2628598004	T1-2LT	EPA 3005A	42836	EPA 6020B	42909
2628598005	T1-4HTS	EPA 3005A	42836	EPA 6020B	42909
2628598006	T1-4HT	EPA 3005A	42836	EPA 6020B	42909
2628598007	T1-3HTS	EPA 3005A	42836	EPA 6020B	42909
2628598008	T1-3HT	EPA 3005A	42836	EPA 6020B	42909
2628598009	T1-1HT	EPA 3005A	42836	EPA 6020B	42909
2628598010	T1-2HTS	EPA 3005A	42836	EPA 6020B	42909
2628598011	T1-2HT	EPA 3005A	42836	EPA 6020B	42909

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields r

WO# : 2628598

Section A
Required Client Information:
 Company: Georgia Power
 Address: 1003 Westchester Parkway
 Suite 320, Woodstock, GA 30188
 Email: lea.milled@resolutions.com
 Phone: (251)776-2760 Fax:
 Requested Due Date:

Section B
Required Project Information:
 Report To: Millie Lee
 Copy To: *[Signature]*
 Purchase Order #: Plant McManus SW
 Project Name:
 Project #:

Section C
Invoice Information:
 Attention:
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: kevin.herring@pace-labs.com
 Pace Profile #: 2919
 Regulatory Agency:
 State / Location: GA

#	ITEM	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES						Metals by 6020	Dispersed Metals by 6020	Residual Chlorine (Y/N)
				START DATE	END DATE				UNPRESERVED	H2SO4	HNO3	HCl	NaOH	Na2S2O3			
1	MEM-07-LT Asympt	Drinking Water	DW	2/13/20 09:00		G		1									
2	TI-1-LT	Waste Water	WW	2/13/20 09:00		G		1									
3	TI-4-LT	Waste Water	WW	2/13/20 09:00		G		1									
4	TI-3-LT	Waste Water	WW	2/13/20 09:00		G		1									
5	MEM-07-LT Asympt	Drinking Water	DW	2/13/20 10:15		G		1									
6	TI-2-LT	Waste Water	WW	2/13/20 10:16		G		1									
7	TI-4-LT	Waste Water	WW	2/13/20 13:34		G		1									
8	TI-4-LT	Waste Water	WW	2/13/20 13:40		G		1									
9	TI-2-LT	Waste Water	WW	2/13/20 13:52		G		1									
10	TI-1-LT	Waste Water	WW	2/13/20 13:55		G		1									
11	MEM-07-LT Asympt	Drinking Water	DW	2/13/20 13:55		G		1									
12	MEM-07-LT Asympt	Drinking Water	DW	2/13/20 13:55		G		1									

RELINQUISHED BY / APPLICATION	DATE	TIME	ACCEPTED BY / APPLICATION	DATE	TIME	TEMP in C	Received on	Ice (Y/N)	Custody Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
<i>[Signature]</i>	2/13/20	16:54	<i>[Signature]</i>	2/13/20	16:54	-		Y	Y	Y	Y
<i>[Signature]</i>	2/14/20	10:46	<i>[Signature]</i>	2/14/20	10:46						
<i>[Signature]</i>	2/14/20	12:16	<i>[Signature]</i>	2/14/20	12:16	4.0		Y	Y	Y	Y

PRINT Name of SAMPLER:
[Signature]
Signature of Sampler:
[Signature]
DATE Signed:
 2/13/20



CHAIN-OF-CUSTODY / Analytical Request Document

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

WO# : 2628598

PM: KH **Due Date: 02/05/20**
CLIENT: 26-GA Power

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power	Report To: Miller, Lea	Address: 1003 Weatherstone Parkway	Copy To:	Company Name:	Address:
Suite 320, Woodstock, GA 30188				Pace Quote:	Pace Project Manager: kevin.herring@pacelabs.com,
Email: lea.miller@resolutionsenv.com				Pace Profile #: 2919	State (Abbreviation): GA
Phone: (770) 776-2760	Project Name: Plant McManus SW	Purchase Order #:			
Requested Due Date:	Project #:				

ITEM #	MATRIX	CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analytes Test	Metals by 6020	Dissolved Metals by 6020	Residual Chlorine (Y/N)
				START DATE	END DATE							
1	Drinking Water	DW	G	2/3/20 14:30			1					
2	Waste Water	WW	G	2/3/20 14:35			1					
3	Waste Water	WW	G	2/3/20 14:40			1					
4	Waste Water	WW	G	2/3/20 14:45			1					
5	Waste Water	WW	G	2/3/20 14:50			1					
6	Waste Water	WW	G	2/3/20 14:55			1					
7	Waste Water	WW	G	2/3/20 15:00			1					
8	Waste Water	WW	G	2/3/20 15:05			1					
9	Waste Water	WW	G	2/3/20 15:10			1					
10	Waste Water	WW	G	2/3/20 15:15			1					
11	Waste Water	WW	G	2/3/20 15:20			1					
12	Waste Water	WW	G	2/3/20 15:25			1					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	RECEIVED ON	TEMP °C	Received on	Is (Y/N)	Custody	Sealed	Cooler	Samples
As only	Kevin Herring / Pace	2/4/20	0800	Kevin Herring / Pace	2/4/20	0800	1.4	Y	Y	Y	Y	Y	Y	Y

PRINTER NAME AND SIGNATURE
 PRINT NAME OF SAMPLER: Kevin Herring
 SIGNATURE OF SAMPLER: *[Signature]* DATE: 2/3/20



CHAIN-OF-CUSTODY / Analytical Request Doc

WO#: 2628598

PM: KH Due Date: 02/05/20
 CLIENT: 26-GA Power

Section A
 Required Client Information:
 Company: Georgia Power
 Address: 1003 Weatherstone Parkway
 Suite 320, Woodstock, GA 30188
 Email: kea.millet@pacelabs.com
 Phone: (251) 776-2780 Fax

Section B
 Required Project Information:
 Report To: Millet, Lea
 Copy To:
 Purchase Order #: Plant McMarus SW
 Project Name: Plant McMarus SW
 Project #:

Section C
 Invoice Information:
 Attribution:
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: kevin.heating@pacelabs.com
 Pace Profile #: 2819
 Regulatory Agency:
 State/Region: GA

ITEM #	MATRIX CODE	MATRIX	SAMPLE ID	COLLECTED		MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	# OF CONTAINERS	PRESERVATIVES							ANALYSIS TEST	Metals by 6020	Dissolved Metals by 6020	Residual Chlorine (Y/N)
				START DATE	END DATE				UNPRESERVED	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol				
1		Drinking Water	T2-445T	2/4/20 1514		G	G-GRAB	1											
2		Waste Water	MCM-06-LT Aduquard	2/4/20 0800		G	G-GRAB	1											
3		Product	MCM-06-LT	2/4/20 0800		G	G-GRAB	1											
4		Soil/Sediment	T2-445T	2/4/20 0800		G	G-GRAB	1											
5		Other	T2-3LT	2/4/20 1120		G	G-GRAB	1											
6		Other	T2-2LT	2/4/20 1138		G	G-GRAB	1											
7		Other	T3-445T	2/4/20 1344		G	G-GRAB	1											
8		Other	T3-445T	2/4/20 1350		G	G-GRAB	1											
9		Other	T3-345T	2/4/20 1408		G	G-GRAB	1											
10		Other	T3-345T	2/4/20 1410		G	G-GRAB	1											
11		Other	T3-245T	2/4/20 1430		G	G-GRAB	1											
12		Other	MCM-05-WT Aduquard	2/4/20 1430		G	G-GRAB	1											

As only

RELINQUISHED BY / APPLICATION: Kevin Wellington / Pace
 DATE: 2/4/20
 TIME: 0800

ACCEPTED BY / APPLICATION: K. Wellington / Pace
 DATE: 2/4/20
 TIME: 1417

RECEIVED ON: 2/4/20
 TEMP IN C: 14.7

RECEIVED BY: [Signature]
 DATE SIGNED: 2/4/20

ANALYSIS TEST: [Blank]

Metals by 6020: [Blank]

Dissolved Metals by 6020: [Blank]

Residual Chlorine (Y/N): [Blank]



CHAIN-OF-CUSTODY / Analytical Request Document

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

WO# : 2628598

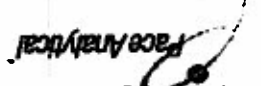
PM: KH **Due Date: 02/05/20**
CLIENT: 26-GA Power

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Georgia Power	Report To: Mills, Lisa	Company Name:	Address:	Attention:	
Address: 1003 Weatherstone Parkway	Copy To: <i>William Stofel</i>	Purchase Order #:	Project Name: Plant McManus SW	Pace Quotes:	Pace Profile #: 2919
Suite 320, Woodstock, GA 30188	Email: <i>lea.millet@reanalytical.com</i>	Project #:		Pace Project Manager: <i>kevin.herring@pacelabs.com</i>	
Phone: (251) 776-2760	Fax:				
Requested Due Date:					

ITEM #	MATRIX CODE	MATRIX	COLLECTED		SAMPLE TYPE (G-RAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES		Metals by 6020	Dispersed Metals by 6020	Residual Chlorine (Y/N)
			START DATE	END DATE				Unpreserved	Other			
1	T3-245	Dosing Water	2/3/20 14:30		G		1					
2	T3-145	Waste Water	2/3/20 14:35		G		1					
3	MCM-0545	Waste Water	2/3/20 14:46		G		1					
4	MCM-0515	Product	2/3/20 15:45		G		1					
5	MCM-0515	Product	2/3/20 15:47		G		1					
6	T3-415	Soilsolid	2/3/20 16:45		G		1					
7	T3-3-315	Oil	2/3/20 17:12		G		1					
8	T3-245	Wipe	2/3/20 15:32		G		1					
9	Dug-1	Other			G		1					
10		Tissue										
11												
12												

REL. REQUESTED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	RECEIVED ON	TEMP IN C	Sealed	Cooler	Intact
<i>Keenan Stimpson</i>	2/3/20	16:54	<i>Kevin Herring</i>	2/3/20	16:57			Y	Y	Y
<i>Stefan K...</i>	2/3/20	10:48	<i>Yermolovich / Pace</i>	2/4/20	10:48			Y	Y	Y
<i>Yermolovich / Pace</i>	2/4/20	12:14	<i>R. Willington / Pace</i>	2/4/20	12:16			Y	Y	Y

PRINT NAME OF SAMPLER: *Kevin Herring*
SIGNATURE OF SAMPLER: *[Signature]*
DATE SIGNED: *2/3/20*



Client Name: Georgia Power

Project # **MO#: 2628598**

Courier: Fed Ex UPS USPS Client Commercial Face Other
 Tracking #: _____
 Custody Seal on Cooler/Box Present: Yes No
 Seals intact: Yes

Packing Material: Bubble Wrap Bubble Bags None Other ziplock bags

Type of Ice: Blue None Blue None

Samples on ice, cooling process has begun

Thermometer Used: THC 4.0

Biological Tissue Is Frozen: Yes No

Date and Initials of person examining contents: RM 2/1/20

Temp should be above freezing to 6°C

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

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

Comments/ Resolution: _____

Project Manager Review: _____
 Date: _____

Field Data Required? Y N

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

February 13, 2020

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

RE: Project: Plant McManus SW
Pace Project No.: 2628599

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Faye, Resolute
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Lea Millet, Resolute Environmental & Water Resources
Lauren Petty, Southern Company Services, Inc.
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McManus SW

Pace Project No.: 2628599

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus SW

Pace Project No.: 2628599

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628599001	T3-4HTS	Water	02/02/20 13:44	02/04/20 08:00
2628599002	T3-4HT	Water	02/02/20 13:50	02/04/20 08:00
2628599003	T3-3HTS	Water	02/02/20 14:08	02/04/20 08:00
2628599004	T3-3HT	Water	02/02/20 14:10	02/04/20 08:00
2628599005	T3-2HTS	Water	02/02/20 14:28	02/04/20 08:00
2628599006	T3-2HT	Water	02/02/20 14:34	02/04/20 08:00
2628599007	T3-1HT	Water	02/02/20 14:35	02/04/20 08:00
2628599008	T3-4LT	Water	02/03/20 10:40	02/04/20 08:00
2628599009	T3-3LT	Water	02/03/20 12:12	02/04/20 08:00
2628599010	T3-2LT	Water	02/03/20 13:30	02/04/20 08:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus SW

Pace Project No.: 2628599

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2628599001	T3-4HTS	EPA 6020B	CSW	1
		EPA 6020B	CSW	1
2628599002	T3-4HT	EPA 6020B	CSW	1
		EPA 6020B	CSW	1
2628599003	T3-3HTS	EPA 6020B	CSW	1
		EPA 6020B	CSW	1
2628599004	T3-3HT	EPA 6020B	CSW	1
		EPA 6020B	CSW	1
2628599005	T3-2HTS	EPA 6020B	CSW	1
		EPA 6020B	CSW	1
2628599006	T3-2HT	EPA 6020B	CSW	1
		EPA 6020B	CSW	1
2628599007	T3-1HT	EPA 6020B	CSW	1
		EPA 6020B	CSW	1
2628599008	T3-4LT	EPA 6020B	CSW	1
		EPA 6020B	CSW	1
2628599009	T3-3LT	EPA 6020B	CSW	1
		EPA 6020B	CSW	1
2628599010	T3-2LT	EPA 6020B	CSW	1
		EPA 6020B	CSW	1

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW

Pace Project No.: 2628599

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628599001	T3-4HTS					
EPA 6020B	Arsenic	0.0065J	mg/L	0.050	02/05/20 19:58	
EPA 6020B	Arsenic, Dissolved	0.0047J	mg/L	0.050	02/12/20 18:25	D3
2628599002	T3-4HT					
EPA 6020B	Arsenic	0.0064J	mg/L	0.050	02/05/20 20:03	
EPA 6020B	Arsenic, Dissolved	0.0084J	mg/L	0.050	02/12/20 18:48	D3
2628599003	T3-3HTS					
EPA 6020B	Arsenic	0.0072J	mg/L	0.050	02/05/20 20:09	
EPA 6020B	Arsenic, Dissolved	0.0065J	mg/L	0.050	02/12/20 18:54	D3
2628599004	T3-3HT					
EPA 6020B	Arsenic	0.0058J	mg/L	0.050	02/05/20 20:15	
EPA 6020B	Arsenic, Dissolved	0.0061J	mg/L	0.050	02/12/20 19:00	D3
2628599005	T3-2HTS					
EPA 6020B	Arsenic	0.0054J	mg/L	0.050	02/05/20 20:32	
EPA 6020B	Arsenic, Dissolved	0.0068J	mg/L	0.050	02/12/20 19:17	D3
2628599006	T3-2HT					
EPA 6020B	Arsenic	0.0056J	mg/L	0.050	02/05/20 20:38	
EPA 6020B	Arsenic, Dissolved	0.0065J	mg/L	0.050	02/12/20 19:23	D3
2628599007	T3-1HT					
EPA 6020B	Arsenic	0.0066J	mg/L	0.050	02/05/20 20:44	
EPA 6020B	Arsenic, Dissolved	0.0061J	mg/L	0.050	02/12/20 19:28	D3
2628599008	T3-4LT					
EPA 6020B	Arsenic	0.0048J	mg/L	0.050	02/05/20 20:49	
EPA 6020B	Arsenic, Dissolved	0.0065J	mg/L	0.050	02/12/20 19:34	D3
2628599009	T3-3LT					
EPA 6020B	Arsenic	0.0052J	mg/L	0.050	02/05/20 20:55	
EPA 6020B	Arsenic, Dissolved	0.0062J	mg/L	0.050	02/12/20 19:40	D3
2628599010	T3-2LT					
EPA 6020B	Arsenic	0.0044J	mg/L	0.050	02/06/20 19:10	D3
EPA 6020B	Arsenic, Dissolved	0.0047J	mg/L	0.050	02/12/20 19:45	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628599

Sample: T3-4HTS		Lab ID: 2628599001		Collected: 02/02/20 13:44	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.0065J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 19:58	7440-38-2		
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	0.0047J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 18:25	7440-38-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628599

Sample: T3-4HT		Lab ID: 2628599002		Collected: 02/02/20 13:50	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0064J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 20:03	7440-38-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0084J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 18:48	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628599

Sample: T3-3HTS		Lab ID: 2628599003		Collected: 02/02/20 14:08	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0072J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 20:09	7440-38-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0065J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 18:54	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628599

Sample: T3-3HT		Lab ID: 2628599004		Collected: 02/02/20 14:10	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0058J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 20:15	7440-38-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0061J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 19:00	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628599

Sample: T3-2HTS		Lab ID: 2628599005		Collected: 02/02/20 14:28		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0054J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 20:32	7440-38-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0068J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 19:17	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628599

Sample: T3-2HT		Lab ID: 2628599006		Collected: 02/02/20 14:34		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0056J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 20:38	7440-38-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0065J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 19:23	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628599

Sample: T3-1HT		Lab ID: 2628599007		Collected: 02/02/20 14:35		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0066J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 20:44	7440-38-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0061J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 19:28	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628599

Sample: T3-4LT		Lab ID: 2628599008		Collected: 02/03/20 10:40	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0048J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 20:49	7440-38-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0065J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 19:34	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628599

Sample: T3-3LT		Lab ID: 2628599009		Collected: 02/03/20 12:12	Received: 02/04/20 08:00	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0052J	mg/L	0.050	0.0035	10	02/04/20 21:50	02/05/20 20:55	7440-38-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0062J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 19:40	7440-38-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628599

Sample: T3-2LT		Lab ID: 2628599010		Collected: 02/03/20 13:30		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0044J	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 19:10	7440-38-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0047J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 19:45	7440-38-2	D3

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW
Pace Project No.: 2628599

QC Batch: 42836 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2628599001, 2628599002, 2628599003, 2628599004, 2628599005, 2628599006, 2628599007, 2628599008, 2628599009

METHOD BLANK: 195730 Matrix: Water
Associated Lab Samples: 2628599001, 2628599002, 2628599003, 2628599004, 2628599005, 2628599006, 2628599007, 2628599008, 2628599009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	02/05/20 18:15	

LABORATORY CONTROL SAMPLE: 195731

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 195732 195733

Parameter	Units	2628598001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	0.1	0.1	0.11	0.099	106	96	75-125	9	20	

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

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QUALITY CONTROL DATA

Project: Plant McManus SW

Pace Project No.: 2628599

QC Batch: 42953	Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A	Analysis Description: 6020B MET
Associated Lab Samples: 2628599010	

METHOD BLANK: 196325 Matrix: Water

Associated Lab Samples: 2628599010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	02/06/20 18:59	

LABORATORY CONTROL SAMPLE: 196326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 196330 196331

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2628600001	Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Arsenic	mg/L	0.0061J	0.1	0.1	0.1	0.11	0.11	110	107	75-125	3	20	

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

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QUALITY CONTROL DATA

Project: Plant McManus SW
Pace Project No.: 2628599

QC Batch: 43171 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 2628599001, 2628599002, 2628599003, 2628599004, 2628599005, 2628599006, 2628599007, 2628599008, 2628599009, 2628599010

METHOD BLANK: 197298 Matrix: Water
Associated Lab Samples: 2628599001, 2628599002, 2628599003, 2628599004, 2628599005, 2628599006, 2628599007, 2628599008, 2628599009, 2628599010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	0.00035	02/12/20 18:08	

LABORATORY CONTROL SAMPLE: 197299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 197300 197301

Parameter	Units	2628599001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	0.0065J	0.1	0.1	0.12	0.11	111	109	75-125	2	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant McManus SW
Pace Project No.: 2628599

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus SW

Pace Project No.: 2628599

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628599001	T3-4HTS	EPA 3005A	42836	EPA 6020B	42909
2628599002	T3-4HT	EPA 3005A	42836	EPA 6020B	42909
2628599003	T3-3HTS	EPA 3005A	42836	EPA 6020B	42909
2628599004	T3-3HT	EPA 3005A	42836	EPA 6020B	42909
2628599005	T3-2HTS	EPA 3005A	42836	EPA 6020B	42909
2628599006	T3-2HT	EPA 3005A	42836	EPA 6020B	42909
2628599007	T3-1HT	EPA 3005A	42836	EPA 6020B	42909
2628599008	T3-4LT	EPA 3005A	42836	EPA 6020B	42909
2628599009	T3-3LT	EPA 3005A	42836	EPA 6020B	42909
2628599010	T3-2LT	EPA 3005A	42953	EPA 6020B	42956
2628599001	T3-4HTS	EPA 3005A	43171	EPA 6020B	43192
2628599002	T3-4HT	EPA 3005A	43171	EPA 6020B	43192
2628599003	T3-3HTS	EPA 3005A	43171	EPA 6020B	43192
2628599004	T3-3HT	EPA 3005A	43171	EPA 6020B	43192
2628599005	T3-2HTS	EPA 3005A	43171	EPA 6020B	43192
2628599006	T3-2HT	EPA 3005A	43171	EPA 6020B	43192
2628599007	T3-1HT	EPA 3005A	43171	EPA 6020B	43192
2628599008	T3-4LT	EPA 3005A	43171	EPA 6020B	43192
2628599009	T3-3LT	EPA 3005A	43171	EPA 6020B	43192
2628599010	T3-2LT	EPA 3005A	43171	EPA 6020B	43192

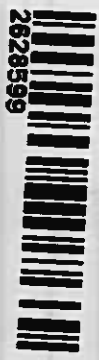
REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request D
 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu

W0#: 2628599
 2628599



Section A Required Client Information: Company: Georgia Power Address: 1003 Westhatch Parkway Suite 320, Woodstock, GA 30188 Email: hsa.milled@ge.com Phone: (770) 278-2780 Fac: [blank] Requested Due Date: [blank]		Section B Required Project Information: Report To: Millie Lee Copy To: [blank] Purchase Order #: [blank] Project Name: Plant McMannus SW Project #: [blank]		Section C Invoice Information: Attention: [blank] Company Name: [blank] Address: [blank] Pace Quote: [blank] Pace Project Manager: Kevin Herring@ge.com Pace Profile #: 2919	
---	--	--	--	--	--

ITEM #	MATRIX	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analyses Test		Residual Chlorine (Y/N)				
				START DATE TIME	END DATE TIME			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Metals by 6020		Dissolved Metals by 6020			
																			DATE	TIME	
1	T2-4HT	G	2/12/10	15:14			1														
2	MCM-D6-LT Ashpond	G	2/12/10	08:00			1														
3	MCM-D6-LT	G	2/12/10	09:00			1														
4	T2-4LT	G	2/12/10	09:40			1														
5	T2-2LT	G	2/12/10	11:20			1														
6	T3-4HTS	G	2/12/10	13:44			1														
7	T3-4HTS	G	2/12/10	13:50			1														
8	T3-4HTS	G	2/12/10	14:08			1														
9	T3-3HTS	G	2/12/10	14:10			1														
10	T3-3HTS	G	2/12/10	14:10			1														
11	T3-2HTS	G	2/12/10	14:28			1														
12	MCM-D6-LT Ashpond	G	2/12/10	14:30			1														

Section D Required Analytical Info (Y/N) Residual Chlorine (Y/N)		Section E Date: 2/12/10 Time: 16:57 Location: Ash Pond	
---	--	--	--

PRINT Name of SAFFLERS: SAFFLERS: SIGNATURE: [Signature] DATE SIGNED: 2/12/10	TEMP in C: 40 Received on Ice (Y/N): Y Custody Sealed Cooler (Y/N): Y Samples Intact (Y/N): Y
--	--



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

WO# : 2628599
PM: KH
CLIENT : 26-GR Power
Due Date: 02/07/20

Section A Required Client Information:
 Company: Georgia Power
 Address: 1003 Westlakeside Parkway
 Building: 220, Woodstock, GA 30188
 Email: lea.miller@residualserv.com
 Phone: (251)776-2760
 Requested Due Date: _____

Section B Required Project Information:
 Report To: Millie Lee
 Copy To: Amber Sykes
 Project Name: Plant Mckinnis SW
 Project #: _____

Section C Invoice Information:
 Attention: _____
 Company Name: _____
 Address: _____
 POC: Kevin Herring
 POC Email: kevin.herring@epacalabs.com
 POC Phone: 2919 _____

ITEM #	SAMPLE ID (A-Z, 0-9 / . -) Sample IDs must be unique	MATRIX	CODE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Metals by 6020	Dissolved Metals by 6020	Residual Chlorine (Y/N)
				START DATE	END DATE			Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol			
	MCN-0715 Airport	Gravel	G 21120 0910				1										
	IT-411T	Gravel	G 21120 0910				1										
	IT-411T	Gravel	G 21120 0910				1										
	IT-315	Gravel	G 21120 1006				1										
	MCN-0715T	Gravel	G 21120 1016				1										
	IT-211T	Gravel	G 21120 1334				1										
	IT-411T	Gravel	G 21120 1340				1										
	IT-211T	Gravel	G 21120 1352				1										
	IT-211T	Gravel	G 21120 1355				1										
	IT-211T	Gravel	G 21120 1355				1										
	MCN-0615T Airport	Gravel	G 21120 1355				1										

PRINT Name of SAMPLER: VANDERKAM, SCOTT
DATE SIGNED: 2/3/20

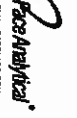
PRINT Name of SAMPLER: VANDERKAM, SCOTT
DATE SIGNED: 2/3/20

TEMP in C: 4.0

Received on Ice (Y/N): Y

Custody Sealed Cooler (Y/N): Y

Samples Intact (Y/N): Y



CHAIN-OF-CUSTODY / Analytical Request Doc

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be filled in.

W0# : 2628599

PM : KH **Due Date :** 02/07/20
CLIENT : 26-GR Power

Section A Requested Client Information: Company: Georgia Power Address: 1003 Weststratone Parkway Suite 320, Woodstock, GA 30188 Email: lea.miller@georgiapower.com Phone: (251)776-2760 Fax: Requested Due Date:	Section B Requested Project Information: Report To: Millie Lea Copy To: <i>Kevin Herring</i> Purchase Order #: Project Name: Plant Mckanman SW Project #: Section C Invoice Information: Attention: Company Name: Address: Pace Quote: Pace Project Manager: Kevin Herring Pace Profile #: 2919
--	---

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / -) Sample IDs must be unique	MATRIX Drinking Water Water Waste Water Product Water Surface Of Wtr Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives							Analytical Test		Residual Chlorine (Y/N)																			
						DATE	TIME	DATE	TIME		Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Metals by 6020		Dissolved Metals by 6020																		
																						START	END																
T1-3WLT				G	2/12/2015					1																													
T1-3WLT				G	2/12/2015					1																													
T1-3WLT				G	2/12/2015					1																													
T1-3WLT				G	2/12/2015					1																													
T1-3WLT				G	2/12/2015					1																													
T2-2WLT				G	2/12/2015					1																													
T2-2WLT				G	2/12/2015					1																													
T2-3WLT				G	2/12/2015					1																													
T2-3WLT				G	2/12/2015					1																													
T2-3WLT				G	2/12/2015					1																													
T2-3WLT				G	2/12/2015					1																													
T2-3WLT				G	2/12/2015					1																													

COLLECTOR *[Handwritten Signature]*
DATE *2/12/20* **TIME** *10:48*
LOCATION *Remore Site/ Pace*

PRINT Name of SAMPLER:		DATE Signed:	
<i>[Signature]</i>	<i>[Signature]</i>		
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	<i>[Initials]</i>	<i>[Initials]</i>	<i>[Initials]</i>

Sample Condition Upon Receipt

FACE Analytical

Client Name: Georgia Power

Print #

MO#: 2628599

PM: KH
 Due Date: 02/07/20
 CLIENT: 26-GR Power

Courier: Fed Ex UPS USPS client commercial Face Other
 Tracking #: _____
 Custody Seal on Cooler/Box Present: yes no Seals intact: yes

Packing Material: Bubble Wrap Bubble Bags None Other ziplock bags

Thermometer Used: THROTTLE
 Cooler Temperature: 4.0
 Temp should be above freezing to 6°C
 Type of Ice: Yes Blue None Samples on ice, cooling process has begun
 Biological Tissue is Frozen: yes no
 Comments: _____
 Date and initials of person examining contents: LM 2/4/20

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

Client Notification/ Resolution:

Field Data Required? Y N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

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

February 14, 2020

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

RE: Project: Plant McManus SW
Pace Project No.: 2628600

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Faye, Resolute
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Lea Millet, Resolute Environmental & Water Resources
Lauren Petty, Southern Company Services, Inc.
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant McManus SW

Pace Project No.: 2628600

Pace Analytical Services Atlanta

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus SW
Pace Project No.: 2628600

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628600001	MCM-07LT ASHPOND	Water	02/01/20 09:40	02/04/20 08:00
2628600002	MCM-07LT	Water	02/01/20 10:15	02/04/20 08:00
2628600003	MCM-06HT ASHPOND	Water	02/01/20 13:55	02/04/20 08:00
2628600004	MCM-06HT	Water	02/01/20 13:55	02/04/20 08:00
2628600005	MCM-07HT ASHPOND	Water	02/01/20 14:20	02/04/20 08:00
2628600006	MCM-07HT	Water	02/01/20 14:20	02/04/20 08:00
2628600007	MCM-06LT ASHPOND	Water	02/02/20 08:50	02/04/20 08:00
2628600008	MCM-06LT	Water	02/02/20 09:00	02/04/20 08:00
2628600009	MCM-05HT ASHPOND	Water	02/02/20 14:30	02/04/20 08:00
2628600010	MCM-05HT	Water	02/02/20 14:46	02/04/20 08:00
2628600011	MCM-05LT ASHPOND	Water	02/03/20 09:45	02/04/20 08:00
2628600012	MCM-05LT	Water	02/03/20 09:47	02/04/20 08:00
2628600013	DUP-1	Water	02/03/20 00:00	02/04/20 08:00
2628600014	T2-1HT	Water	02/01/20 13:55	02/04/20 08:00
2628600015	T2-2HTS	Water	02/01/20 14:28	02/04/20 08:00
2628600016	T2-2HT	Water	02/01/20 14:32	02/04/20 08:00
2628600017	T2-3HTS	Water	02/01/20 14:46	02/04/20 08:00
2628600018	T2-3HT	Water	02/01/20 14:50	02/04/20 08:00
2628600019	T2-4HTS	Water	02/01/20 15:00	02/04/20 08:00
2628600020	T2-4HT	Water	02/01/20 15:14	02/04/20 08:00
2628600021	T2-4LT	Water	02/02/20 09:46	02/04/20 08:00
2628600022	T2-3LT	Water	02/02/20 11:20	02/04/20 08:00
2628600023	T2-2LT	Water	02/02/20 11:38	02/04/20 08:00
2628600024	T1-1LT	Water	02/01/20 09:50	02/04/20 08:00
2628600025	T1-4LT	Water	02/01/20 09:56	02/04/20 08:00
2628600026	T1-3LT	Water	02/01/20 10:06	02/04/20 08:00
2628600027	T1-2LT	Water	02/01/20 10:16	02/04/20 08:00
2628600028	T1-4HTS	Water	02/01/20 13:34	02/04/20 08:00
2628600029	T1-4HT	Water	02/01/20 13:40	02/04/20 08:00
2628600030	T1-3HTS	Water	02/01/20 13:52	02/04/20 08:00
2628600031	T1-3HT	Water	02/01/20 13:56	02/04/20 08:00
2628600032	T1-1HT	Water	02/01/20 14:08	02/04/20 08:00
2628600033	T1-2HTS	Water	02/01/20 14:16	02/04/20 08:00
2628600034	T1-2HT	Water	02/01/20 14:20	02/04/20 08:00
2628600035	T3-4HTS	Water	02/02/20 13:44	02/04/20 08:00
2628600036	T3-4HT	Water	02/02/20 13:50	02/04/20 08:00
2628600037	T3-3HTS	Water	02/02/20 14:08	02/04/20 08:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Plant McManus SW

Pace Project No.: 2628600

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2628600038	T3-3HT	Water	02/02/20 14:10	02/04/20 08:00
2628600039	T3-2HTS	Water	02/02/20 14:28	02/04/20 08:00
2628600040	T3-2HT	Water	02/02/20 14:34	02/04/20 08:00
2628600041	T3-1HT	Water	02/02/20 14:35	02/04/20 08:00
2628600042	T3-4LT	Water	02/03/20 10:40	02/04/20 08:00
2628600043	T3-3LT	Water	02/03/20 12:12	02/04/20 08:00
2628600044	T3-2LT	Water	02/03/20 13:30	02/04/20 08:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus SW
Pace Project No.: 2628600

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2628600001	MCM-07LT ASHPOND	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600002	MCM-07LT	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600003	MCM-06HT ASHPOND	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600004	MCM-06HT	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600005	MCM-07HT ASHPOND	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600006	MCM-07HT	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600007	MCM-06LT ASHPOND	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600008	MCM-06LT	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600009	MCM-05HT ASHPOND	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600010	MCM-05HT	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600011	MCM-05LT ASHPOND	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600012	MCM-05LT	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600013	DUP-1	EPA 6020B	CSW	3
		EPA 6020B	CSW	3
2628600014	T2-1HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600015	T2-2HTS	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600016	T2-2HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600017	T2-3HTS	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600018	T2-3HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600019	T2-4HTS	EPA 6020B	CSW	2

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Plant McManus SW
Pace Project No.: 2628600

Lab ID	Sample ID	Method	Analysts	Analytes Reported
262860020	T2-4HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860021	T2-4LT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860022	T2-3LT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860023	T2-2LT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860024	T1-1LT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860025	T1-4LT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860026	T1-3LT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860027	T1-2LT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860028	T1-4HTS	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860029	T1-4HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860030	T1-3HTS	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860031	T1-3HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860032	T1-1HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860033	T1-2HTS	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860034	T1-2HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860035	T3-4HTS	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860036	T3-4HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2
262860037	T3-3HTS	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
		EPA 6020B	CSW	2

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SAMPLE ANALYTE COUNT

Project: Plant McManus SW

Pace Project No.: 2628600

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2628600038	T3-3HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600039	T3-2HTS	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600040	T3-2HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600041	T3-1HT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600042	T3-4LT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600043	T3-3LT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2
2628600044	T3-2LT	EPA 6020B	CSW	2
		EPA 6020B	CSW	2

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SUMMARY OF DETECTION

Project: Plant McManus SW

Pace Project No.: 2628600

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628600001	MCM-07LT ASHPOND					
EPA 6020B	Lithium	0.022J	mg/L	0.30	02/06/20 19:16	D3
EPA 6020B	Arsenic, Dissolved	0.0061J	mg/L	0.050	02/12/20 19:51	D3
EPA 6020B	Lithium, Dissolved	0.022J	mg/L	0.30	02/12/20 19:51	D3
2628600002	MCM-07LT					
EPA 6020B	Arsenic	0.022J	mg/L	0.050	02/06/20 19:39	D3
EPA 6020B	Lithium	0.053J	mg/L	0.30	02/06/20 19:39	D3
EPA 6020B	Arsenic, Dissolved	0.022J	mg/L	0.050	02/12/20 19:57	D3
EPA 6020B	Lithium, Dissolved	0.055J	mg/L	0.30	02/12/20 19:57	D3
2628600003	MCM-06HT ASHPOND					
EPA 6020B	Arsenic	0.0045J	mg/L	0.050	02/06/20 19:44	D3
EPA 6020B	Lithium	0.023J	mg/L	0.30	02/06/20 19:44	D3
EPA 6020B	Arsenic, Dissolved	0.0040J	mg/L	0.050	02/12/20 20:03	D3
EPA 6020B	Lithium, Dissolved	0.023J	mg/L	0.30	02/12/20 20:03	D3
2628600004	MCM-06HT					
EPA 6020B	Arsenic	0.46	mg/L	0.050	02/06/20 19:50	
EPA 6020B	Lithium	0.11J	mg/L	0.30	02/06/20 19:50	D3
EPA 6020B	Arsenic, Dissolved	0.25	mg/L	0.050	02/12/20 20:08	
EPA 6020B	Lithium, Dissolved	0.11J	mg/L	0.30	02/12/20 20:08	D3
2628600005	MCM-07HT ASHPOND					
EPA 6020B	Lithium	0.020J	mg/L	0.30	02/06/20 20:07	D3
EPA 6020B	Lithium, Dissolved	0.020J	mg/L	0.30	02/12/20 20:26	D3
2628600006	MCM-07HT					
EPA 6020B	Arsenic	0.022J	mg/L	0.050	02/06/20 20:13	D3
EPA 6020B	Lithium	0.050J	mg/L	0.30	02/06/20 20:13	D3
EPA 6020B	Arsenic, Dissolved	0.023J	mg/L	0.050	02/12/20 20:31	D3
EPA 6020B	Lithium, Dissolved	0.048J	mg/L	0.30	02/12/20 20:31	D3
2628600007	MCM-06LT ASHPOND					
EPA 6020B	Arsenic	0.0047J	mg/L	0.050	02/06/20 20:19	D3
EPA 6020B	Lithium	0.022J	mg/L	0.30	02/06/20 20:19	D3
EPA 6020B	Lithium, Dissolved	0.021J	mg/L	0.30	02/12/20 20:37	D3
2628600008	MCM-06LT					
EPA 6020B	Arsenic	0.50	mg/L	0.050	02/06/20 20:24	
EPA 6020B	Lithium	0.10J	mg/L	0.30	02/06/20 20:24	D3
EPA 6020B	Arsenic, Dissolved	0.50	mg/L	0.050	02/12/20 20:43	
EPA 6020B	Lithium, Dissolved	0.099J	mg/L	0.30	02/12/20 20:43	D3
2628600009	MCM-05HT ASHPOND					
EPA 6020B	Lithium	0.022J	mg/L	0.30	02/06/20 20:30	D3
EPA 6020B	Arsenic, Dissolved	0.0051J	mg/L	0.050	02/12/20 20:48	D3
EPA 6020B	Lithium, Dissolved	0.021J	mg/L	0.30	02/12/20 20:48	D3
2628600010	MCM-05HT					
EPA 6020B	Lithium	0.022J	mg/L	0.30	02/06/20 20:36	D3
EPA 6020B	Arsenic, Dissolved	0.0039J	mg/L	0.050	02/12/20 09:55	B,D3

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW
Pace Project No.: 2628600

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628600010	MCM-05HT					
EPA 6020B	Lithium, Dissolved	0.023J	mg/L	0.30	02/12/20 09:55	D3
2628600011	MCM-05LT ASHPOND					
EPA 6020B	Lithium	0.022J	mg/L	0.30	02/06/20 20:42	D3
EPA 6020B	Arsenic, Dissolved	0.0051J	mg/L	0.050	02/12/20 10:01	B,D3
EPA 6020B	Lithium, Dissolved	0.022J	mg/L	0.30	02/12/20 10:01	D3
2628600012	MCM-05LT					
EPA 6020B	Lithium	0.022J	mg/L	0.30	02/06/20 20:47	D3
EPA 6020B	Arsenic, Dissolved	0.0041J	mg/L	0.050	02/12/20 10:24	B,D3
EPA 6020B	Lithium, Dissolved	0.023J	mg/L	0.30	02/12/20 10:24	D3
2628600013	DUP-1					
EPA 6020B	Arsenic	0.0054J	mg/L	0.050	02/06/20 20:53	D3
EPA 6020B	Lithium	0.082J	mg/L	0.30	02/06/20 20:53	D3
EPA 6020B	Arsenic, Dissolved	0.0078J	mg/L	0.050	02/12/20 10:30	B,D3
EPA 6020B	Lithium, Dissolved	0.081J	mg/L	0.30	02/12/20 10:30	D3
2628600014	T2-1HT					
EPA 6020B	Lithium	0.055J	mg/L	0.30	02/06/20 12:02	D3
EPA 6020B	Lithium, Dissolved	0.060J	mg/L	0.30	02/13/20 14:15	D3
2628600015	T2-2HTS					
EPA 6020B	Lithium	0.071J	mg/L	0.30	02/06/20 12:07	D3
EPA 6020B	Lithium, Dissolved	0.065J	mg/L	0.30	02/13/20 14:20	D3
2628600016	T2-2HT					
EPA 6020B	Lithium	0.10J	mg/L	0.30	02/06/20 12:13	D3
EPA 6020B	Lithium, Dissolved	0.093J	mg/L	0.30	02/13/20 14:26	D3
2628600017	T2-3HTS					
EPA 6020B	Lithium	0.10J	mg/L	0.30	02/06/20 12:19	D3
EPA 6020B	Lithium, Dissolved	0.10J	mg/L	0.30	02/13/20 14:49	D3
2628600018	T2-3HT					
EPA 6020B	Lithium	0.10J	mg/L	0.30	02/06/20 12:24	D3
EPA 6020B	Lithium, Dissolved	0.11J	mg/L	0.30	02/13/20 14:55	D3
2628600019	T2-4HTS					
EPA 6020B	Lithium	0.10J	mg/L	0.30	02/06/20 12:30	D3
EPA 6020B	Lithium, Dissolved	0.10J	mg/L	0.30	02/13/20 15:35	D3
2628600020	T2-4HT					
EPA 6020B	Lithium	0.10J	mg/L	0.30	02/06/20 12:36	D3
EPA 6020B	Lithium, Dissolved	0.11J	mg/L	0.30	02/13/20 15:43	D3
2628600021	T2-4LT					
EPA 6020B	Lithium	0.085J	mg/L	0.30	02/06/20 12:42	D3
EPA 6020B	Lithium, Dissolved	0.086J	mg/L	0.30	02/13/20 15:49	D3
2628600022	T2-3LT					
EPA 6020B	Lithium	0.046J	mg/L	0.30	02/06/20 12:47	D3

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Plant McManus SW
Pace Project No.: 2628600

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628600022	T2-3LT					
EPA 6020B	Lithium, Dissolved	0.049J	mg/L	0.30	02/13/20 15:54	D3
2628600023	T2-2LT					
EPA 6020B	Lithium	0.066J	mg/L	0.30	02/06/20 12:53	D3
EPA 6020B	Lithium, Dissolved	0.063J	mg/L	0.30	02/13/20 16:29	D3
2628600024	T1-1LT					
EPA 6020B	Lithium	0.027J	mg/L	0.30	02/05/20 18:26	
EPA 6020B	Lithium, Dissolved	0.025J	mg/L	0.30	02/13/20 16:35	D3
2628600025	T1-4LT					
EPA 6020B	Lithium	0.095J	mg/L	0.30	02/05/20 18:49	
EPA 6020B	Lithium, Dissolved	0.099J	mg/L	0.30	02/13/20 16:41	D3
2628600026	T1-3LT					
EPA 6020B	Lithium	0.023J	mg/L	0.30	02/05/20 18:55	
EPA 6020B	Lithium, Dissolved	0.025J	mg/L	0.30	02/13/20 16:47	D3
2628600027	T1-2LT					
EPA 6020B	Lithium	0.029J	mg/L	0.30	02/05/20 19:00	
EPA 6020B	Lithium, Dissolved	0.031J	mg/L	0.30	02/13/20 16:52	D3
2628600028	T1-4HTS					
EPA 6020B	Lithium	0.092J	mg/L	0.30	02/05/20 19:06	
EPA 6020B	Lithium, Dissolved	0.10J	mg/L	0.30	02/13/20 16:58	D3
2628600029	T1-4HT					
EPA 6020B	Lithium	0.099J	mg/L	0.30	02/05/20 19:23	
EPA 6020B	Lithium, Dissolved	0.10J	mg/L	0.30	02/13/20 17:15	D3
2628600030	T1-3HTS					
EPA 6020B	Lithium	0.069J	mg/L	0.30	02/05/20 19:29	
EPA 6020B	Lithium, Dissolved	0.091J	mg/L	0.30	02/13/20 17:21	D3
2628600031	T1-3HT					
EPA 6020B	Lithium	0.096J	mg/L	0.30	02/05/20 19:35	
EPA 6020B	Lithium, Dissolved	0.11J	mg/L	0.30	02/13/20 17:27	D3
2628600032	T1-1HT					
EPA 6020B	Lithium	0.039J	mg/L	0.30	02/05/20 19:41	
EPA 6020B	Lithium, Dissolved	0.049J	mg/L	0.30	02/13/20 17:32	D3
2628600033	T1-2HTS					
EPA 6020B	Lithium	0.066J	mg/L	0.30	02/05/20 19:46	
EPA 6020B	Lithium, Dissolved	0.070J	mg/L	0.30	02/13/20 17:38	D3
2628600034	T1-2HT					
EPA 6020B	Lithium	0.10J	mg/L	0.30	02/05/20 19:52	
EPA 6020B	Lithium, Dissolved	0.098J	mg/L	0.30	02/12/20 18:20	D3
2628600035	T3-4HTS					
EPA 6020B	Lithium	0.10J	mg/L	0.30	02/05/20 19:58	

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SUMMARY OF DETECTION

Project: Plant McManus SW

Pace Project No.: 2628600

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2628600035	T3-4HTS					
EPA 6020B	Lithium, Dissolved	0.097J	mg/L	0.30	02/12/20 18:25	D3
2628600036	T3-4HT					
EPA 6020B	Lithium	0.097J	mg/L	0.30	02/05/20 20:03	
EPA 6020B	Lithium, Dissolved	0.094J	mg/L	0.30	02/12/20 18:48	D3
2628600037	T3-3HTS					
EPA 6020B	Lithium	0.087J	mg/L	0.30	02/05/20 20:09	
EPA 6020B	Lithium, Dissolved	0.087J	mg/L	0.30	02/12/20 18:54	D3
2628600038	T3-3HT					
EPA 6020B	Lithium	0.095J	mg/L	0.30	02/05/20 20:15	
EPA 6020B	Lithium, Dissolved	0.095J	mg/L	0.30	02/12/20 19:00	D3
2628600039	T3-2HTS					
EPA 6020B	Lithium	0.081J	mg/L	0.30	02/05/20 20:32	
EPA 6020B	Lithium, Dissolved	0.077J	mg/L	0.30	02/12/20 19:17	D3
2628600040	T3-2HT					
EPA 6020B	Lithium	0.097J	mg/L	0.30	02/05/20 20:38	
EPA 6020B	Lithium, Dissolved	0.093J	mg/L	0.30	02/12/20 19:23	D3
2628600041	T3-1HT					
EPA 6020B	Lithium	0.086J	mg/L	0.30	02/05/20 20:44	
EPA 6020B	Lithium, Dissolved	0.084J	mg/L	0.30	02/12/20 19:28	D3
2628600042	T3-4LT					
EPA 6020B	Lithium	0.076J	mg/L	0.30	02/05/20 20:49	
EPA 6020B	Lithium, Dissolved	0.077J	mg/L	0.30	02/12/20 19:34	D3
2628600043	T3-3LT					
EPA 6020B	Lithium	0.081J	mg/L	0.30	02/05/20 20:55	
EPA 6020B	Lithium, Dissolved	0.078J	mg/L	0.30	02/12/20 19:40	D3
2628600044	T3-2LT					
EPA 6020B	Lithium	0.083J	mg/L	0.30	02/06/20 19:10	D3
EPA 6020B	Lithium, Dissolved	0.087J	mg/L	0.30	02/12/20 19:45	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-07LT ASHPOND		Lab ID: 2628600001		Collected: 02/01/20 09:40		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 19:16	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 19:16	7440-48-4	D3
Lithium	0.022J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 19:16	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0061J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 19:51	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 19:51	7440-48-4	D3
Lithium, Dissolved	0.022J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 19:51	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-07LT		Lab ID: 2628600002		Collected: 02/01/20 10:15		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.022J	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 19:39	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 19:39	7440-48-4	D3
Lithium	0.053J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 19:39	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.022J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 19:57	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 19:57	7440-48-4	D3
Lithium, Dissolved	0.055J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 19:57	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-06HT ASHPOND		Lab ID: 2628600003		Collected: 02/01/20 13:55		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0045J	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 19:44	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 19:44	7440-48-4	D3
Lithium	0.023J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 19:44	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0040J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 20:03	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 20:03	7440-48-4	D3
Lithium, Dissolved	0.023J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 20:03	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-06HT		Lab ID: 2628600004		Collected: 02/01/20 13:55		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.46	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 19:50	7440-38-2	
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 19:50	7440-48-4	D3
Lithium	0.11J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 19:50	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.25	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 20:08	7440-38-2	
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 20:08	7440-48-4	D3
Lithium, Dissolved	0.11J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 20:08	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-07HT ASHPOND		Lab ID: 2628600005		Collected: 02/01/20 14:20		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 20:07	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 20:07	7440-48-4	D3
Lithium	0.020J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 20:07	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 20:26	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 20:26	7440-48-4	D3
Lithium, Dissolved	0.020J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 20:26	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW
 Pace Project No.: 2628600

Sample: MCM-07HT		Lab ID: 2628600006		Collected: 02/01/20 14:20		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.022J	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 20:13	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 20:13	7440-48-4	D3
Lithium	0.050J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 20:13	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.023J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 20:31	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 20:31	7440-48-4	D3
Lithium, Dissolved	0.048J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 20:31	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-06LT ASHPOND Lab ID: 2628600007 Collected: 02/02/20 08:50 Received: 02/04/20 08:00 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Arsenic	0.0047J	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 20:19	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 20:19	7440-48-4	D3
Lithium	0.022J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 20:19	7439-93-2	D3
6020B MET ICPMS, Lab Filtered Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Arsenic, Dissolved	ND	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 20:37	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 20:37	7440-48-4	D3
Lithium, Dissolved	0.021J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 20:37	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-06LT		Lab ID: 2628600008		Collected: 02/02/20 09:00	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic	0.50	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 20:24	7440-38-2		
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 20:24	7440-48-4	D3	
Lithium	0.10J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 20:24	7439-93-2	D3	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Arsenic, Dissolved	0.50	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 20:43	7440-38-2		
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 20:43	7440-48-4	D3	
Lithium, Dissolved	0.099J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 20:43	7439-93-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-05HT ASHPOND		Lab ID: 2628600009		Collected: 02/02/20 14:30		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 20:30	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 20:30	7440-48-4	D3
Lithium	0.022J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 20:30	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0051J	mg/L	0.050	0.0035	10	02/11/20 15:11	02/12/20 20:48	7440-38-2	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 20:48	7440-48-4	D3
Lithium, Dissolved	0.021J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 20:48	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-05HT		Lab ID: 2628600010		Collected: 02/02/20 14:46		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 20:36	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 20:36	7440-48-4	D3
Lithium	0.022J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 20:36	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0039J	mg/L	0.050	0.0035	10	02/11/20 12:56	02/12/20 09:55	7440-38-2	B,D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 12:56	02/12/20 09:55	7440-48-4	D3
Lithium, Dissolved	0.023J	mg/L	0.30	0.0078	10	02/11/20 12:56	02/12/20 09:55	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-05LT ASHPOND		Lab ID: 2628600011		Collected: 02/03/20 09:45		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 20:42	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 20:42	7440-48-4	D3
Lithium	0.022J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 20:42	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0051J	mg/L	0.050	0.0035	10	02/11/20 12:56	02/12/20 10:01	7440-38-2	B,D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 12:56	02/12/20 10:01	7440-48-4	D3
Lithium, Dissolved	0.022J	mg/L	0.30	0.0078	10	02/11/20 12:56	02/12/20 10:01	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: MCM-05LT		Lab ID: 2628600012		Collected: 02/03/20 09:47		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	ND	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 20:47	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 20:47	7440-48-4	D3
Lithium	0.022J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 20:47	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0041J	mg/L	0.050	0.0035	10	02/11/20 12:56	02/12/20 10:24	7440-38-2	B,D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 12:56	02/12/20 10:24	7440-48-4	D3
Lithium, Dissolved	0.023J	mg/L	0.30	0.0078	10	02/11/20 12:56	02/12/20 10:24	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: DUP-1		Lab ID: 2628600013		Collected: 02/03/20 00:00		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	0.0054J	mg/L	0.050	0.0035	10	02/06/20 13:10	02/06/20 20:53	7440-38-2	D3
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 20:53	7440-48-4	D3
Lithium	0.082J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 20:53	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic, Dissolved	0.0078J	mg/L	0.050	0.0035	10	02/11/20 12:56	02/12/20 10:30	7440-38-2	B,D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 12:56	02/12/20 10:30	7440-48-4	D3
Lithium, Dissolved	0.081J	mg/L	0.30	0.0078	10	02/11/20 12:56	02/12/20 10:30	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T2-1HT		Lab ID: 2628600014		Collected: 02/01/20 13:55	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 09:25	02/06/20 12:02	7440-48-4	D3	
Lithium	0.055J	mg/L	0.30	0.0078	10	02/04/20 09:25	02/06/20 12:02	7439-93-2	D3	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 14:15	7440-48-4	D3	
Lithium, Dissolved	0.060J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 14:15	7439-93-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T2-2HTS		Lab ID: 2628600015		Collected: 02/01/20 14:28		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 09:25	02/06/20 12:07	7440-48-4	D3
Lithium	0.071J	mg/L	0.30	0.0078	10	02/04/20 09:25	02/06/20 12:07	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 14:20	7440-48-4	D3
Lithium, Dissolved	0.065J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 14:20	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T2-2HT		Lab ID: 2628600016		Collected: 02/01/20 14:32		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 09:25	02/06/20 12:13	7440-48-4	D3
Lithium	0.10J	mg/L	0.30	0.0078	10	02/04/20 09:25	02/06/20 12:13	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 14:26	7440-48-4	D3
Lithium, Dissolved	0.093J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 14:26	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T2-3HTS		Lab ID: 2628600017		Collected: 02/01/20 14:46	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 09:25	02/06/20 12:19	7440-48-4	D3	
Lithium	0.10J	mg/L	0.30	0.0078	10	02/04/20 09:25	02/06/20 12:19	7439-93-2	D3	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 14:49	7440-48-4	D3	
Lithium, Dissolved	0.10J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 14:49	7439-93-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T2-3HT		Lab ID: 2628600018		Collected: 02/01/20 14:50		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 09:25	02/06/20 12:24	7440-48-4	D3
Lithium	0.10J	mg/L	0.30	0.0078	10	02/04/20 09:25	02/06/20 12:24	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 14:55	7440-48-4	D3
Lithium, Dissolved	0.11J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 14:55	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T2-4HTS		Lab ID: 2628600019		Collected: 02/01/20 15:00		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 09:25	02/06/20 12:30	7440-48-4	D3
Lithium	0.10J	mg/L	0.30	0.0078	10	02/04/20 09:25	02/06/20 12:30	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 15:35	7440-48-4	D3
Lithium, Dissolved	0.10J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 15:35	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T2-4HT		Lab ID: 2628600020		Collected: 02/01/20 15:14		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 09:25	02/06/20 12:36	7440-48-4	D3
Lithium	0.10J	mg/L	0.30	0.0078	10	02/04/20 09:25	02/06/20 12:36	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 15:43	7440-48-4	D3
Lithium, Dissolved	0.11J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 15:43	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T2-4LT		Lab ID: 2628600021		Collected: 02/02/20 09:46		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 09:25	02/06/20 12:42	7440-48-4	D3
Lithium	0.085J	mg/L	0.30	0.0078	10	02/04/20 09:25	02/06/20 12:42	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 15:49	7440-48-4	D3
Lithium, Dissolved	0.086J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 15:49	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T2-3LT		Lab ID: 2628600022		Collected: 02/02/20 11:20		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 09:25	02/06/20 12:47	7440-48-4	D3
Lithium	0.046J	mg/L	0.30	0.0078	10	02/04/20 09:25	02/06/20 12:47	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 15:54	7440-48-4	D3
Lithium, Dissolved	0.049J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 15:54	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T2-2LT		Lab ID: 2628600023		Collected: 02/02/20 11:38		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 09:25	02/06/20 12:53	7440-48-4	D3
Lithium	0.066J	mg/L	0.30	0.0078	10	02/04/20 09:25	02/06/20 12:53	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 16:29	7440-48-4	D3
Lithium, Dissolved	0.063J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 16:29	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-1LT		Lab ID: 2628600024		Collected: 02/01/20 09:50		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 18:26	7440-48-4	
Lithium	0.027J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 18:26	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 16:35	7440-48-4	D3
Lithium, Dissolved	0.025J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 16:35	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-4LT		Lab ID: 2628600025		Collected: 02/01/20 09:56		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 18:49	7440-48-4	
Lithium	0.095J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 18:49	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 16:41	7440-48-4	D3
Lithium, Dissolved	0.099J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 16:41	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-3LT		Lab ID: 2628600026		Collected: 02/01/20 10:06		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 18:55	7440-48-4	
Lithium	0.023J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 18:55	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 16:47	7440-48-4	D3
Lithium, Dissolved	0.025J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 16:47	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-2LT		Lab ID: 2628600027		Collected: 02/01/20 10:16		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 19:00	7440-48-4	
Lithium	0.029J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 19:00	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 16:52	7440-48-4	D3
Lithium, Dissolved	0.031J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 16:52	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-4HTS		Lab ID: 2628600028		Collected: 02/01/20 13:34		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 19:06	7440-48-4	
Lithium	0.092J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 19:06	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 16:58	7440-48-4	D3
Lithium, Dissolved	0.10J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 16:58	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-4HT		Lab ID: 2628600029		Collected: 02/01/20 13:40		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 19:23	7440-48-4	
Lithium	0.099J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 19:23	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 17:15	7440-48-4	D3
Lithium, Dissolved	0.10J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 17:15	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-3HTS		Lab ID: 2628600030		Collected: 02/01/20 13:52		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 19:29	7440-48-4	
Lithium	0.069J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 19:29	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 17:21	7440-48-4	D3
Lithium, Dissolved	0.091J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 17:21	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-3HT		Lab ID: 2628600031		Collected: 02/01/20 13:56		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 19:35	7440-48-4	
Lithium	0.096J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 19:35	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 17:27	7440-48-4	D3
Lithium, Dissolved	0.11J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 17:27	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-1HT		Lab ID: 2628600032		Collected: 02/01/20 14:08		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 19:41	7440-48-4	
Lithium	0.039J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 19:41	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 17:32	7440-48-4	D3
Lithium, Dissolved	0.049J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 17:32	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-2HTS		Lab ID: 2628600033		Collected: 02/01/20 14:16		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 19:46	7440-48-4	
Lithium	0.066J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 19:46	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/13/20 17:38	7440-48-4	D3
Lithium, Dissolved	0.070J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/13/20 17:38	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T1-2HT		Lab ID: 2628600034		Collected: 02/01/20 14:20	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 19:52	7440-48-4		
Lithium	0.10J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 19:52	7439-93-2		
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 18:20	7440-48-4	D3	
Lithium, Dissolved	0.098J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 18:20	7439-93-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T3-4HTS		Lab ID: 2628600035		Collected: 02/02/20 13:44		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 19:58	7440-48-4	
Lithium	0.10J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 19:58	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 18:25	7440-48-4	D3
Lithium, Dissolved	0.097J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 18:25	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T3-4HT		Lab ID: 2628600036		Collected: 02/02/20 13:50		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 20:03	7440-48-4	
Lithium	0.097J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 20:03	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 18:48	7440-48-4	D3
Lithium, Dissolved	0.094J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 18:48	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T3-3HTS		Lab ID: 2628600037		Collected: 02/02/20 14:08		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 20:09	7440-48-4	
Lithium	0.087J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 20:09	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 18:54	7440-48-4	D3
Lithium, Dissolved	0.087J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 18:54	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T3-3HT		Lab ID: 2628600038		Collected: 02/02/20 14:10	Received: 02/04/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 20:15	7440-48-4		
Lithium	0.095J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 20:15	7439-93-2		
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 19:00	7440-48-4	D3	
Lithium, Dissolved	0.095J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 19:00	7439-93-2	D3	

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T3-2HTS		Lab ID: 2628600039		Collected: 02/02/20 14:28		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 20:32	7440-48-4	
Lithium	0.081J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 20:32	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 19:17	7440-48-4	D3
Lithium, Dissolved	0.077J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 19:17	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T3-2HT		Lab ID: 2628600040		Collected: 02/02/20 14:34		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 20:38	7440-48-4	
Lithium	0.097J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 20:38	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 19:23	7440-48-4	D3
Lithium, Dissolved	0.093J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 19:23	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T3-1HT		Lab ID: 2628600041		Collected: 02/02/20 14:35		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 20:44	7440-48-4	
Lithium	0.086J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 20:44	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 19:28	7440-48-4	D3
Lithium, Dissolved	0.084J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 19:28	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T3-4LT		Lab ID: 2628600042		Collected: 02/03/20 10:40		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 20:49	7440-48-4	
Lithium	0.076J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 20:49	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 19:34	7440-48-4	D3
Lithium, Dissolved	0.077J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 19:34	7439-93-2	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T3-3LT		Lab ID: 2628600043		Collected: 02/03/20 12:12		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/04/20 21:50	02/05/20 20:55	7440-48-4	
Lithium	0.081J	mg/L	0.30	0.0078	10	02/04/20 21:50	02/05/20 20:55	7439-93-2	
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 19:40	7440-48-4	D3
Lithium, Dissolved	0.078J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 19:40	7439-93-2	D3

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ANALYTICAL RESULTS

Project: Plant McManus SW

Pace Project No.: 2628600

Sample: T3-2LT		Lab ID: 2628600044		Collected: 02/03/20 13:30		Received: 02/04/20 08:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt	ND	mg/L	0.050	0.0030	10	02/06/20 13:10	02/06/20 19:10	7440-48-4	D3
Lithium	0.083J	mg/L	0.30	0.0078	10	02/06/20 13:10	02/06/20 19:10	7439-93-2	D3
6020B MET ICPMS, Lab Filtered		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Cobalt, Dissolved	ND	mg/L	0.050	0.0030	10	02/11/20 15:11	02/12/20 19:45	7440-48-4	D3
Lithium, Dissolved	0.087J	mg/L	0.30	0.0078	10	02/11/20 15:11	02/12/20 19:45	7439-93-2	D3

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW
Pace Project No.: 2628600

QC Batch: 42836 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2628600024, 2628600025, 2628600026, 2628600027, 2628600028, 2628600029, 2628600030, 2628600031, 2628600032, 2628600033, 2628600034, 2628600035, 2628600036, 2628600037, 2628600038, 2628600039, 2628600040, 2628600041, 2628600042, 2628600043

METHOD BLANK: 195730 Matrix: Water
Associated Lab Samples: 2628600024, 2628600025, 2628600026, 2628600027, 2628600028, 2628600029, 2628600030, 2628600031, 2628600032, 2628600033, 2628600034, 2628600035, 2628600036, 2628600037, 2628600038, 2628600039, 2628600040, 2628600041, 2628600042, 2628600043

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt	mg/L	ND	0.0050	0.00030	02/05/20 18:15	
Lithium	mg/L	ND	0.030	0.00078	02/05/20 18:15	

LABORATORY CONTROL SAMPLE: 195731

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 195732 195733

Parameter	Units	2628598001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	ND	0.1	0.1	0.10	0.096	101	96	75-125	5	20	
Lithium	mg/L	0.027J	0.1	0.1	0.13J	0.13J	103	99	75-125		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant McManus SW
Pace Project No.: 2628600

QC Batch: 42953 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2628600001, 2628600002, 2628600003, 2628600004, 2628600005, 2628600006, 2628600007, 2628600008, 2628600009, 2628600010, 2628600011, 2628600012, 2628600013, 2628600044

METHOD BLANK: 196325 Matrix: Water
Associated Lab Samples: 2628600001, 2628600002, 2628600003, 2628600004, 2628600005, 2628600006, 2628600007, 2628600008, 2628600009, 2628600010, 2628600011, 2628600012, 2628600013, 2628600044

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	02/06/20 18:59	
Cobalt	mg/L	ND	0.0050	0.00030	02/06/20 18:59	
Lithium	mg/L	ND	0.030	0.00078	02/06/20 18:59	

LABORATORY CONTROL SAMPLE: 196326

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.10	102	80-120	
Cobalt	mg/L	0.1	0.11	106	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 196330 196331

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2628600001	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	0.0061J	0.1	0.1	0.11	0.11	110	107	75-125	3	20
Cobalt	mg/L	ND	0.1	0.1	0.11	0.10	105	104	75-125	0	20
Lithium	mg/L	0.022J	0.1	0.1	0.13J	0.12J	103	102	75-125		20

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QUALITY CONTROL DATA

Project: Plant McManus SW

Pace Project No.: 2628600

QC Batch: 43169 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 2628600010, 2628600011, 2628600012, 2628600013

METHOD BLANK: 197290 Matrix: Water
Associated Lab Samples: 2628600010, 2628600011, 2628600012, 2628600013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	0.00035	02/12/20 09:44	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00030	02/12/20 09:44	
Lithium, Dissolved	mg/L	ND	0.030	0.00078	02/12/20 09:44	

LABORATORY CONTROL SAMPLE: 197291

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.1	0.11	106	80-120	
Cobalt, Dissolved	mg/L	0.1	0.10	101	80-120	
Lithium, Dissolved	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 197292 197293

Parameter	Units	2628600011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	0.0051J	0.1	0.1	0.11	0.11	102	104	75-125	1	20	
Cobalt, Dissolved	mg/L	ND	0.1	0.1	0.10	0.10	100	102	75-125	2	20	
Lithium, Dissolved	mg/L	0.022J	0.1	0.1	0.13J	0.13J	105	105	75-125		20	

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QUALITY CONTROL DATA

Project: Plant McManus SW
Pace Project No.: 2628600

QC Batch: 43170 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 2628600014, 2628600015, 2628600016, 2628600017, 2628600018, 2628600019, 2628600020, 2628600021, 2628600022, 2628600023, 2628600024, 2628600025, 2628600026, 2628600027, 2628600028, 2628600029, 2628600030, 2628600031, 2628600032, 2628600033

METHOD BLANK: 197294 Matrix: Water
Associated Lab Samples: 2628600014, 2628600015, 2628600016, 2628600017, 2628600018, 2628600019, 2628600020, 2628600021, 2628600022, 2628600023, 2628600024, 2628600025, 2628600026, 2628600027, 2628600028, 2628600029, 2628600030, 2628600031, 2628600032, 2628600033

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cobalt, Dissolved	mg/L	ND	0.0050	0.00030	02/13/20 14:03	
Lithium, Dissolved	mg/L	ND	0.030	0.00078	02/13/20 14:03	

LABORATORY CONTROL SAMPLE: 197295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt, Dissolved	mg/L	0.1	0.11	105	80-120	
Lithium, Dissolved	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 197296 197297

Parameter	Units	2628595003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt, Dissolved	mg/L	ND	0.1	0.1	0.11	0.12	114	116	75-125	1	20	
Lithium, Dissolved	mg/L	0.093J	0.1	0.1	0.21J	0.22J	118	129	75-125		20 M6	

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QUALITY CONTROL DATA

Project: Plant McManus SW
Pace Project No.: 2628600

QC Batch: 43171 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 2628600001, 2628600002, 2628600003, 2628600004, 2628600005, 2628600006, 2628600007, 2628600008, 2628600009, 2628600034, 2628600035, 2628600036, 2628600037, 2628600038, 2628600039, 2628600040, 2628600041, 2628600042, 2628600043, 2628600044

METHOD BLANK: 197298 Matrix: Water
Associated Lab Samples: 2628600001, 2628600002, 2628600003, 2628600004, 2628600005, 2628600006, 2628600007, 2628600008, 2628600009, 2628600034, 2628600035, 2628600036, 2628600037, 2628600038, 2628600039, 2628600040, 2628600041, 2628600042, 2628600043, 2628600044

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic, Dissolved	mg/L	ND	0.0050	0.00035	02/12/20 18:08	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00030	02/12/20 18:08	
Lithium, Dissolved	mg/L	ND	0.030	0.00078	02/12/20 18:08	

LABORATORY CONTROL SAMPLE: 197299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	mg/L	0.1	0.10	101	80-120	
Cobalt, Dissolved	mg/L	0.1	0.10	105	80-120	
Lithium, Dissolved	mg/L	0.1	0.10	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 197300 197301

Parameter	Units	2628599001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	0.0065J	0.1	0.1	0.12	0.11	111	109	75-125	2	20	
Cobalt, Dissolved	mg/L	ND	0.1	0.1	0.10	0.11	101	105	75-125	3	20	
Lithium, Dissolved	mg/L	0.097J	0.1	0.1	0.20J	0.20J	99	99	75-125		20	

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QUALIFIERS

Project: Plant McManus SW
Pace Project No.: 2628600

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus SW
Pace Project No.: 2628600

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628600001	MCM-07LT ASHPOND	EPA 3005A	42953	EPA 6020B	42956
2628600002	MCM-07LT	EPA 3005A	42953	EPA 6020B	42956
2628600003	MCM-06HT ASHPOND	EPA 3005A	42953	EPA 6020B	42956
2628600004	MCM-06HT	EPA 3005A	42953	EPA 6020B	42956
2628600005	MCM-07HT ASHPOND	EPA 3005A	42953	EPA 6020B	42956
2628600006	MCM-07HT	EPA 3005A	42953	EPA 6020B	42956
2628600007	MCM-06LT ASHPOND	EPA 3005A	42953	EPA 6020B	42956
2628600008	MCM-06LT	EPA 3005A	42953	EPA 6020B	42956
2628600009	MCM-05HT ASHPOND	EPA 3005A	42953	EPA 6020B	42956
2628600010	MCM-05HT	EPA 3005A	42953	EPA 6020B	42956
2628600011	MCM-05LT ASHPOND	EPA 3005A	42953	EPA 6020B	42956
2628600012	MCM-05LT	EPA 3005A	42953	EPA 6020B	42956
2628600013	DUP-1	EPA 3005A	42953	EPA 6020B	42956
2628600014	T2-1HT	EPA 3005A	42781	EPA 6020B	42798
2628600015	T2-2HTS	EPA 3005A	42781	EPA 6020B	42798
2628600016	T2-2HT	EPA 3005A	42781	EPA 6020B	42798
2628600017	T2-3HTS	EPA 3005A	42781	EPA 6020B	42798
2628600018	T2-3HT	EPA 3005A	42781	EPA 6020B	42798
2628600019	T2-4HTS	EPA 3005A	42781	EPA 6020B	42798
2628600020	T2-4HT	EPA 3005A	42781	EPA 6020B	42798
2628600021	T2-4LT	EPA 3005A	42781	EPA 6020B	42798
2628600022	T2-3LT	EPA 3005A	42781	EPA 6020B	42798
2628600023	T2-2LT	EPA 3005A	42781	EPA 6020B	42798
2628600024	T1-1LT	EPA 3005A	42836	EPA 6020B	42909
2628600025	T1-4LT	EPA 3005A	42836	EPA 6020B	42909
2628600026	T1-3LT	EPA 3005A	42836	EPA 6020B	42909
2628600027	T1-2LT	EPA 3005A	42836	EPA 6020B	42909
2628600028	T1-4HTS	EPA 3005A	42836	EPA 6020B	42909
2628600029	T1-4HT	EPA 3005A	42836	EPA 6020B	42909
2628600030	T1-3HTS	EPA 3005A	42836	EPA 6020B	42909
2628600031	T1-3HT	EPA 3005A	42836	EPA 6020B	42909
2628600032	T1-1HT	EPA 3005A	42836	EPA 6020B	42909
2628600033	T1-2HTS	EPA 3005A	42836	EPA 6020B	42909
2628600034	T1-2HT	EPA 3005A	42836	EPA 6020B	42909
2628600035	T3-4HTS	EPA 3005A	42836	EPA 6020B	42909
2628600036	T3-4HT	EPA 3005A	42836	EPA 6020B	42909
2628600037	T3-3HTS	EPA 3005A	42836	EPA 6020B	42909
2628600038	T3-3HT	EPA 3005A	42836	EPA 6020B	42909
2628600039	T3-2HTS	EPA 3005A	42836	EPA 6020B	42909
2628600040	T3-2HT	EPA 3005A	42836	EPA 6020B	42909
2628600041	T3-1HT	EPA 3005A	42836	EPA 6020B	42909
2628600042	T3-4LT	EPA 3005A	42836	EPA 6020B	42909
2628600043	T3-3LT	EPA 3005A	42836	EPA 6020B	42909
2628600044	T3-2LT	EPA 3005A	42953	EPA 6020B	42956
2628600001	MCM-07LT ASHPOND	EPA 3005A	43171	EPA 6020B	43192
2628600002	MCM-07LT	EPA 3005A	43171	EPA 6020B	43192
2628600003	MCM-06HT ASHPOND	EPA 3005A	43171	EPA 6020B	43192

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus SW
Pace Project No.: 2628600

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2628600004	MCM-06HT	EPA 3005A	43171	EPA 6020B	43192
2628600005	MCM-07HT ASHPOND	EPA 3005A	43171	EPA 6020B	43192
2628600006	MCM-07HT	EPA 3005A	43171	EPA 6020B	43192
2628600007	MCM-06LT ASHPOND	EPA 3005A	43171	EPA 6020B	43192
2628600008	MCM-06LT	EPA 3005A	43171	EPA 6020B	43192
2628600009	MCM-05HT ASHPOND	EPA 3005A	43171	EPA 6020B	43192
2628600010	MCM-05HT	EPA 3005A	43169	EPA 6020B	43190
2628600011	MCM-05LT ASHPOND	EPA 3005A	43169	EPA 6020B	43190
2628600012	MCM-05LT	EPA 3005A	43169	EPA 6020B	43190
2628600013	DUP-1	EPA 3005A	43169	EPA 6020B	43190
2628600014	T2-1HT	EPA 3005A	43170	EPA 6020B	43193
2628600015	T2-2HTS	EPA 3005A	43170	EPA 6020B	43193
2628600016	T2-2HT	EPA 3005A	43170	EPA 6020B	43193
2628600017	T2-3HTS	EPA 3005A	43170	EPA 6020B	43193
2628600018	T2-3HT	EPA 3005A	43170	EPA 6020B	43193
2628600019	T2-4HTS	EPA 3005A	43170	EPA 6020B	43193
2628600020	T2-4HT	EPA 3005A	43170	EPA 6020B	43193
2628600021	T2-4LT	EPA 3005A	43170	EPA 6020B	43193
2628600022	T2-3LT	EPA 3005A	43170	EPA 6020B	43193
2628600023	T2-2LT	EPA 3005A	43170	EPA 6020B	43193
2628600024	T1-1LT	EPA 3005A	43170	EPA 6020B	43193
2628600025	T1-4LT	EPA 3005A	43170	EPA 6020B	43193
2628600026	T1-3LT	EPA 3005A	43170	EPA 6020B	43193
2628600027	T1-2LT	EPA 3005A	43170	EPA 6020B	43193
2628600028	T1-4HTS	EPA 3005A	43170	EPA 6020B	43193
2628600029	T1-4HT	EPA 3005A	43170	EPA 6020B	43193
2628600030	T1-3HTS	EPA 3005A	43170	EPA 6020B	43193
2628600031	T1-3HT	EPA 3005A	43170	EPA 6020B	43193
2628600032	T1-1HT	EPA 3005A	43170	EPA 6020B	43193
2628600033	T1-2HTS	EPA 3005A	43170	EPA 6020B	43193
2628600034	T1-2HT	EPA 3005A	43171	EPA 6020B	43192
2628600035	T3-4HTS	EPA 3005A	43171	EPA 6020B	43192
2628600036	T3-4HT	EPA 3005A	43171	EPA 6020B	43192
2628600037	T3-3HTS	EPA 3005A	43171	EPA 6020B	43192
2628600038	T3-3HT	EPA 3005A	43171	EPA 6020B	43192
2628600039	T3-2HTS	EPA 3005A	43171	EPA 6020B	43192
2628600040	T3-2HT	EPA 3005A	43171	EPA 6020B	43192
2628600041	T3-1HT	EPA 3005A	43171	EPA 6020B	43192
2628600042	T3-4LT	EPA 3005A	43171	EPA 6020B	43192
2628600043	T3-3LT	EPA 3005A	43171	EPA 6020B	43192
2628600044	T3-2LT	EPA 3005A	43171	EPA 6020B	43192

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

Sample Condition Upon Receipt

Face Analytical

Client Name: Georgia Power MO#: 2628600

PM: KH Due Date: 02/11/20 CLIENT: 26-GA Power

Tracking #: _____

Courier: Fed Ex UPS USPS Client Commercial Face Other

Custody Seal on Cooler/Box Present: Yes No

Packing Material: Bubble Wrap Bubble Bags None Other ziplock bags

Type of Ice: Wet Blue None

Thermometer Used: Yes No

Biological Tissue is Frozen: Yes No

Cooler Temperature: 4.0 Temp should be above freezing to 6°C

Comments: Date and initials of person examining contents: KH 2/11/20

Chain of Custody Present: Yes No

Chain of Custody Filled Out: Yes No

Chain of Custody Relinquished: Yes No

Sampler Name & Signature on COC: Yes No

Samples Arrived within Hold Time: Yes No

Short Hold Time Analysis (<72hr): Yes No

Rush Turn Around Time Requested: Yes No

Sufficient Volume: Yes No

Correct Containers Used: Yes No

-Face Containers Used: Yes No

Containers Intact: Yes No

Filtered volume received for Dissolved tests: Yes No

Sample Labels match COC: Yes No

-Includes date/time/D/Analysis Matrix: Yes No

All containers needing preservation have been checked: Yes No

All containers needing preservation are found to be in compliance with EPA recommendation: Yes No

Exceptions: VOA, cotton, TOC, O&G, M-DRO (water): Yes No

Samples checked for dechlorination: Yes No

Headspace in VOA Vials (>6mm): Yes No

Trip Blank Present: Yes No

Trip Blank Custody Seals Present: Yes No

Face Trip Blank Lot # (if purchased): _____

Client Notification/Resolution: _____

Person Contacted: _____

Comments/Resolution: _____

Field Data Required? Y / N

Date/Time: _____

Project Manager Review: _____

Date: _____

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

APPENDIX C

Resolute Summary of Groundwater Analytical Data – July 2020



Table 5
Summary of Groundwater Analytical Data
Plant McManus
Brunswick, GA

List	Parameter	Well ID & Sample Date							
		MCM-01	MCM-01	MCM-01 resample	MCM-01	MCM-02	MCM-02	MCM-02 resample	MCM-02
		8/27/2019	10/16/2019	11/20/2019	3/26/2020	8/28/2019	10/16/2019	11/19/2019	3/27/2020
APPENDIX III	Boron	--	ND (0.036 J)	--	ND (0.064 J)	--	0.085	--	ND (0.17 J)
	Calcium	--	13.6	--	10.1	--	4.9	--	4.9
	Chloride	--	21.4	--	23.0	--	33.1	--	32.9
	Fluoride	ND	ND (0.046 J)	--	ND	ND	ND (0.044 J)	--	ND
	pH ²	5.58	5.72	5.77	5.45	4.99	4.98	5.11	5.12
	Sulfate	--	31.9	--	36.2	--	24.4	--	28.6
	TDS	--	104	--	114	--	96.0	--	119
APPENDIX IV	Antimony	ND	ND	--	ND	ND	ND	--	ND
	Arsenic	0.0079	0.010	0.0064	0.0069	ND	ND (0.0030 J)	ND (0.00057 J)	ND
	Barium	0.077	0.074	--	0.070	0.10	0.10	--	0.095
	Beryllium	ND (0.000090 J)	ND	--	ND	ND (0.00011 J)	ND (0.00013 J)	--	ND
	Cadmium	ND	--	--	ND	ND	--	--	ND
	Chromium	ND (0.00079 J)	ND	--	ND	ND (0.0035 J)	ND	--	ND
	Cobalt	ND	ND	--	ND	ND (0.00042 J)	ND (0.00037 J)	--	ND
	Fluoride	ND	ND (0.046 J)	--	ND	ND	ND (0.044 J)	--	ND
	Lead	ND	ND	--	ND	ND	ND	--	ND
	Lithium	ND	ND	--	ND	ND	ND	--	ND
	Mercury	ND	--	--	ND	ND	--	--	ND
	Molybdenum	ND	ND	--	ND	ND	ND	--	ND
	Radium	1.20 U	1.40 U	--	1.15U	0.679 U	0.422 U	--	0.838U
	Selenium	ND	ND	--	ND	ND	ND	--	ND
	Thallium	ND	ND	--	ND	ND	ND	--	ND

Notes:

Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L)

ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL)

ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number

TDS indicates total dissolved solids

U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated

Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring

-- indicates the parameter was not analyzed

Table 5
Summary of Groundwater Analytical Data
Plant McManus
Brunswick, GA

List	Parameter	Well ID & Sample Date							
		MCM-04	MCM-04	MCM-04 resample	MCM-04	MCM-05	MCM-05	MCM-05 resample	MCM-05
		8/27/2019	10/15/2019	11/20/2019	3/28/2020	8/28/2019	10/16/2019	11/20/2019	3/28/2020
APPENDIX III	Boron	--	0.068	--	ND (0.067 J)	--	0.49	0.53	ND (0.28 J)
	Calcium	--	15.5	--	15.5	--	55.2	55.8	25.8
	Chloride	--	46.0	--	71.4	--	413	1480	693
	Fluoride	ND	ND (0.095 J)	--	ND	0.36	0.41	0.34	0.34
	pH ²	5.05	4.89	5.03	5.27	6.69	6.64	6.58	6.6
	Sulfate	--	105	--	86.6	--	158	132	63.8
	TDS	--	237	--	284	--	2860	2640	1470
APPENDIX IV	Antimony	ND	ND	--	ND	ND	ND	--	ND
	Arsenic	0.0072	ND (0.0038 J)	--	ND (0.0034 J)	ND (0.0019 J)	ND (0.0047 J)	--	ND
	Barium	0.083	0.082	--	0.039	0.011	0.012	--	ND (0.0041 J)
	Beryllium	ND (0.00032 J)	ND (0.00035 J)	--	ND	ND	ND	--	ND
	Cadmium	ND	--	--	ND	ND	--	--	ND
	Chromium	ND (0.0018 J)	ND (0.0012 J)	--	ND	ND (0.00047 J)	ND (0.00057 J)	--	ND
	Cobalt	0.0078	0.0085	0.0090	ND (0.0041 J)	ND	ND	--	ND
	Fluoride	ND	ND (0.095 J)	--	ND	0.36	0.41	0.34	0.34
	Lead	ND	ND	--	ND	ND	ND	--	ND
	Lithium	ND (0.0020 J)	ND (0.0019 J)	--	ND	ND (0.023 J)	ND (0.021 J)	--	ND (0.014 J)
	Mercury	ND	--	--	ND	ND	--	--	ND
	Molybdenum	ND	ND	--	ND	ND	ND	--	ND
	Radium	4.40	4.92	--	4.16	1.67	1.92	--	1.44U
	Selenium	ND	ND	--	ND	ND	ND	--	ND
	Thallium	ND	ND	--	ND	ND	ND	--	ND

Notes:

Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L)

ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL)

ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number

TDS indicates total dissolved solids

U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated

Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring

-- indicates the parameter was not analyzed

Table 5
Summary of Groundwater Analytical Data
Plant McManus
Brunswick, GA

List	Parameter	Well ID & Sample Date						
		MCM-06	MCM-06	MCM-06	MCM-07	MCM-07	MCM-07 resample	MCM-07
		8/28/2019	10/17/2019	3/28/2020	8/28/2019	10/17/2019	11/20/2019	3/28/2020
APPENDIX III	Boron	--	1.30	0.95	--	1.1	1.3	0.79
	Calcium	--	309	286	--	260	308	286
	Chloride	--	9930	9190	--	8210	9810	9070
	Fluoride	ND	ND	ND	ND	ND	ND	ND
	pH ²	6.87	6.86	6.8	6.35	6.40	6.27	6.35
	Sulfate	--	507	701	--	1230	1550	1090
	TDS	--	16100	18800	--	13200	16700	18300
APPENDIX IV	Antimony	ND (0.00098 J)	ND (0.00090 J)	ND (0.0029 J)	ND	ND	--	ND
	Arsenic	0.50	0.34	0.30	0.011	ND (0.0046 J)	--	0.012
	Barium	0.13	0.13	0.12	0.40	0.35	--	0.11
	Beryllium	ND	ND	ND	ND	ND (0.000078 J)	--	ND
	Cadmium	ND	--	ND	ND	--	--	ND
	Chromium	ND (0.00085 J)	ND (0.0015 J)	ND	ND (0.0024 J)	ND (0.0019 J)	--	ND
	Cobalt	ND	ND	ND	ND	ND	--	ND
	Fluoride	ND	ND	ND	ND	ND	ND	ND
	Lead	ND	ND (0.00012 J)	ND	ND (0.00010 J)	ND	--	ND
	Lithium	0.13	0.12	0.064	0.12	0.096	0.12	ND (0.027 J)
	Mercury	ND	--	ND	ND	--	--	ND
	Molybdenum	ND (0.0017 J)	ND (0.0017 J)	ND	ND	ND	--	ND
	Radium	6.86	7.85	11	8.73	7.97	9.80	11.7
	Selenium	ND (0.0014 J)	ND (0.0066 J)	ND	ND (0.0019 J)	ND (0.0049 J)	--	ND
Thallium	ND	ND (0.000076 J)	ND	ND	ND	--	ND	

Notes:

Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L)

ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL)

ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number

TDS indicates total dissolved solids

U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated

Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring

-- indicates the parameter was not analyzed

Table 5
Summary of Groundwater Analytical Data
Plant McManus
Brunswick, GA

List	Parameter	Well ID & Sample Date					
		MCM-08	MCM-08	MCM-08 resample	MCM-11	MCM-11	MCM-11
		8/28/2019	10/16/2019	11/19/2019	8/28/2019	10/16/2019	3/27/2020
APPENDIX III	Boron	--	0.39	--	--	ND (0.032 J)	ND (0.058 J)
	Calcium	--	53.0	--	--	2.2	3.3
	Chloride	--	2150	--	--	12.2	14.5
	Fluoride	ND	ND (0.10 J)	--	ND (0.068 J)	ND (0.10 J)	ND (0.066 J)
	pH ²	5.11	5.23	5.29	4.87	5.05	5.09
	Sulfate	--	423	--	--	17.4	23.4
	TDS	--	4070	--	--	82.0	87.0
APPENDIX IV	Antimony	ND	ND	--	ND	ND	ND
	Arsenic	0.023	0.024	--	ND (0.0050 J)	0.0054	ND (0.0034 J)
	Barium	0.52	0.54	--	0.035	0.036	0.039
	Beryllium	ND (0.00061 J)	ND (0.00059 J)	--	ND (0.000084 J)	ND (0.000090 J)	ND
	Cadmium	ND	--	--	ND	--	ND
	Chromium	ND (0.0095 J)	0.010	--	ND (0.00053 J)	ND (0.00072 J)	ND
	Cobalt	0.0061	0.0063	ND (0.0062 J)	ND	ND	ND
	Fluoride	ND	ND (0.10 J)	--	ND (0.068 J)	ND (0.10 J)	ND (0.066 J)
	Lead	ND	ND	--	ND	ND	ND
	Lithium	ND (0.0031 J)	ND (0.0027 J)	--	ND (0.00082 J)	ND	ND
	Mercury	ND	--	--	ND	--	ND
	Molybdenum	ND (0.0026 J)	ND (0.0026 J)	--	ND	ND	ND
	Radium	20.6	25.3	--	0.434 U	0.923 U	0.609U
	Selenium	ND (0.0048 J)	ND (0.0043 J)	--	ND	ND	ND
	Thallium	ND	ND	--	ND	ND	ND

Notes:

Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L)

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TDS indicates total dissolved solids

U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated

Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring

-- indicates the parameter was not analyzed

Table 5
Summary of Groundwater Analytical Data
Plant McManus
Brunswick, GA

List	Parameter	Well ID & Sample Date						
		MCM-12	MCM-12	MCM-12	MCM-14	MCM-14	MCM-14 resample	MCM-14
		8/27/2019	10/15/2019	3/27/2020	8/26/2019	10/15/2019	11/21/2019	3/27/2020
APPENDIX III	Boron	--	1.1	1.5	--	1.0	1.0	1.3
	Calcium	--	7.9	8.3	--	321	305	286
	Chloride	--	744	675	--	9050	8330	7680
	Fluoride	1.1	1.0	1.1	ND	ND	ND	ND
	pH ²	6.24	6.19	6.33	6.62	6.58	6.67	6.59
	Sulfate	--	ND (0.54 J)	ND	--	ND	1070	899
	TDS	--	1730	1970	--	15400	15800	16400
APPENDIX IV	Antimony	ND	ND	ND	ND (0.00040 J)	ND	--	ND
	Arsenic	ND (0.0011 J)	ND (0.0024 J)	ND	ND (0.0022 J)	0.0067	--	ND
	Barium	0.14	0.14	0.12	0.12	0.12	--	0.13
	Beryllium	ND (0.00090 J)	ND (0.00079 J)	ND	ND (0.00010 J)	ND	--	ND
	Cadmium	ND	--	ND	ND	--	--	ND
	Chromium	ND (0.0056 J)	ND (0.0057 J)	ND	ND (0.00071 J)	ND (0.00076 J)	--	ND
	Cobalt	ND (0.00070 J)	ND (0.00054 J)	ND	ND	ND	--	ND
	Fluoride	1.1	1.0	1.1	ND	ND	ND	ND
	Lead	ND (0.00022 J)	ND (0.000056 J)	ND	ND	ND	--	ND
	Lithium	ND (0.012 J)	ND (0.012 J)	ND	0.059	ND (0.056 J)	0.052	0.052
	Mercury	ND	--	ND	ND	--	--	ND
	Molybdenum	ND	ND	ND	ND	ND	--	ND
	Radium	2.91	3.28	2.33	7.68	8.70	7.34	9.63
	Selenium	ND (0.0019 J)	ND	ND	ND (0.0025 J)	ND (0.0030 J)	--	ND
	Thallium	ND	ND	ND	ND	ND	--	ND

Notes:

Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L)

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ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number

TDS indicates total dissolved solids

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Table 5
Summary of Groundwater Analytical Data
Plant McManus
Brunswick, GA

List	Parameter	Well ID & Sample Date					
		MCM-15	MCM-15	MCM-15	MCM-16	MCM-16	MCM-16
		8/27/2019	10/15/2019	3/27/2020	8/27/2019	10/16/2019	3/27/2020
APPENDIX III	Boron	--	0.046	ND (0.076 J)	--	0.051	0.088 J
	Calcium	--	6.7	5.9	--	4.8	5.4
	Chloride	--	17.1	14.1	--	20.0	23.6
	Fluoride	ND	ND (0.14 J)	ND	ND	ND (0.044 J)	ND
	pH ²	5.35	5.32	5.30	4.88	4.89	5.12
	Sulfate	--	17.9	14.6	--	28.5	31.2
	TDS	--	107	110	--	95.0	110
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND
	Arsenic	ND (0.0041 J)	ND (0.0038 J)	ND (0.0018 J)	ND (0.0019 J)	ND (0.0010 J)	ND
	Barium	0.048	0.041	0.041	0.13	0.13	0.13
	Beryllium	ND (0.00042 J)	ND (0.00034 J)	ND	ND (0.00021 J)	ND (0.00014 J)	ND
	Cadmium	ND	--	ND	ND	--	ND
	Chromium	ND (0.0026 J)	ND (0.0026 J)	ND	ND (0.00043 J)	ND	ND
	Cobalt	ND	ND	ND	ND (0.00030 J)	ND	ND
	Fluoride	ND	ND (0.14 J)	ND	ND	ND (0.044 J)	ND
	Lead	ND (0.00011 J)	ND (0.00038 J)	ND	ND	ND	ND
	Lithium	ND (0.0020 J)	ND (0.0016 J)	ND	ND	ND	ND
	Mercury	ND	--	ND	ND	--	ND
	Molybdenum	ND	ND	ND	ND	ND	ND
	Radium	2.33	0.979 U	1.84	1.03 U	1.86	1.51
	Selenium	ND (0.0018 J)	ND	ND	ND	ND	ND
	Thallium	ND	ND	ND	ND (0.000066 J)	ND	ND

Notes:

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TDS indicates total dissolved solids

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Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring

-- indicates the parameter was not analyzed

Table 5
Summary of Groundwater Analytical Data
Plant McManus
Brunswick, GA

List	Parameter	Well ID & Sample Date						
		MCM-17	MCM-17	MCM-17 resample	MCM-17	MCM-18	MCM-19	MCM-20
		8/27/2019	10/16/2019	11/21/2019	3/27/2020	3/27/2020	3/27/2020	3/27/2020
APPENDIX III	Boron	--	1.6	1.5	1.8	ND (0.24 J)	0.96	0.94
	Calcium	--	118	125	222	23.2	122	113
	Chloride	--	4050	3890	4770	1450	6870	7110
	Fluoride	ND	ND (0.083 J)	ND	ND	ND (0.060 J)	ND	ND
	pH ²	6.23	6.54	6.40	6.93	4.34	5.14	3.81
	Sulfate	--	470	428	504	219	836	700
	TDS	--	7740	7720	10200	3090	14300	14600
APPENDIX IV	Antimony	ND	ND	--	ND	ND	ND	ND
	Arsenic	ND (0.0024 J)	ND (0.0043 J)	ND (0.0031 J)	ND	ND (0.0043 J)	0.017	0.027
	Barium	0.11	0.14	--	0.16	0.076	0.12	0.12
	Beryllium	ND (0.00018 J)	ND (0.00014 J)	--	ND	0.0040	0.011	0.018
	Cadmium	ND	--	--	ND	ND	ND	ND
	Chromium	ND (0.0066 J)	ND (0.0063 J)	--	ND	ND	ND	ND (0.0095 J)
	Cobalt	ND	ND	--	ND	ND	ND	0.036
	Fluoride	ND	ND (0.083 J)	ND	ND	ND (0.060 J)	ND	ND
	Lead	ND (0.00014 J)	ND (0.00034 J)	--	ND	ND	ND	ND
	Lithium	ND (0.023 J)	ND (0.024 J)	--	ND (0.033 J)	ND	ND (0.018 J)	ND (0.024 J)
	Mercury	ND	--	--	ND	ND	ND	ND
	Molybdenum	ND	ND	--	ND	ND	ND	ND
	Radium	5.82	7.50	8.89	9.54	10.2	22.8	47.2
	Selenium	ND (0.0018 J)	ND	--	ND	ND (0.0034 J)	0.013	0.012
	Thallium	ND	ND	--	ND	ND	ND	ND

Notes:

Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L)

ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL)

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-- indicates the parameter was not analyzed

Table C.1
June 2020 ASD Supplemental Sample Results
Georgia Power Company
Plant McManus Former Ash Pond 1
Brunswick, Georgia

Analyte	Surface Water				Groundwater			
	Units	BG-1LT-B 6/16/2020	BG-1LT-S 6/16/2020	BG-2-HT-B 6/16/2020	BG-2-HT-S 6/16/2020	DPZ-2 6/16/2020	MCM-06 6/16/2020	MCM-07 6/16/2020
Boron	mg/L	1.3	1.4	2.4	1.7	2.1	2	1.7
Calcium	mg/L	103	118	177	153	245	234	254
Chloride	mg/L	802	368	8100	6450	7780	7760	7580
Sulfate	mg/L	742	736	1120	864	970	663	961
Lithium	mg/L	0.055	0.055	0.091	0.069	0.096	0.12	0.047
Magnesium (total)	mg/L	301	342	593	496	578	624	640
Potassium (total)	mg/L	125	141	178	157	162	157	156
Sodium (total)	mg/L	3030	3120	5250	4010	4840	4840	4680
Manganese (dissolved)	mg/L	0.084	0.1	0.011	0.03	0.26	0.26	0.19
Alkalinity (bicarbonate)	mg/L	80.3	79.1	98.1	80.6	391	725	276
Alkalinity (carbonate)	mg/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Alkalinity (as calcium carbonate [CaCO ₃])	mg/L	80.3	79.1	98.1	80.6	391	725	276

Notes:

-- = not sampled

< = analyte not detected in sample. Laboratory reporting limit provided.

mg/L = milligrams per liter

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APPENDIX E

Semi-annual Remedy Selection & Design Progress Report



SEMIANNUAL REMEDY SELECTION AND DESIGN PROGRESS REPORT

Plant McManus – Former Ash Pond 1
Brunswick, Georgia

February 2021

**SEMIANNUAL REMEDY
SELECTION AND
DESIGN PROGRESS
REPORT**

Plant McManus – Former Ash Pond 1
Brunswick, Georgia



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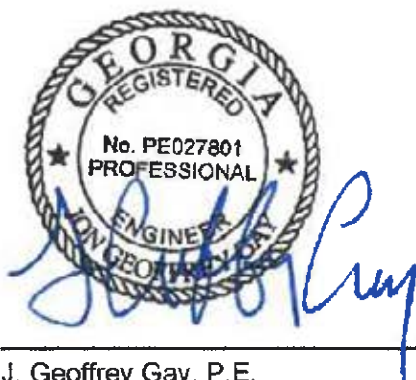
ATTACHMENTS

Attachment 1 Laboratory Analytical Reports

Attachment 2 Bench-scale Treatability Testing for Soluble Arsenic and Lithium in Groundwater (Phase I and Phase II Summary Report) (PeroxyChem 2020).

PROFESSIONAL CERTIFICATION

This *Semiannual Remedy Selection and Design Progress Report, Georgia Power Company - Plant McManus – Former Ash Pond 1 Brunswick, Georgia*, has been prepared in accordance with the United States Environmental Protection Agency coal combustion residual rule, specifically 40 Code of Federal (CFR) 257.97(a) and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10(6)(a). This report describes the progress made during the second semiannual period of 2020 in selecting and designing a remedy previously documented in the *Assessment of Corrective Measures Report – Former Ash Pond 1 Brunswick, Georgia*, (Arcadis 2020a).



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ACRONYMS AND ABBREVIATIONS

Arcadis	Arcadis U.S., Inc.
ACM	Assessment of Corrective Measures
AP-1	Ash Pond 1
As(III)	Trivalent arsenic
As(V)	Pentavalent arsenic
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
Georgia Power	Georgia Power Company
GWPS	Groundwater Protection Standard
ISS	In Situ Stabilization/Solidification
mg/L	milligram per liter
MNA	Monitored Natural Attenuation
PRB	Permeable Reactive Barrier
P&T	Pump and Treat
Semiannual Progress Report	Semiannual Remedy Selection and Design Progress Report
SSL	statistically significant level
USEPA	United States Environmental Protection Agency

1 INTRODUCTION

1.1 Purpose

This Semiannual Remedy Selection and Design Progress Report (Semiannual Progress Report) has been prepared for the Georgia Power Company (Georgia Power) Plant McManus former Ash Pond (AP)-1 (the site; Figure 1) 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 Fed. Reg. 21302-21501, April 17, 2015), and pursuant to 40 CFR § 257.97(a) and the Georgia Environmental Protection Division Rule 391-3-4.10(6)(a). The Semiannual Progress Report was prepared to document activities conducted in support of the previously submitted Assessment of Corrective Measures (ACM) Report (Arcadis U.S., Inc. [Arcadis] 2020a). As required by the rules, this Semiannual Progress Report describes the progress made in selecting and designing a remedy for the site. This Semiannual Progress Report has been included as an appendix to the *2020 Semiannual Groundwater Monitoring and Corrective Action Report* (Resolute 2020). GPC will include future semiannual remedy selection progress reports as an appendix to the routine semiannual groundwater monitoring and corrective action reports.

Georgia Power completed the ACM Report on December 4, 2020 to address the occurrence of arsenic in groundwater at statistically significant levels (SSLs). The ACM Report was placed in the site's operating record and posted to the site's CCR Rule Compliance website. Lithium was also identified as an SSL at former AP-1, and an alternate source demonstration (ASD) was completed for lithium and submitted under a separate cover (Arcadis 2020b). The ASD is provided in the *2020 Semiannual Groundwater Monitoring and Corrective Action Report* (Semiannual Report; Resolute 2020) for reference. The ASD results indicated that concentrations of lithium in groundwater are naturally occurring.

Georgia Power conducted a human health and ecological risk evaluation to evaluate constituents that exhibit SSLs in groundwater including arsenic and lithium at former AP-1. To be conservative, lithium was carried forward into the refined risk evaluation that included multiple conservative assumptions protective of human health and the environment. The results indicated concentrations of arsenic and lithium detected in groundwater at former AP-1 do not pose a risk to human health or the environment. The *Risk Evaluation Report* (Wood Environment & Infrastructure Solutions, Inc. 2020) was provided in the ACM Report.

Pursuant to 40 CFR § 257.97, Georgia Power is evaluating the potential corrective measures presented in the ACM Report to identify an appropriate remedy or combination of remedies as soon as feasible.

The ACM Report presented the following corrective measures as potentially feasible for use at the site:

1. Geochemical Manipulation (In-Situ Injection)
2. Hydraulic Containment (Pump and Treat [P&T])
3. In Situ Stabilization/Solidification (ISS)
4. Monitored Natural Attenuation (MNA)
5. Permeable Reactive Barrier (PRB)

6. Phytoremediation

7. Subsurface Vertical Barrier Walls.

This evaluation was first completed in the ACM Report, as summarized in Table 1. Data obtained during site investigations and evaluations of corrective action alternatives in 2020 are included in this remedy selection update report.

Georgia Power will proactively initiate adaptive site management as outlined in the ACM Report (Arcadis 2020) to support the groundwater remedy selection process and address potential changes in site conditions as appropriate. The adaptive site management approach will take existing site conditions, including natural attenuation mechanisms, into account. Characterization activities to evaluate attenuation mechanisms at the site include collection of data necessary to evaluate the existing and long-term effectiveness of these processes in the aquifer and reduce uncertainty for decision making at each screening step as listed in the EPA guidelines for MNA (USEPA 2007, 2015) summarized below.

- Tier I: Constituent concentrations & plume stability
- Tier II: Constituent attenuation mechanisms
- Tier III: Aquifer capacity and stability
- Tier IV: Performance monitoring

1.2 Site Location and Description

Plant McManus is an electrical power generation plant located on Crispen Island in Glynn County, near Brunswick, Georgia (**Figure 1**). The physical address of the plant is 1 Crispen Island Drive, Brunswick, GA 31523. Crispen Island originally consisted of several smaller islands that were joined to construct Plant McManus. It was separated from the mainland to the northeast by tidal marsh and bound to the west and southwest by the Turtle River.

The plant was originally constructed in 1952 and consisted of two boilers and nine diesel-fired combustion turbines. Use of coal for production ceased in 1972, and Georgia Power retired all coal power generating assets at Plant McManus prior to April 16, 2015. During operation of the coal-fired units from 1959 until 1972, CCR was disposed in an approximately 80-acre surface impoundment (AP-1) on the Plant McManus Site northeast of the plant.

AP-1 was formed by the construction of a dike from the northeast corner of Crispen Island to the mainland. This dike formed the northwest side of AP-1, while Crispen Island, the mainland, and a southern roadway and dike (Crispen Boulevard) formed the other sides of AP-1.

1.3 Closure Activities

Source control has been implemented at the site as part of the closure process and was not specifically intended as a corrective measure. However, there is a strong potential for source control to limit future impact and improve groundwater quality.

Georgia Power completed closure of AP-1 between 2016 and October 2019 by dewatering and removing the CCR material. A notification of intent to close the former CCR Unit was placed in the operating record on December 7, 2015 and posted to the Plant McManus CCR Rule Compliance website within 30 days.

The initial Closure Plan was submitted to GAEPD on April 17, 2018 as part of the permit application package describing the closure activities and requirements in accordance with § 257.102. The Closure Plan and notification of closure completion are posted on the Plant McManus CCR Rule Compliance website, available to the public. The final CCR removal certification report was submitted in November 2019 (Arcadis 2019). The Georgia Environmental Protection Division (GAEPD) acknowledged the report and that the removal activities within the identified boundaries of AP-1 had occurred in a letter in January 2020 (GAEPD 2020).

1.4 Nature and Extent of Appendix IV Constituents

Groundwater monitoring of the surficial aquifer has been performed for former AP-1 since 2016. Groundwater results through January 2021 have shown an SSL of arsenic at MCM-06. The recent groundwater assessment data are provided in the 2020 Semiannual Groundwater Monitoring and Corrective Action Report (Resolute 2020). Investigations to characterize the nature and extent of Appendix IV constituents exceeding GWPS in 2020 included: installation of deep piezometers, collection and analysis of surface water samples, and collection and arsenic analysis of additional samples from existing wells (Arcadis 2020). Sampling locations are shown on Figure 2.

Vertical delineation at MCM-06 was evaluated with installation of deep piezometer DPZ-02 in March 2020 (Figure 3), which has since been incorporated into the monitoring well network as a delineation well. DPZ-02 was sampled in March and October 2020. October 2020 results are presented Table 7 of the Semiannual Report. Arsenic concentrations from DPZ-02 ranged from non-detect at less than the method detection limit of 0.0012 mg/L in March 2020 to 0.021 mg/L in October 2020. This indicates that arsenic concentrations above the GWPS present in groundwater at MCM-06 do not extend to the deeper portion of the aquifer, and that DPZ-02 provides vertical delineation of arsenic at MCM-06.

Due to space limitations on the dikes, additional monitoring wells could not be installed between the existing detection monitoring network wells in the vicinity of MCM-06 (MCM-04, MCM-05, MCM-07, MCM-08, and MCM-14) and the tidal marsh to evaluate the nature and extent of arsenic. Georgia Power proactively completed additional sampling to assess concentrations of arsenic in surface water in the tidal salt marsh in February, March, October, and November 2020. The October and November 2020 results are presented in Table 5 of the Semiannual Report. Arsenic concentrations in surface water samples ranged from not detected at <0.0012 mg/L to 0.0037 mg/L (estimated). These results are below the Georgia instream water quality chronic standard for dissolved arsenic (0.036 mg/L) for marine estuary environments. Arsenic concentrations in background surface water sample locations ranged from 0.0014 mg/L (estimated) to 0.0033 mg/L (estimated). Based on the data collected, no impacts to surface water have been detected and horizontal delineation is complete.

In addition to samples collected from the assessment monitoring well network, samples were collected in October 2020 from the wells used for dewatering during ash removal (RW-1 through RW-10, with RW well screen depths of 10 to 20 feet) to evaluate the extent of arsenic concentrations in groundwater along the dike between MCM-05, MCM-06, and MCM-07. The results of the sampling event are presented in Table 2, and laboratory analytical reports are included in Attachment 1. The results show that arsenic above the GWPS was limited to MCM-06 (0.45 mg/L) and RW-9 (0.038 mg/L). The updated isoconcentration contours on Figure 4 reflect these results.

2 SUMMARY OF WORK COMPLETED

2.1 Supplemental Groundwater Data Collection

Groundwater samples collected from the October 2020 semiannual assessment monitoring event were also analyzed for additional geochemical parameters to evaluate treatment technologies under consideration that are sensitive to geochemical conditions (i.e., in situ injections, P&T, ISS, MNA, PRB). Groundwater collected at former dewatering wells, MCM-05, MCM-06, MCM-07, and DPZ-02 was analyzed for major cations and anions, select total and dissolved metals, sulfide, total organic carbon, and biological oxygen demand. Field parameters (pH, dissolved oxygen, oxidation reduction potential [ORP], temperature, specific conductance, and depth to water) were also recorded. In addition, arsenic speciation analysis was conducted. Geochemical parameters, including alkalinity, biological oxygen demand, nitrate/nitrite, several forms of iron, manganese, orthophosphate, total organic carbon, and sulfide were analyzed at Pace Analytical. Samples for arsenic speciation were analyzed by Brooks Applied Laboratories. The results are presented in Table 2. Laboratory analytical reports are provided in Attachment 1.

Reducing conditions were observed in groundwater collected from wells along the northern dike (MCM-06, MCM-07, RW-7, RW-9, DPZ-02). Based on iron, manganese, sulfate and sulfide data, redox conditions varied from metal reducing to strongly sulfate reducing (Table 2). Elevated arsenic concentrations (>0.01 mg/L) coincided with elevated sulfide (>20 mg/L) and alkalinity (>200 mg/L) at wells located across the northern dike. Speciation analysis found that the arsenic consisted of reduced trivalent arsenic, As(III), and an unknown species, with a low concentration of oxidized pentavalent arsenic, As(V), also observed at MCM-06. These results highlight that the treatment technologies under consideration that are sensitive to geochemical conditions must be capable of treating arsenic species present in the reduced groundwater with elevated sulfide. The elevated total dissolved solids and alkalinity concentrations can also influence the effectiveness of several remedial options through altering reaction chemistry or through formation of fouling precipitates, such as carbonates.

2.2 Bench Testing for In Situ Injections

To evaluate the effectiveness of potential reagents for treatment of arsenic in groundwater by in situ injections, bench tests were conducted in 2020. The reagents tested were various formulations of the MetaFix® reagents from PeroxyChem that seek to immobilize arsenic in groundwater. Groundwater from MCM-06 and soil from DPZ-02 from 7-10 feet below ground surface were sent to the Resolution Partners LLC laboratory in Madison, Wisconsin for testing. The memorandum by PeroxyChem, provided in Attachment 2, details the bench testing experimental procedures and results. The results show several of the MetaFix® formulations were capable of substantial reductions in arsenic concentrations at the bench scale and are potential candidates for in situ injections. Additional field pilot testing would be needed to further evaluate the feasibility of injection and effectiveness of these reagents in situ. Feasibility will depend upon the ability to distribute the reagent in the subsurface. Effectiveness may differ in situ compared to the bench conditions. As discussed within Attachment 2, the removal of arsenic from solution in the bench scale was attributed to oxic conditions at the bench, which would not be present in situ.

3 PLANNED ACTIVITIES AND SCHEDULE

The former AP-1 closure was completed in late 2019 (Arcadis 2019, GAEPD 2020). The closure by removal approach provides a source control measure that reduces the potential for migration of CCR constituents to groundwater. Current conditions include management of the water levels in the former AP-1. As the aquifer adjusts to the closed conditions, concentrations of arsenic may improve. Georgia Power will implement an adaptive site management approach to support the remedial strategy and address potential changes in site conditions as appropriate. The adaptive site management approach may be adjusted over the site's life cycle as new site information and technologies become available. To this end, Georgia Power will continue its data collection efforts as necessary to support refinement of the conceptual site model and to further evaluate the feasibility of the retained list of potential corrective measures proposed in the ACM Report. At this time, all corrective measures outlined in Table 1 are being retained. Once sufficient data are available to make technically-sound decisions regarding the ability to implement one or more specific corrective measures, necessary steps will be taken to design and implement a remedy for the former AP-1 in accordance with 40 CFR § 257.98.

To achieve this goal and further the understanding of site conditions in support of remedy selection, the following activities are recommended for 2021 (summarized in Table 3):

- Continue routine groundwater sampling at Appendix III and Appendix IV constituent delineation locations to analyze and evaluate trends for effectiveness of source control and plume stability. Multiple datasets will be needed to assess temporal variations in conditions. An additional set of samples for arsenic speciation will be collected from MCM-05, MCM-06, MCM-07, and RW-9.
- Conduct a high-resolution investigation of arsenic mass flux, using a Hydraulic Profiling Tool to map aquifer permeability and Direct Push Technology to collect samples of soil and groundwater for arsenic analysis. The understanding of mass flux derived in this analysis will inform the comparative evaluation of technologies for remedy selection. Soil samples collected during the investigation will be analyzed for mineralogical analysis and physical parameters listed in Table 3.
- Conduct an evaluation of MNA as a potential remedy using the USEPA tiered analysis framework (USEPA 2007, 2015).

Georgia Power will include future semiannual remedy selection progress reports in routine groundwater monitoring reports to document groundwater conditions, results associated with additional data gathering, and the progress in selecting and designing the remedy in accordance with 40 CFR § 257.97(a). Record keeping, notifications, and publicly accessible internet site requirements for the semiannual remedy selection progress reports will be provided in accordance with 40 CFR §§ 257.105(h)(12), 257.106(h)(9), and 257.107(h)(9), respectively.

4 REFERENCES

- Arcadis. 2019. Final CCR Removal Certification Report. Plant McManus Inactive Ash Pond AP-1. November 20.
- Arcadis. 2020a. Assessment of Corrective Measures Report. Plant McManus Former Ash Pond 1, Brunswick, Georgia. December 4.
- Arcadis. 2020b. Lithium Alternative Source Demonstration. Plant McManus Former Ash Pond 1. Prepared for Georgia Power Company. October.
- Georgia Environmental Protection Division. 2020. Final Closure through Removal Certification. Glynn-County – Plant McManus Ash Pond AP-1 APL 0631. January 10.
- PeroxyChem. 2020. Bench-scale Treatability Testing for Soluble Arsenic and Lithium in Groundwater (Phase I and Phase II Summary Report). September 9.
- Resolute. 2020. 2020 Semiannual Groundwater Monitoring and Corrective Action Report Plant McManus Inactive Ash Pond AP-1. February.
- USEPA. 2007. Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 1 – Technical Basis for Assessment. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-07/139. October.
- USEPA. 2015. Use of Monitored Natural Attenuation for Inorganic Contaminants in Groundwater at Superfund Sites. Office of Solid Waste and Emergency Response Directive 9283.1-36. August.
- Wood Environment & Infrastructure Solutions, Inc. 2020. Risk Evaluation Report. Plant McManus Inactive Ash Pond AP-1, Glynn County, Georgia. December.

TABLES



Table 1
Remedy Evaluation Summary
Semi-Annual Remedy Selection and Design Progress Report
Georgia Power Company
Plant McManus Former Ash Pond 1, Brunswick, Georgia

Technology	Description	Evaluation Criteria		
		Performance 40 CFR 257.96(c)(1)	Reliability 40 CFR 257.96(c)(1)	Ease of Implementation 40 CFR 257.96(c)(1)
<i>Geochemical Manipulation (In Situ Injection)</i>	Injection of a chemical or organic substrate to alter geochemical conditions to those more favorable for immobilization of arsenic.	<i>Moderate:</i> Effective immobilization of arsenic has been demonstrated at the bench scale; however, the effectiveness is uncertain under site-specific conditions and would require additional data and field testing. Remedial approaches to reducing constituents are typically more compatible with groundwater geochemistry and, therefore, are more viable than oxic remedial approaches.	<i>Moderate:</i> Reliability depends on: (i) the amendment distribution as a function of properties (reactivity, particle size, etc.) of the selected reagents and the permeability and heterogeneity of the subsurface; and (ii) the effectiveness of reagent chemistries for arsenic immobilization, which vary according to site-specific conditions. The approach has not been extensively used in field applications, and the most applicable methodology would require bench- and/or pilot-scale treatability testing. Stability of the precipitated phase may vary based on conditions of precipitation versus ambient conditions. Immobilization under similar conditions to ambient, reducing in this case, would promote long-term stability of the immobilized arsenic.	<i>Moderate:</i> The installation of an injection well network or placement of reagents via other injection methods would be required. Injection of reagents along the existing northern dike is likely feasible, although the workspace is narrow. The ability and scale over which reagents can be distributed depends on reagent properties, such as reactivity and, in the case of solid reagents, particle size. The feasibility of implementation will vary with scale. There is potential for clogging. An evaluation of the amendment distribution during injections (i.e., radius of influence) is needed to support full-scale design.
<i>In Situ Stabilization/Solidification (ISS)</i>	Use of amendments such as cement to reduce the bioavailability and mobility of contaminants through either physical encapsulation (solidification) or a reduction in solubility/mobility (stabilization).	<i>Moderate:</i> ISS is a proven technology for reducing the leachability and mobility of inorganic constituents above and below the water table but may be limited due to the potential size of the treatment area. Treatability depth limitations vary with application method. Within the context of former AP-1, ISS may be used either as a spot-treatment or as an impermeable barrier along the boundary of the former impoundment. Due to the size of the potential treatment area, and anticipated diffuse nature of residual arsenic, the performance of ISS is expected to be moderate. It may be used in conjunction with other treatment methods to achieve standards	<i>Moderate to High:</i> Monitoring is typically needed to confirm ISS effectiveness. Reagents such as Portland cement can cause pH changes, which may cause a release of secondary contaminants, which should also be monitored during implementation.	<i>Difficult:</i> The difficulty of ISS implementation increases with scale. If ISS is applied over a small area in the vicinity of MCM-06, the technology could be viable, whereas application over a greater scale would become difficult and impractical. ISS implementation along the narrow dike would be difficult and likely require widening.
<i>Hydraulic Containment</i>	Use of a groundwater extraction system with a surface treatment system to remove target analytes from the subsurface and/or to control/prevent constituent migration.	<i>High:</i> Pump and treat (P&T) is an effective, demonstrated technology for hydraulic control. The design of the P&T system requires groundwater modeling for the well network and, potentially, design of an above-ground treatment system. However, this remedy typically is not immediately effective for the treatment of trace level metals. There is also a possibility of rebounding when operations cease.	<i>Moderate to High:</i> Reliability may also depend on the operation and performance of an ex-situ treatment system, if needed. System downtime for maintenance may impact reliability.	<i>Difficult:</i> P&T is a longstanding, proven approach that requires installation of extraction wells/trenches. A variety of treatment technologies exist for ex-situ treatment of arsenic. The level of effort for construction and operations and maintenance (O&M) is relatively high compared to other options and requires onsite staff.
<i>Monitored Natural Attenuation (MNA)</i>	A remedial solution that takes advantage of natural attenuation processes to reduce constituents in soil and groundwater.	<i>Moderate:</i> Under the conditions of site groundwater, potential arsenic attenuation mechanisms include sorption, precipitation, oxidation-reduction reactions, dilution, and dispersion. Under the reducing conditions present at MCM-06, sorption of arsenic species, including arsenite, are likely occurring, as well as potential precipitation in reduced iron and sulfide minerals. Downgradient of MCM-06, there are likely redox gradients where aerobic conditions promote oxidation of arsenic, enhanced sorption, and potential for co-precipitation with iron oxides. The slow groundwater velocity and tidal gradient fluctuations further promote attenuation of arsenic concentrations with distance from MCM-06. Additional characterization would be needed to fully understand the attenuation processes and performance.	<i>Moderate to High:</i> The reliability of MNA is moderate to high as long as aquifer attenuation capacity is present and aquifer conditions that result in attenuation remain favorable and/or are being enhanced. Long-term monitoring well rehabilitation, replacement, or repair may be needed. Due to its location along the coast, large weather events such as hurricanes may cause fluctuations in groundwater conditions that affect attenuation processes (Northrup et al. 2017). ¹	<i>Easy:</i> A well network for MNA is already in place. Additional wells may be needed to monitor progress in select areas. Additional data would be needed to show that the existing aquifer attenuation capacity is sufficient to achieve the Groundwater Protection Standard (GWPS) within a reasonable timeframe.

¹ Northrup, K., M. Capocci, and A. Seyfferth. 2017. Effects of Extreme Events on Arsenic Cycling in Salt Marshes. *Journal of Geophysical Research: Biogeosciences*. 123, 1086-1100. <https://doi.org/10.1002/2017JG004259>.

Table 1
Remedy Evaluation Summary
Semi-Annual Remedy Selection and Design Progress Report
Georgia Power Company
Plant McManus Former Ash Pond 1, Brunswick, Georgia

Technology	Description	Evaluation Criteria		
		Performance 40 CFR 257.96(c)(1)	Reliability 40 CFR 257.96(c)(1)	Ease of Implementation 40 CFR 257.96(c)(1)
<i>Permeable Reactive Barrier (PRB)</i>	Use of reactive material that extends below the water table to intercept and treat groundwater.	<i>Moderate to High:</i> PRBs have been shown to effectively address arsenic in groundwater. Performance may be affected by tidal cycles. Due to the elevated salts and alkalinity in groundwater at MCM-06, there is a risk for scaling and fouling of the reactive media, which will need to be considered during design. Delineation data will need to be collected to design an effective placement of a PRB.	<i>Moderate to High:</i> A PRB has been demonstrated effective for arsenic. Loss of reactivity over time, potentially exacerbated by brackish groundwater at the site, may require media replacement depending on the duration of the remedy. Additional data collection, including conducting a laboratory treatability test and/or field pilot study, would be needed to select the appropriate reactive media for a PRB.	<i>Moderate to difficult:</i> The practical location for the PRB is along the northern dike. Construction using trenching methods would be difficult on the narrow dike and would potentially require widening the dike. The PRB can be keyed into a relatively low permeability unit at 37 to 45 feet below ground surface (bgs) in the vicinity of MCM-06 (<i>refer to Appendix B</i>), but continuity must be confirmed. The presence of flowing sands may complicate the trenching process. Injection-style emplacements would likely be more feasible along the dike. Once installed, treatment would be passive and O&M requirements would be minimal, with the exception of media replacement.
<i>Phytoremediation</i>	Use of plants to remove, transfer, or stabilize constituents in soil or groundwater.	<i>Low:</i> While phytoremediation has been shown to have a degree of success treating deep contamination, site features may prove challenging for implementation of these deeper phytoremediation technologies. Brackish groundwater quality may limit the types of hyper-accumulative plants that are able to grow. A phytoremediation system may also be susceptible to damage and disruption by high winds associated with hurricanes.	<i>Low to Moderate:</i> The depth of the contamination and challenges for implementation at depth at the site make this option low to moderate in reliability. The well where Statistically Significant Levels for arsenic were identified (MCM-06) is screened at approximately 25 feet bgs, which is outside the typical rooting depth for common arsenic hyperaccumulators.	<i>Difficult:</i> The practical location for use of phytoremediation to capture arsenic and reduce concentrations at the compliance boundary is along the northern dike. Given the depths of the impacts, a TreeWell® system would be required. TreeWells® are installed in 3- to 5-foot-diameter boreholes extending to the target depth. Drilling borings within the narrow width of the dike may be challenging and require widening the dike. Depending on the number of TreeWells® and borings required, the construction could impact the stability of the dike. The presence of flowing sands and brackish water chemistry may complicate the installation process and viability of plants.
<i>Subsurface Barrier Walls</i>	Use of barriers to physically control the migration of impacted groundwater either directly or through manipulation of groundwater flow.	<i>Moderate:</i> Barrier walls are a proven technology for seepage control and/or groundwater cutoff at impoundments. Sheet pile walls are limited by the depth of installation, which is typically approximately 60 to 65 feet bgs with a single sheet. Within the context of former AP-1, a barrier wall as the sole remedial measure would likely be moderately effective. An alternative use of this strategy is in a “funnel and gate” system with a PRB. As such, groundwater with arsenic above the GWPS could be directed to “treatment gates” for passive treatment (in a PRB). Additional subsurface investigations and compatibility testing with groundwater from former AP-1 would be needed prior to selection and implementation. Performance may be affected by the fluctuating groundwater flow directions during tidal cycles.	<i>High – With proper installation:</i> O&M requirements can range significantly, depending on whether groundwater extraction and subsequent treatment from inside the wall is required.	<i>Moderate to difficult:</i> Limited space for construction activities along the dike makes implementation moderate to difficult. Widening the dike would likely be necessary prior to implementation. A relatively low permeability unit at 37 to 45 feet bgs in the vicinity of MCM-06 is present to key the barrier into (<i>refer to Appendix B</i>), but continuity needs to be confirmed. The presence of flowing sands may complicate the trenching process. Jet-grouting is another alternative but is typically more difficult compared to other barrier wall installation methods. Depending on design, groundwater extraction may be needed because of the inflow of water from the mainland and island.

Table 1
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Technology	Evaluation Criteria			
	Potential Impact 40 CFR 257.96(c)(1)	Estimated Time to Begin/Complete Remedy 40 CFR 257.96(c)(2)	Institutional Requirements and Other Env or Public Health Requirements 40 CFR 257.96(c)(3)	Relative Costs
<i>Geochemical Manipulation (In Situ Injection)</i>	<i>Low:</i> Low impacts are expected if the remedy works as designed, based on a thorough pre-design investigation, geochemical modeling, and bench/pilot study results. Consideration of groundwater flow to nearby sensitive environments may be needed. This remedial alternative may unintentionally alter the geochemistry within the aquifer, which may result in the mobilization of other constituents that require treatment. Short-term risks during remedial activities such as drilling and operating pressurized injection equipment can be mitigated through appropriate planning and health and safety (H&S) measures.	A thorough pre-design investigation, geochemical modeling, and/or bench scale treatability study and/or field-scale pilot testing may take up to 24 months to obtain the design parameters needed for design and construction of the corrective measure. Well construction is relatively quick (i.e., 1 to 2 months; potentially longer depending on the scale of the remedy) and time for an injection event is variable. Time to achieve the GWPS for arsenic is dependent on the attenuation process kinetics of the constituent as well as amendment longevity, injection layout, and arsenic transport properties. Additional injection events may be needed to maintain redox conditions and/or address additional flux of impacted groundwater into the treatment area.	Deed restrictions may be necessary until in situ treatment has achieved the GWPS. An Underground Injection Control Permit would be required to implement this corrective measure. No other institutional expected. Based on the Risk Evaluation Report (Wood 2020), the arsenic SSL is not expected to pose a risk to human health or the environment. Potential mobilization of redox constituents may occur with in situ injections.	Medium
<i>In Situ Stabilization/Solidification (ISS)</i>	<i>Low:</i> Short-term impacts during remedy construction can be mitigated through appropriate planning and H&S measures. Changes to groundwater flow patterns due to stabilized media can occur, which can affect other aspects of the groundwater corrective action. Application of ISS mixture can also alter the geochemistry and may result in the mobilization of other constituents that require treatment. In addition, bulk mixing with reagents can occur.	Design phase and additional compatibility testing may be required, which may take up to 18 months. Completion of ISS may take an additional 12 to 18 months, depending on the final design, mixing method, and scale. Since this approach would likely not be applied to all of the impacted groundwater but rather applied to a specific source area to prevent migration, it may take an extended period of time to complete the remedy.	Deed restrictions may be necessary until groundwater concentrations are below the GWPS. No other institutional requirements expected. Based on the Risk Evaluation Report (Wood 2020), the arsenic SSL is not expected to pose a risk to human health or the environment.	Medium to high (depending on area stabilized)
<i>Hydraulic Containment</i>	<i>Low:</i> Potential impacts are anticipated to be low. Short-term impacts during the construction of the remedy and long-term impacts during O&M can be mitigated through appropriate planning and H&S measures. Groundwater extraction may unintentionally alter the geochemistry within the hydraulic capture zone.	A thorough pre-design investigation, flow modeling, bench-scale treatability studies, and/or field-scale pilot testing may be needed. These activities may take 12 to 24 months prior to design, permitting, and construction of the corrective measure. Installation of extraction wells and/or trenches can be accomplished relatively quickly, while the time until startup is contingent on ex-situ treatment infrastructure. Hydraulic containment can be achieved relatively quickly after startup of the extraction system. However, uncertainty exists with respect to the time to achieve and maintain the GWPS and complete operations; additional data collection may be needed to better understand site mobility and attenuation mechanisms for arsenic.	A revision to the current permit may be required to withdraw water (e.g., water or consumptive use permit). Depending on the effluent management strategy, modifications to the existing National Pollutant Discharge Elimination System permit may be required for surface water discharge. In addition, deed restrictions may be necessary until groundwater concentrations are below the GWPS. Based on the Risk Evaluation Report (Wood 2020), the arsenic SSL is not expected to pose a risk to human health or the environment. Potential mobilization of redox constituents may occur with in situ injections. Treatment system residuals require proper disposal.	Medium to high (depending on remedy duration and complexity of above-ground treatment system)
<i>Monitored Natural Attenuation (MNA)</i>	<i>Negligible:</i> Potential impacts of the remedy will be negligible because MNA relies on natural processes active in the aquifer matrix without significant disturbance to the surface or subsurface.	Implementation of the MNA remedy would require time for additional data collection and documentation, even though an existing monitoring network is already in place. Additional data collection activities may take up to 24 months to complete. The additional data would be needed for statistical analysis and to evaluate whether additional monitoring wells need to be installed to supplement the existing monitoring network. MNA timeframes range from a few years to a few decades.	Deed restrictions may be necessary until natural attenuation processes have achieved the GWPS. No other institutional requirements expected. Based on the Risk Evaluation Report (Wood 2020), the arsenic SSL is not expected to pose a risk to human health or the environment. Minimally disruptive technology.	Low

Table 1
Remedy Evaluation Summary
Semi-Annual Remedy Selection and Design Progress Report
Georgia Power Company
Plant McManus Former Ash Pond 1, Brunswick, Georgia

Technology	Evaluation Criteria			
	Potential Impact 40 CFR 257.96(c)(1)	Estimated Time to Begin/Complete Remedy 40 CFR 257.96(c)(2)	Institutional Requirements and Other Env or Public Health Requirements 40 CFR 257.96(c)(3)	Relative Costs
<i>Permeable Reactive Barrier (PRB)</i>	<i>Low:</i> Impacts are expected to be low if the remedy works as designed, based on a thorough pre-design investigation, geochemical modeling, and geophysical testing. Short-term impacts during construction of the remedy can be mitigated through appropriate planning and H&S measures. Consideration of groundwater flow to nearby sensitive environments may be needed. This remedial alternative may unintentionally alter the geochemistry within the wall, which may result in the mobilization of other constituents that require treatment.	Installation of a PRB can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, bench-scale treatability studies and/or compatibility testing would be required to obtain design parameters prior to design and construction of the remedy. These processes may take up to 24 months. Media may need to be replaced periodically to maintain reactive conditions and/or address additional flux of impacted groundwater into the PRB.	Deed restrictions may be necessary until groundwater concentrations are below the GWPS. No other institutional requirements expected. Based on the Risk Evaluation Report (Wood 2020), the arsenic SSL is not expected to pose a risk to human health or the environment. Passive remedy with minimal disruption after installation.	Medium (for installation) with minimal O&M requirements
<i>Phytoremediation</i>	<i>Low:</i> Phytoremediation typically has low expected impacts. Depending on the phytoremediation strategy, disposal methods for vegetation with bioaccumulated arsenic may need to be considered. Short-term impacts during the construction of the remedy can be mitigated through appropriate planning and H&S measures.	Installation of a phytoremediation system can be accomplished relatively quickly (within 6 to 12 months), depending on the final location and configuration. However, treatability studies and pilot testing would be required to ensure effective treatment. These studies may take up to 24 months. Once installed, the time to achieve the GWPS downgradient of the phytoremediation system is anticipated to be long and can take multiple years before system is treating at design capacity	Deed restrictions may be necessary until groundwater concentrations are below the GWPS. No other institutional requirements expected. Based on the Risk Evaluation Report (Wood 2020), the arsenic SSL is not expected to pose a risk to human health or the environment. Passive remedy with minimal disruption after installation.	Medium (for installation) with minimal O&M requirements
<i>Subsurface Barrier Walls</i>	<i>Low:</i> Impacts are expected to be low following construction of the remedy. Short-term impacts during remedy construction can be mitigated through appropriate planning and H&S measures. Changes to groundwater flow patterns due to installation of the barrier wall are expected and may require dewatering.	Design phase and additional compatibility testing may be required, which may take up to 24 months. Installation of a barrier wall can be accomplished relatively quickly (i.e., 6 to 12 months), depending on the final location and configuration. Once installed, preventing migration of constituents in groundwater is anticipated to be similar to a companion technology (e.g., PRBs or P&T). Since this approach does not treat the downgradient area of impacted groundwater but rather prevents migration from a source area, it will likely have to be maintained long-term and coupled with other approaches.	Deed restrictions may be necessary until groundwater concentrations are below the GWPS. No other institutional requirements expected. Based on the Risk Evaluation Report (Wood 2020), the arsenic SSL is not expected to pose a risk to human health or the environment. Passive remedy with minimal disruption after installation. If implemented in conjunction with P&T, treatment system residuals require proper disposal	Medium (for installation) with minimal O&M requirements

Acronyms and Abbreviations:

- CFR = Code of Federal Regulations
- bgs = below ground surface
- GWPS = Groundwater Protection Standard
- H&S = health and safety
- ISS = in situ stabilization/solidification
- MNA = monitored natural attenuation
- O&M = operation and maintenance
- P&T = pump and treat
- PRB = permeable reactive barrier
- SSL = statistically significant level

Table 2
October 2020 Analytical Summary
Semi-annual Remedy Selection and Design Progress Report
Georgia Power Company
Plant McManus Former Ash Pond 1
Brunswick, Georgia



Monitoring Well Locations	Units	DPZ-02	MCM-05	MCM-06	MCM-07	MCM-14	RW-01	RW-02	RW-03	RW-04	RW-05	RW-06	RW-07	RW-08	RW-09	RW-10
Sample Date		10/15/2020	10/15/2020	10/14/2020	10/14/2020	10/13/2020	10/14/2020	10/14/2020	10/14/2020	10/15/2020	10/15/2020	10/15/2020	10/14/2020	10/14/2020	10/14/2020	10/14/2020
Arsenic	mg/L	0.021	<0.0017 (0.024)	0.45 (0.43)	0.015 (0.013)	<0.0017 (<0.0017)	0.0018 J	<0.0017	<0.0017	0.0028 J	0.0026 J	0.0029 J	0.013	0.0024 J	0.038	0.0058
Boron	mg/L	2.1	0.67 (0.61)	1.5 (1.5)	1.7 (1.8)	1.2 (1.1)	2.3	3.1	2.5	2.1	2.7	2.5	1.0	2.5	1.6	1.8
Calcium	mg/L	225 (194)	60.7 (69.1)	193 (245)	216 (207)	177 (40.9)	151	132	118	128	152	153	160	131	256	138
Chloride	mg/L	8000	1660 (1660)	6930 (6630)	8170 (7910)	6230 (6230)	7340	7870	7370	5600	6190	7030	3980	6810	7160	5880
Iron	mg/L	<0.83	<0.83	<0.21	<0.21	<0.21	1.0	<0.21	1.5	2.6	1.3	<0.83	<0.21	1.4	<0.83	<0.83
Iron, Ferric ¹	mg/L	0.35 J	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	0.79	1.6	0.94	<0.25	<0.25	0.65	<0.25	<0.25
Iron, Ferrous ^{1,2}	mg/L	<0.084	<0.084	0.099 J	<0.084	<0.084	1.1	<0.084	0.71	1.1	0.32 J	0.41 J	<0.084	0.75	<0.084	<0.084
Magnesium	mg/L	485	138	445	614	379	418	436	380	373	397	447	309	422	567	378
Manganese	mg/L	0.26	<0.069	0.24	0.13	0.29	0.18	0.12	0.14	0.23	0.14	<0.069	0.13	0.11	0.28	0.16
Potassium	mg/L	151	<60.8	121	148	107	158	171	156	145	159	164	94.1 J	151	151	136
Sodium	mg/L	4720	996	<30.5	4310	3420	4280	4540	4220	3370	3770	4050	2150	3790	3820	3200
Nitrate as N	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrite as N	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Sulfate	mg/L	989 (1060)	148 (147)	552 (510)	938 (904)	682 (695)	836	984	930	732	806	839	310	829	731	701
Sulfide	mg/L	41.6	21	50.8	25.7	15.7	<0.050	0.19	2.1	0.44	0.95	8.3	52.5	0.054 J	50.8	1.6
Orthophosphate		0.13 J	0.37	0.81	0.59	0.58	0.65	0.66	0.47	0.21	1.0	0.23	0.68	0.27	0.6	0.51
Alkalinity,Bicarbonate (CaCO3)	mg/L	349	174	532	253	164	234	151	147	131	197	108	301	127	307	192
Alkalinity,Carbonate (CaCO3)	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Total Dissolved Solids	mg/L	(19300)	(5100)	(15200)	(18400)	(15600)	17800	20600	19100	13100	15500	16400	9700	17200	17500	11800
Total Organic Carbon	mg/L	7.0	6.6	9.3	15.9	5.0	15.1	7.9	10.2	11.0	11.9	7.6	8.7	8.0	9.5	9.4
Biochemical Oxygen Demand	mg/L	<2.0	4.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic Speciation - Brooks Applied Laboratories²																
Trivalent arsenic (As[III])	µg/L	0.461 J	1.13 J	53.6	<0.400	<0.400	0.687 J	<0.400	<0.400	1.27 J	0.401 J	0.714 J	<0.400	0.541 J	0.46 J	<0.400
Pentavalent arsenic (As[V])	µg/L	<0.400	<0.400	1.69 J	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400
Dimethylarsinic acid (DMA)	µg/L	<0.500	<0.500	<0.5	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Monomethylarsonic acid (MMA)	µg/L	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400
Unknown arsenic species	µg/L	17.3	<0.500	291	8.98	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.946 J	10.3	<0.500	32.5	3.92
Field Parameters																
pH (field)	SU	7.08	6.52	6.93	6.32	6.50	6.45	6.53	6.26	6.24	6.62	6.15	6.74	6.25	6.55	6.63
Temperature	°C	25.74	25.55	25.32	27.3	25.5	26.46	27.71	26.62	27.74	26.69	27.99	26.33	26.78	25.3	26.41
Specific Conductivity	µS/cm	26033	6398.1	21942	25574	20468	23526	24632	23260	18606	21578	23045	13350	21848	22441	19245
Dissolved Oxygen	mg/L	0.11	0.10	0.04	0.05	0.02	0.16	0.15	0.33	0.10	0.11	0.09	0.12	0.05	0.15	0.04
Turbidity	NTU	0.35	0.60	2.85	4.87	0.31	0.26	0.26	0.34	4.79	2.99	0.38	0.14	0.67	0.23	0.53
Oxidation Reduction Potential	mV	-178.1	-135.2	-279.5	-158.6	-179	-40.2	-156.5	-116	-47.2	-61.7	-76.1	-217.3	-70.2	-155.9	-173

Notes:

Data collected as part of semi-annual monitoring (laboratory report #92500314) indicated in parentheses. All other data presented was collected as part of supplemental groundwater data collection (laboratory report #92500569)

- Laboratory not certified for analyte.
 - Ferrous iron samples were analyzed outside of the holding time. Results are still useful for interpretation of variation in geochemical conditions, given that sum of ferric and ferrous iron is consistent with total iron.
 - Arsenic speciation samples from MCM-06, MCM-07, MCM-14, RW-01, RW-02, MW-03, RW-07, RW-08, RW-09, and RW-10 arrived at the lab at 7.1°C, above the lab recommended temperature of 6°C. The results do not appear to have been affected, i.e. oxic species were not dominant and results were comparable to DPZ-02 that was maintained below 6°C. Arsenic speciation will be resampled at MCM-05, MCM-06 and MCM-07 to verify.
- J - Estimated concentration greater than the laboratory's method detection limit, but less than the laboratory's reporting limit.
< not detect above method detection limited listed

Acronyms and Abbreviations:

°C - degrees Centigrade	mg/L - milligram per liter
µg/L - micrograms per liter	mV - millivolts
µS/cm - microsiemens per centimeter	NTU - Nephelometric Turbidity Units
CaCO3 - calcium carbonate	SU - standard units

Table 3
Supplementary Data Collection
Semi-Annual Remedy Selection and Design Progress Report
Georgia Power Company
Plant McManus Former Ash Pond 1, Brunswick, Georgia



Data Collection Event	Applicable Technology	Applicability/Rationale	Field/Office Component	Parameters of Interest	Analytical Lab Performing Analysis
Groundwater sampling from MCM-06	MNA	<ul style="list-style-type: none"> Characterize concentration trends overtime for plume stability analysis (MNA evaluation Tier I) 	<ul style="list-style-type: none"> Ongoing collection of groundwater samples 	<ul style="list-style-type: none"> Arsenic 	Pace
Groundwater sampling from existing wells along dike (completed)	MNA, PRB, P&T, In Situ, ISS, Phyto	<ul style="list-style-type: none"> Evaluate lateral extent of arsenic with dewatering wells Characterize variability in geochemical conditions to evaluate effectiveness and likely treatment chemistries for several technologies (PRB, In Situ, P&T, MNA) Characterize geochemical conditions in groundwater to evaluate attenuation mechanism and capacity (MNA evaluation Tier II and III) 	<ul style="list-style-type: none"> Collect groundwater from existing wells along northern dike 	<ul style="list-style-type: none"> Standard Analytes: total and dissolved As, Fe, Mn, Mg, Ca, Na, K, B; Alkalinity, TDS, Sulfate/Sulfide, Phosphate, Nitrate/Nitrite, DOC/TOC/BOD Arsenic speciation 	Standard analytes – Pace Arsenic speciation – Brooks Applied Laboratory
High Resolution Investigation	MNA, PRB, In Situ, P&T, ISS, Phyto	<ul style="list-style-type: none"> Characterize arsenic mass flux to inform comparative analysis of technologies Characterize geochemical conditions in groundwater to evaluate attenuation mechanism and capacity (MNA evaluation Tier II and III) 	<ul style="list-style-type: none"> HPT/DPT investigation DPT: Soil sampling (dual-tube coring) and groundwater sampling (vertical aquifer profiling tool) and laboratory analysis 	<ul style="list-style-type: none"> Small scale permeability Lithology Groundwater: total and dissolved As, Fe, Mn, Mg, Ca, Na, K, B; Alkalinity, Sulfate/Sulfide, Phosphate, Nitrate/Nitrite, DOC/TOC/BOD Soil: As, Fe, Al, Mn, Ca, AVS, TOC, XRD, SSE, Grain Size, Atterberg Limits 	HPT/DPT – Cascade Groundwater analytical – Pace Total Metals, AVS, TOC, Grain Size, Atterberg Limits, SSE – Eurofins Test America XRD – SGS

Technologies:

- In Situ In Situ Geochemical Manipulation (In Situ Injections)
- ISS In Situ Stabilization
- MNA Monitored Natural Attenuation
- P&T Pump and Treat
- PRB Permeable Reactive Barrier
- Phyto Phytoremediation

Abbreviations:

- | | | | |
|-----|--------------------------|-----|---------------------------------|
| As | arsenic | K | potassium |
| AVS | acid volatile sulfide | Mg | magnesium |
| B | boron | Mn | manganese |
| BOD | biological oxygen demand | Na | sodium |
| Ca | calcium | ORP | Oxidation-Reduction Potential |
| DPT | Direct Push Technology | SSE | Sequential Selective Extraction |
| DOC | dissolved organic carbon | TDS | Total Dissolved Solids |
| Fe | iron | TOC | Total Organic Carbon |
| HPT | Hydraulic Profiling Tool | XRD | X-ray diffraction |

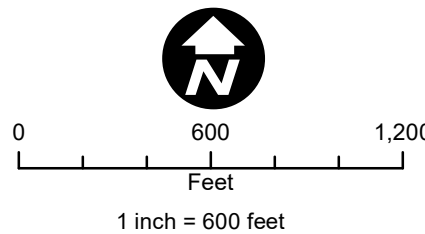
FIGURES





User: KGPeters Location: On-Site Click
 Path: F:\Brunswick_Crispin_Island_GA\Figure 1_Site Map and Compliance Monitoring Well Network.mxd

- Legend**
- PERMITTED CCR BOUNDARY
 - PROPERTY BOUNDARY
 - COMPLIANCE MONITORING WELL
 - DELINEATION WELL



GEORGIA POWER
 REMEDY SELECTION PROGRESS REPORT
 PLANT MCMANUS FORMER ASH POND 1
 BRUNSWICK, GEORGIA

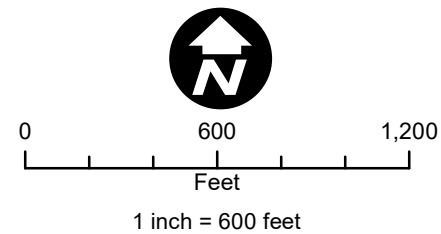
**SITE MAP AND COMPLIANCE
 MONITORING WELL NETWORK**

ARCADIS Design & Consultancy
for natural and
built assets.

FIGURE
1

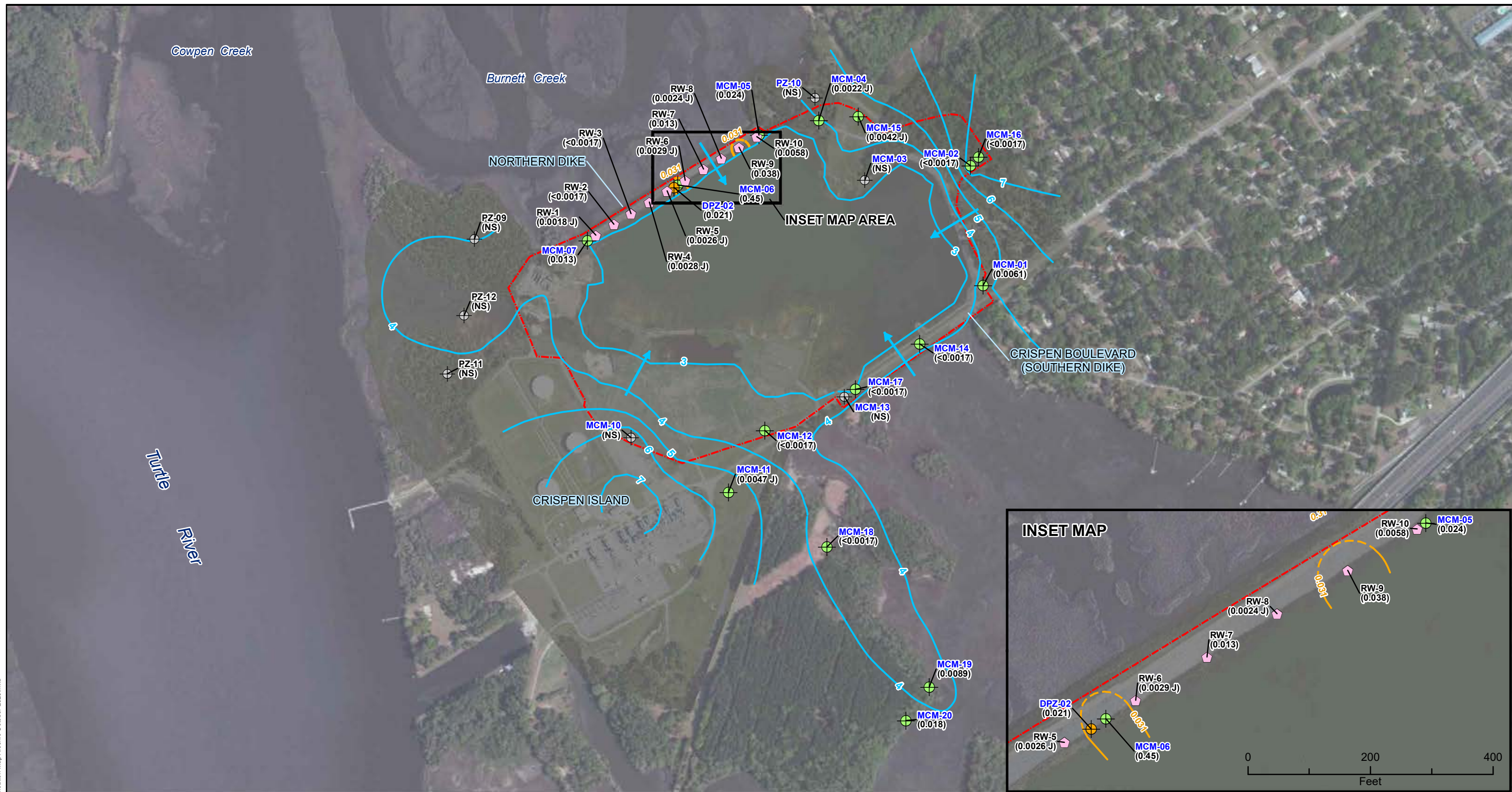


- LEGEND**
- PERMITTED CCR BOUNDARY
 - COMPLIANCE MONITORING WELL
 - DEEP PIEZOMETER
 - PIEZOMETER
 - DELINEATION WELL
 - DEWATERING WELLS



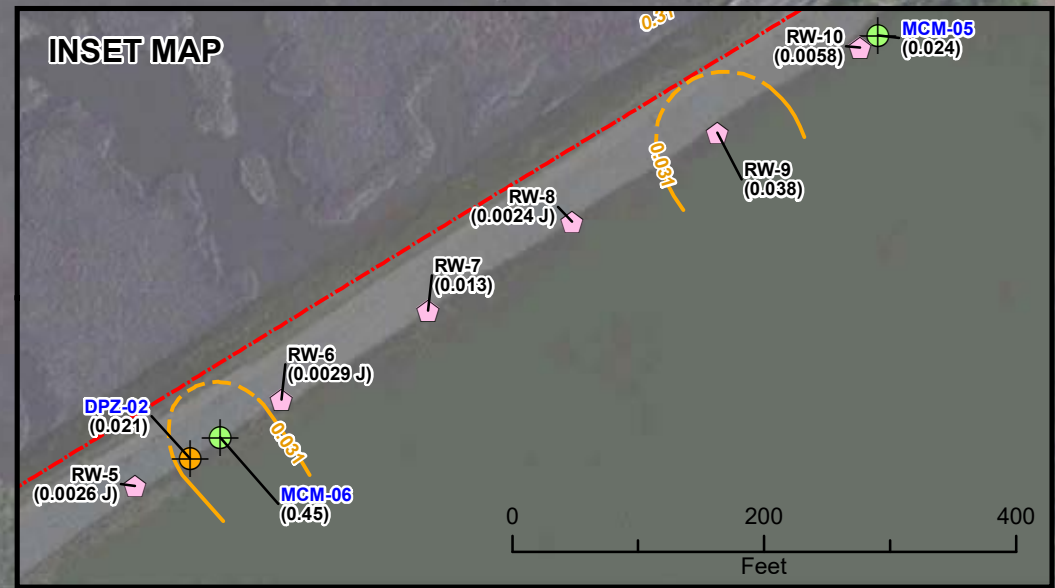
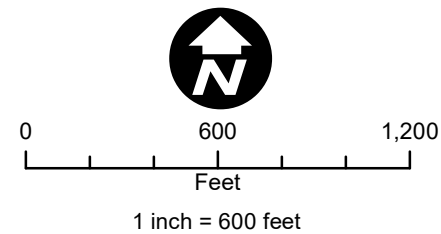
GEORGIA POWER PLANT MCMANUS FORMER ASH POND 1 BRUNSWICK, GEORGIA	
Supplemental Investigation and Dewatering Wells	
	FIGURE 2

User: KGPeters Location: On-Site Clinic Path: F:\Brunswick_Crispin_Island_GA\Figure 2_Supplemental Investigation and Dewatering Wells.mxd



- LEGEND**
- PERMITTED CCR BOUNDARY
 - COMPLIANCE MONITORING WELL
 - PIEZOMETER
 - DELINEATION WELL
 - DEWATERING WELLS
 - ARSENIC ISCONCENTRTION LINE
 - - - DASHED WHERE INFERRED
 - OCTOBER 2020 HIGH TIDE
 - GROUNDWATER CONTOURS
 - DIRECTION OF GROUNDWATER FLOW

NOTES:
 BLUE LABELS INDICATE WELL WAS USED FOR GROUNDWATER ELEVATION MODELING.
 BLACK LABELS ARE ARESENIC CONCENTRATIONS.
 DATA SHOW FROM GROUNDWATER SAMPLING EVENT CONDUCTED OCTOBER 14-15, 2020.
 ISOCONTOUR DASHED WHERE APPROXIMATE.
 CONCENTRATIONS REPORTED IN MILLIGRAMS PER LITER (MG/L).
 DELINEATION WELL DATA ARE NOT USED IN ISOCONTOUR DEVELOPMENT.
 NS = NOT SAMPLED.
 ND = NOT DETECTED.
 GREYED LOCATIONS WERE NOT SAMPLED DURING OCTOBER 2020 SAMPLING EVENT.
 ARSENIC GROUNDWATER PROTECTION STANDARD = 0.031 MILLIGRAMS PER LITER.
 PZ-01 THROUGH PZ-08, MW-08, AND MCM-09 WERE ABANDONED IN 2019.



GEORGIA POWER
 PLANT MCMANUS FORMER ASH POND 1
 BRUNSWICK, GEORGIA

**Isoconcentration Map Arsenic
 October 2020**

ARCADIS Design & Consultancy
for natural and
built assets.

FIGURE
3

ATTACHMENT 1

Laboratory Analytical Reports



November 02, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCMANUS APP III
Pace Project No.: 92500569

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between October 15, 2020 and October 16, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: MCMANUS APP III

Pace Project No.: 92500569

Pace Analytical Services Charlotte

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville

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

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92500569001	MCM-06	Water	10/14/20 16:52	10/15/20 10:49
92500569002	MCM-07	Water	10/14/20 14:42	10/15/20 10:49
92500569003	MCM-14	Water	10/14/20 13:00	10/15/20 10:49
92500569004	RW-1	Water	10/14/20 12:19	10/15/20 10:49
92500569005	RW-2	Water	10/14/20 15:04	10/15/20 10:49
92500569006	RW-3	Water	10/14/20 17:17	10/15/20 10:49
92500569007	RW-7	Water	10/14/20 15:43	10/15/20 10:49
92500569008	RW-8	Water	10/14/20 16:30	10/15/20 10:49
92500569009	RW-9	Water	10/14/20 13:04	10/15/20 10:49
92500569010	RW-10	Water	10/14/20 15:00	10/15/20 10:49
92500569011	DUP-1	Water	10/14/20 15:00	10/15/20 10:49
92500569012	FBL101420	Water	10/14/20 16:47	10/15/20 10:49
92500569013	MCM-05	Water	10/15/20 13:48	10/16/20 10:30
92500569014	DPZ-2	Water	10/15/20 16:00	10/16/20 10:30
92500569015	RW-4	Water	10/15/20 14:46	10/16/20 10:30
92500569016	RW-5	Water	10/15/20 15:55	10/16/20 10:30
92500569017	RW-6	Water	10/15/20 14:03	10/16/20 10:30
92500569018	DUP-2	Water	10/15/20 00:00	10/16/20 10:30
92500569019	FBL101520	Water	10/15/20 17:36	10/16/20 10:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
92500569001	MCM-06	EPA 6010D	SH1	6	PASI-A		
		EPA 6020B	JOR	2	PASI-A		
		SM 2320B-2011	ECH	2	PASI-A		
		SM 3500-Fe D#4	EWS	1	PASI-A		
		SM 3500-Fe B-2011	NAL	1	PASI-A		
		SM 4500-S2D-2011	NAL	1	PASI-A		
		SM 5210B-2011	JP1	1	PASI-A		
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A		
		EPA 353.2 Rev 2.0 1993	CJL	2	PASI-A		
		SM 4500-P E-2011	DMN	1	PASI-A		
		SM 5310B-2011	ECH	1	PASI-A		
		92500569002	MCM-07	EPA 6010D	SH1	6	PASI-A
				EPA 6020B	JOR	2	PASI-A
				SM 2320B-2011	ECH	2	PASI-A
SM 3500-Fe D#4	EWS			1	PASI-A		
SM 3500-Fe B-2011	NAL			1	PASI-A		
SM 4500-S2D-2011	NAL			1	PASI-A		
SM 5210B-2011	JP1			1	PASI-A		
EPA 300.0 Rev 2.1 1993	BRJ			2	PASI-A		
EPA 353.2 Rev 2.0 1993	CJL			2	PASI-A		
SM 4500-P E-2011	DMN			1	PASI-A		
SM 5310B-2011	ECH			1	PASI-A		
92500569003	MCM-14			EPA 6010D	SH1	6	PASI-A
				EPA 6020B	JOR	2	PASI-A
				SM 2320B-2011	ECH	2	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A		
		SM 3500-Fe B-2011	NAL	1	PASI-A		
		SM 4500-S2D-2011	NAL	1	PASI-A		
		SM 5210B-2011	JP1	1	PASI-A		
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A		
		EPA 353.2 Rev 2.0 1993	CJL	2	PASI-A		
		SM 4500-P E-2011	DMN	1	PASI-A		
		SM 5310B-2011	ECH	1	PASI-A		
		92500569004	RW-1	EPA 6010D	SH1	6	PASI-A
				EPA 6020B	JOR	2	PASI-A
				SM 2320B-2011	ECH	2	PASI-A
SM 2540C-2011	RED			1	PASI-A		

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SAMPLE ANALYTE COUNT

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	CJL	2	PASI-A
		SM 4500-P E-2011	DMN	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569005	RW-2	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	CJL	2	PASI-A
		SM 4500-P E-2011	DMN	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569006	RW-3	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	CJL	2	PASI-A
		SM 4500-P E-2011	DMN	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569007	RW-7	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A

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SAMPLE ANALYTE COUNT

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	CJL	2	PASI-A
		SM 4500-P E-2011	DMN	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569008	RW-8	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	CJL	2	PASI-A
		SM 4500-P E-2011	DMN	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569009	RW-9	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	RED	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	CJL	2	PASI-A
		SM 4500-P E-2011	DMN	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569010	RW-10	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A

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SAMPLE ANALYTE COUNT

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	CJL	2	PASI-A
		SM 4500-P E-2011	DMN	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569011	DUP-1	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	CJL	2	PASI-A
		SM 4500-P E-2011	DMN	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569012	FBL101420	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
92500569013	MCM-05	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	MFO	2	PASI-A
		SM 4500-P E-2011	JP1	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569014	DPZ-2	EPA 6010D	SH1	6	PASI-A

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SAMPLE ANALYTE COUNT

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	MFO	2	PASI-A
		SM 4500-P E-2011	JP1	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569015	RW-4	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	MFO	2	PASI-A
		SM 4500-P E-2011	JP1	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569016	RW-5	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	MFO	2	PASI-A
		SM 4500-P E-2011	JP1	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569017	RW-6	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A

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SAMPLE ANALYTE COUNT

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C-2011	ALP	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	MFO	2	PASI-A
		SM 4500-P E-2011	JP1	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569018	DUP-2	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	MFO	2	PASI-A
		SM 4500-P E-2011	JP1	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A
92500569019	FBL101520	EPA 6010D	SH1	6	PASI-A
		EPA 6020B	JOR	2	PASI-A
		SM 2320B-2011	ECH	2	PASI-A
		SM 2540C-2011	ALP	1	PASI-A
		SM 3500-Fe D#4	EWS	1	PASI-A
		SM 3500-Fe B-2011	NAL	1	PASI-A
		SM 4500-S2D-2011	NAL	1	PASI-A
		SM 5210B-2011	JP1	1	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	2	PASI-A
		EPA 353.2 Rev 2.0 1993	MFO	2	PASI-A
		SM 4500-P E-2011	JP1	1	PASI-A
		SM 5310B-2011	ECH	1	PASI-A

PASI-A = Pace Analytical Services - Asheville

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS APP III
Pace Project No.: 92500569

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500569001	MCM-06					
	Performed by	CUSTOME			10/27/20 13:57	
		R				
	pH	6.93	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	193	mg/L	0.50	10/29/20 01:26	
EPA 6010D	Magnesium	445	mg/L	0.50	10/29/20 01:26	
EPA 6010D	Manganese	0.24	mg/L	0.025	10/29/20 01:26	
EPA 6010D	Potassium	121	mg/L	100	10/28/20 09:36	
EPA 6020B	Arsenic	0.45	mg/L	0.0050	10/20/20 13:34	
EPA 6020B	Boron	1.5	mg/L	0.75	10/20/20 13:34	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	532	mg/L	5.0	10/27/20 16:07	
SM 3500-Fe B-2011	Iron, Ferrous	0.099J	mg/L	0.50	10/22/20 12:36	H3,N2
SM 4500-S2D-2011	Sulfide	50.8	mg/L	10.0	10/19/20 20:08	
EPA 300.0 Rev 2.1 1993	Chloride	6930	mg/L	100	10/17/20 17:31	
EPA 300.0 Rev 2.1 1993	Sulfate	552	mg/L	100	10/17/20 17:31	
SM 4500-P E-2011	Orthophosphate as P	0.81	mg/L	0.25	10/15/20 20:59	
SM 5310B-2011	Total Organic Carbon	9.3	mg/L	1.0	10/28/20 03:18	
92500569002	MCM-07					
	Performed by	CUSTOME			10/27/20 13:57	
		R				
	pH	6.32	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	216	mg/L	0.50	10/29/20 01:29	
EPA 6010D	Magnesium	614	mg/L	2.0	10/28/20 09:39	
EPA 6010D	Manganese	0.13	mg/L	0.025	10/29/20 01:29	
EPA 6010D	Potassium	148	mg/L	100	10/28/20 09:39	
EPA 6010D	Sodium	4310	mg/L	250	10/30/20 14:14	
EPA 6020B	Arsenic	0.015	mg/L	0.0050	10/19/20 19:03	
EPA 6020B	Boron	1.7	mg/L	1.2	10/20/20 13:38	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	253	mg/L	5.0	10/27/20 16:18	
SM 4500-S2D-2011	Sulfide	25.7	mg/L	10.0	10/19/20 20:08	
EPA 300.0 Rev 2.1 1993	Chloride	8170	mg/L	100	10/17/20 18:13	
EPA 300.0 Rev 2.1 1993	Sulfate	938	mg/L	100	10/17/20 18:13	
SM 4500-P E-2011	Orthophosphate as P	0.59	mg/L	0.25	10/15/20 20:51	
SM 5310B-2011	Total Organic Carbon	15.9	mg/L	1.0	10/28/20 03:34	
92500569003	MCM-14					
	Performed by	CUSTOME			10/27/20 13:57	
		R				
	pH	6.50	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	177	mg/L	0.50	10/29/20 01:33	
EPA 6010D	Magnesium	379	mg/L	0.50	10/29/20 01:33	
EPA 6010D	Manganese	0.29	mg/L	0.025	10/29/20 01:33	
EPA 6010D	Potassium	107	mg/L	100	10/28/20 09:43	
EPA 6010D	Sodium	3420	mg/L	250	10/30/20 14:17	
EPA 6020B	Boron	1.2	mg/L	0.75	10/20/20 13:42	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	164	mg/L	5.0	10/27/20 16:41	
SM 4500-S2D-2011	Sulfide	15.7	mg/L	10.0	10/19/20 20:09	
EPA 300.0 Rev 2.1 1993	Chloride	6230	mg/L	100	10/17/20 18:26	
EPA 300.0 Rev 2.1 1993	Sulfate	682	mg/L	100	10/17/20 18:26	

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SUMMARY OF DETECTION

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500569003	MCM-14					
SM 4500-P E-2011	Orthophosphate as P	0.58	mg/L	0.25	10/15/20 20:41	M1
SM 5310B-2011	Total Organic Carbon	5.0	mg/L	1.0	10/28/20 04:27	
92500569004	RW-1					
	Performed by	CUSTOMER			10/27/20 13:57	
	pH	6.45	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	151	mg/L	0.50	10/29/20 01:36	
EPA 6010D	Iron	1.0	mg/L	0.25	10/29/20 01:36	
EPA 6010D	Magnesium	418	mg/L	0.50	10/29/20 01:36	
EPA 6010D	Manganese	0.18	mg/L	0.025	10/29/20 01:36	
EPA 6010D	Potassium	158	mg/L	100	10/28/20 09:46	
EPA 6010D	Sodium	4280	mg/L	250	10/30/20 14:21	
EPA 6020B	Arsenic	0.0018J	mg/L	0.0050	10/19/20 19:11	
EPA 6020B	Boron	2.3	mg/L	1.2	10/20/20 13:46	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	234	mg/L	5.0	10/27/20 16:52	
SM 2540C-2011	Total Dissolved Solids	17800	mg/L	2500	10/19/20 18:33	
SM 3500-Fe B-2011	Iron, Ferrous	1.1	mg/L	0.50	10/22/20 12:16	H3,N2
EPA 300.0 Rev 2.1 1993	Chloride	7340	mg/L	100	10/17/20 18:40	
EPA 300.0 Rev 2.1 1993	Sulfate	836	mg/L	100	10/17/20 18:40	
SM 4500-P E-2011	Orthophosphate as P	0.65	mg/L	0.25	10/15/20 20:40	M1
SM 5310B-2011	Total Organic Carbon	15.1	mg/L	1.0	10/28/20 04:43	
92500569005	RW-2					
	Performed by	CUSTOMER			10/27/20 13:57	
	pH	6.53	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	132	mg/L	0.50	10/29/20 01:40	
EPA 6010D	Magnesium	436	mg/L	0.50	10/29/20 01:40	
EPA 6010D	Manganese	0.12	mg/L	0.025	10/29/20 01:40	
EPA 6010D	Potassium	171	mg/L	100	10/28/20 09:49	
EPA 6010D	Sodium	4540	mg/L	250	10/30/20 14:24	
EPA 6020B	Boron	3.1	mg/L	1.2	10/20/20 13:49	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	151	mg/L	5.0	10/27/20 17:02	
SM 2540C-2011	Total Dissolved Solids	20600	mg/L	2500	10/19/20 18:33	
SM 4500-S2D-2011	Sulfide	0.19	mg/L	0.10	10/19/20 18:12	
EPA 300.0 Rev 2.1 1993	Chloride	7870	mg/L	100	10/17/20 18:54	
EPA 300.0 Rev 2.1 1993	Sulfate	984	mg/L	100	10/17/20 18:54	
SM 4500-P E-2011	Orthophosphate as P	0.66	mg/L	0.25	10/15/20 20:54	
SM 5310B-2011	Total Organic Carbon	7.9	mg/L	1.0	10/28/20 19:55	
92500569006	RW-3					
	Performed by	CUSTOMER			10/27/20 13:57	
	pH	6.26	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	118	mg/L	0.50	10/29/20 01:43	
EPA 6010D	Iron	1.5	mg/L	0.25	10/29/20 01:43	
EPA 6010D	Magnesium	380	mg/L	0.50	10/29/20 01:43	
EPA 6010D	Manganese	0.14	mg/L	0.025	10/29/20 01:43	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500569006	RW-3					
EPA 6010D	Potassium	156	mg/L	100	10/28/20 09:53	
EPA 6010D	Sodium	4220	mg/L	250	10/30/20 14:27	
EPA 6020B	Boron	2.5	mg/L	1.2	10/21/20 12:35	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	147	mg/L	5.0	10/27/20 17:13	
SM 2540C-2011	Total Dissolved Solids	19100	mg/L	2500	10/19/20 18:33	
SM 3500-Fe D#4	Iron, Ferric	0.79	mg/L	0.50	11/02/20 17:20	N2
SM 3500-Fe B-2011	Iron, Ferrous	0.71	mg/L	0.50	10/22/20 12:38	H3,N2
SM 4500-S2D-2011	Sulfide	2.1	mg/L	0.50	10/19/20 20:09	
EPA 300.0 Rev 2.1 1993	Chloride	7370	mg/L	100	10/17/20 19:07	
EPA 300.0 Rev 2.1 1993	Sulfate	930	mg/L	100	10/17/20 19:07	
SM 4500-P E-2011	Orthophosphate as P	0.47	mg/L	0.25	10/15/20 21:00	
SM 5310B-2011	Total Organic Carbon	10.2	mg/L	1.0	10/28/20 20:11	
92500569007	RW-7					
	Performed by	CUSTOMER			10/27/20 13:57	
	pH	6.74	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	160	mg/L	0.50	10/29/20 01:46	
EPA 6010D	Magnesium	309	mg/L	0.50	10/29/20 01:46	
EPA 6010D	Manganese	0.13	mg/L	0.025	10/29/20 01:46	
EPA 6010D	Potassium	94.1J	mg/L	100	10/28/20 09:56	
EPA 6010D	Sodium	2150	mg/L	250	10/30/20 14:37	
EPA 6020B	Arsenic	0.013	mg/L	0.0050	10/20/20 13:57	
EPA 6020B	Boron	1.0	mg/L	0.50	10/20/20 13:57	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	301	mg/L	5.0	10/27/20 17:22	
SM 2540C-2011	Total Dissolved Solids	9700	mg/L	1250	10/19/20 18:33	
SM 4500-S2D-2011	Sulfide	52.5	mg/L	10.0	10/19/20 20:09	
EPA 300.0 Rev 2.1 1993	Chloride	3980	mg/L	55.0	10/17/20 19:21	
EPA 300.0 Rev 2.1 1993	Sulfate	310	mg/L	55.0	10/17/20 19:21	
EPA 353.2 Rev 2.0 1993	Nitrogen, Nitrite	0.062	mg/L	0.040	10/16/20 00:23	
SM 4500-P E-2011	Orthophosphate as P	0.68	mg/L	0.25	10/15/20 20:55	
SM 5310B-2011	Total Organic Carbon	8.7	mg/L	1.0	10/28/20 20:28	
92500569008	RW-8					
	Performed by	CUSTOMER			10/27/20 13:57	
	pH	6.25	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	131	mg/L	2.0	10/28/20 09:59	
EPA 6010D	Iron	1.4	mg/L	1.0	10/28/20 09:59	
EPA 6010D	Magnesium	422	mg/L	2.0	10/28/20 09:59	
EPA 6010D	Manganese	0.11	mg/L	0.10	10/28/20 09:59	
EPA 6010D	Potassium	151	mg/L	100	10/28/20 09:59	
EPA 6010D	Sodium	3790	mg/L	250	10/30/20 14:40	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	10/20/20 14:01	
EPA 6020B	Boron	2.5	mg/L	1.2	10/21/20 12:39	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	127	mg/L	5.0	10/27/20 17:53	
SM 2540C-2011	Total Dissolved Solids	17200	mg/L	2500	10/19/20 18:33	
SM 3500-Fe D#4	Iron, Ferric	0.65	mg/L	0.50	11/02/20 17:20	N2
SM 3500-Fe B-2011	Iron, Ferrous	0.75	mg/L	0.50	10/22/20 12:31	H3,N2

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SUMMARY OF DETECTION

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500569008	RW-8					
SM 4500-S2D-2011	Sulfide	0.054J	mg/L	0.10	10/19/20 18:14	
EPA 300.0 Rev 2.1 1993	Chloride	6810	mg/L	100	10/17/20 19:35	
EPA 300.0 Rev 2.1 1993	Sulfate	829	mg/L	100	10/17/20 19:35	
SM 4500-P E-2011	Orthophosphate as P	0.27	mg/L	0.050	10/15/20 21:21	
SM 5310B-2011	Total Organic Carbon	8.0	mg/L	1.0	10/28/20 21:20	
92500569009	RW-9					
	Performed by	CUSTOME			10/27/20 13:57	
		R				
	pH	6.55	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	256	mg/L	2.0	10/20/20 06:56	M6
EPA 6010D	Magnesium	567	mg/L	2.0	10/20/20 06:56	M6
EPA 6010D	Manganese	0.28	mg/L	0.10	10/20/20 06:56	
EPA 6010D	Potassium	151	mg/L	100	10/20/20 06:56	M6
EPA 6010D	Sodium	3820	mg/L	500	10/21/20 19:19	M6, R1
EPA 6020B	Arsenic	0.038	mg/L	0.0050	10/19/20 19:45	
EPA 6020B	Boron	1.6	mg/L	0.75	10/20/20 11:39	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	307	mg/L	5.0	10/27/20 18:02	
SM 2540C-2011	Total Dissolved Solids	17500	mg/L	2500	10/19/20 18:33	
SM 4500-S2D-2011	Sulfide	50.8	mg/L	10.0	10/19/20 20:10	
EPA 300.0 Rev 2.1 1993	Chloride	7160	mg/L	100	10/17/20 19:48	
EPA 300.0 Rev 2.1 1993	Sulfate	731	mg/L	100	10/17/20 19:48	
SM 4500-P E-2011	Orthophosphate as P	0.60	mg/L	0.25	10/15/20 20:45	
SM 5310B-2011	Total Organic Carbon	9.5	mg/L	1.0	10/28/20 21:36	
92500569010	RW-10					
	Performed by	CUSTOME			10/27/20 13:57	
		R				
	pH	6.63	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	138	mg/L	2.0	10/20/20 07:15	
EPA 6010D	Magnesium	378	mg/L	2.0	10/20/20 07:15	
EPA 6010D	Manganese	0.16	mg/L	0.10	10/20/20 07:15	
EPA 6010D	Potassium	136	mg/L	100	10/20/20 07:15	
EPA 6010D	Sodium	3200	mg/L	500	10/21/20 19:44	
EPA 6020B	Arsenic	0.0058	mg/L	0.0050	10/19/20 19:49	
EPA 6020B	Boron	1.8	mg/L	0.75	10/20/20 11:42	M6
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	192	mg/L	5.0	10/27/20 18:13	
SM 2540C-2011	Total Dissolved Solids	11800	mg/L	2500	10/20/20 12:07	D6
SM 4500-S2D-2011	Sulfide	1.6	mg/L	0.50	10/19/20 20:13	
EPA 300.0 Rev 2.1 1993	Chloride	5880	mg/L	100	10/18/20 14:44	
EPA 300.0 Rev 2.1 1993	Sulfate	701	mg/L	100	10/18/20 14:44	
SM 4500-P E-2011	Orthophosphate as P	0.51	mg/L	0.25	10/15/20 20:52	
SM 5310B-2011	Total Organic Carbon	9.4	mg/L	1.0	10/28/20 21:52	
92500569011	DUP-1					
EPA 6010D	Calcium	144	mg/L	2.0	10/20/20 07:19	
EPA 6010D	Iron	1.9	mg/L	1.0	10/20/20 07:19	
EPA 6010D	Magnesium	431	mg/L	2.0	10/20/20 07:19	
EPA 6010D	Manganese	0.16	mg/L	0.10	10/20/20 07:19	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500569011	DUP-1					
EPA 6010D	Potassium	171	mg/L	100	10/20/20 07:19	
EPA 6010D	Sodium	4290	mg/L	500	10/21/20 19:48	
EPA 6020B	Boron	2.8	mg/L	1.2	10/20/20 11:46	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	141	mg/L	5.0	10/28/20 13:07	
SM 2540C-2011	Total Dissolved Solids	17700	mg/L	2500	10/20/20 12:08	
SM 3500-Fe D#4	Iron, Ferric	0.64	mg/L	0.50	10/23/20 16:20	N2
SM 3500-Fe B-2011	Iron, Ferrous	1.2	mg/L	0.50	10/22/20 12:26	H3,N2
SM 4500-S2D-2011	Sulfide	2.3	mg/L	0.50	10/19/20 20:14	
EPA 300.0 Rev 2.1 1993	Chloride	7960	mg/L	100	10/19/20 22:54	
EPA 300.0 Rev 2.1 1993	Sulfate	1050	mg/L	100	10/19/20 22:54	
SM 4500-P E-2011	Orthophosphate as P	0.54	mg/L	0.25	10/15/20 20:53	
SM 5310B-2011	Total Organic Carbon	10.2	mg/L	1.0	10/28/20 22:09	
92500569012	FBL101420					
SM 2540C-2011	Total Dissolved Solids	26.0	mg/L	25.0	10/20/20 12:08	
EPA 300.0 Rev 2.1 1993	Chloride	1.3	mg/L	1.0	10/18/20 00:03	
92500569013	MCM-05					
	Performed by	CUSTOME			10/27/20 13:57	
		R				
	pH	6.53	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	60.7	mg/L	2.0	10/20/20 07:25	
EPA 6010D	Magnesium	138	mg/L	2.0	10/20/20 07:25	
EPA 6010D	Sodium	996	mg/L	100	10/20/20 07:25	
EPA 6020B	Boron	0.67	mg/L	0.50	10/20/20 11:50	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	174	mg/L	5.0	10/28/20 18:29	
SM 4500-S2D-2011	Sulfide	21.0	mg/L	5.0	10/19/20 20:15	
SM 5210B-2011	BOD, 5 day	4.2	mg/L	2.0	10/22/20 00:49	B2
EPA 300.0 Rev 2.1 1993	Chloride	1660	mg/L	100	10/21/20 09:59	
EPA 300.0 Rev 2.1 1993	Sulfate	148	mg/L	100	10/21/20 09:59	
SM 4500-P E-2011	Orthophosphate as P	0.37	mg/L	0.050	10/17/20 05:11	
SM 5310B-2011	Total Organic Carbon	6.6	mg/L	1.0	10/29/20 01:07	
92500569014	DPZ-2					
	Performed by	CUSTOME			10/27/20 13:57	
		R				
	pH	7.08	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	225	mg/L	2.0	10/20/20 07:29	
EPA 6010D	Magnesium	485	mg/L	2.0	10/20/20 07:29	
EPA 6010D	Manganese	0.26	mg/L	0.10	10/20/20 07:29	
EPA 6010D	Potassium	151	mg/L	100	10/20/20 07:29	
EPA 6010D	Sodium	4720	mg/L	500	10/21/20 19:51	
EPA 6020B	Arsenic	0.021	mg/L	0.0050	10/19/20 20:28	
EPA 6020B	Boron	2.1	mg/L	1.2	10/20/20 11:54	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	349	mg/L	5.0	10/28/20 18:42	
SM 3500-Fe D#4	Iron, Ferric	0.35J	mg/L	0.50	10/23/20 16:19	N2
SM 4500-S2D-2011	Sulfide	41.6	mg/L	10.0	10/19/20 20:15	
EPA 300.0 Rev 2.1 1993	Chloride	8000	mg/L	100	10/21/20 20:13	
EPA 300.0 Rev 2.1 1993	Sulfate	989	mg/L	19.0	10/21/20 10:13	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS APP III
Pace Project No.: 92500569

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500569014	DPZ-2					
SM 4500-P E-2011	Orthophosphate as P	0.13J	mg/L	0.25	10/17/20 05:17	
SM 5310B-2011	Total Organic Carbon	7.0	mg/L	1.0	10/29/20 01:23	
92500569015	RW-4					
	Performed by	CUSTOMER			10/27/20 13:57	
	pH	6.24	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	128	mg/L	2.0	10/20/20 07:32	
EPA 6010D	Iron	2.6	mg/L	1.0	10/20/20 07:32	
EPA 6010D	Magnesium	373	mg/L	2.0	10/20/20 07:32	
EPA 6010D	Manganese	0.23	mg/L	0.10	10/20/20 07:32	
EPA 6010D	Potassium	145	mg/L	100	10/20/20 07:32	
EPA 6010D	Sodium	3370	mg/L	500	10/21/20 19:54	
EPA 6020B	Arsenic	0.0028J	mg/L	0.0050	10/19/20 20:31	
EPA 6020B	Boron	2.1	mg/L	1.2	10/20/20 12:06	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	131	mg/L	5.0	10/28/20 18:52	
SM 2540C-2011	Total Dissolved Solids	13100	mg/L	2500	10/20/20 12:08	
SM 3500-Fe D#4	Iron, Ferric	1.6	mg/L	0.50	10/23/20 16:19	N2
SM 3500-Fe B-2011	Iron, Ferrous	1.1	mg/L	0.50	10/22/20 12:45	H3,N2
SM 4500-S2D-2011	Sulfide	0.44	mg/L	0.10	10/19/20 18:33	
EPA 300.0 Rev 2.1 1993	Chloride	5600	mg/L	100	10/21/20 10:27	
EPA 300.0 Rev 2.1 1993	Sulfate	732	mg/L	100	10/21/20 10:27	
SM 4500-P E-2011	Orthophosphate as P	0.21	mg/L	0.050	10/17/20 05:14	
SM 5310B-2011	Total Organic Carbon	11.0	mg/L	1.0	10/29/20 01:40	
92500569016	RW-5					
	Performed by	CUSTOMER			10/27/20 13:57	
	pH	6.62	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	152	mg/L	2.0	10/20/20 07:35	
EPA 6010D	Iron	1.3	mg/L	1.0	10/20/20 07:35	
EPA 6010D	Magnesium	397	mg/L	2.0	10/20/20 07:35	
EPA 6010D	Manganese	0.14	mg/L	0.10	10/20/20 07:35	
EPA 6010D	Potassium	159	mg/L	100	10/20/20 07:35	
EPA 6010D	Sodium	3770	mg/L	500	10/21/20 19:57	
EPA 6020B	Arsenic	0.0026J	mg/L	0.0050	10/19/20 20:35	
EPA 6020B	Boron	2.7	mg/L	1.2	10/20/20 12:09	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	197	mg/L	5.0	10/28/20 19:02	
SM 2540C-2011	Total Dissolved Solids	15500	mg/L	2500	10/20/20 12:08	
SM 3500-Fe D#4	Iron, Ferric	0.94	mg/L	0.50	10/23/20 16:19	N2
SM 3500-Fe B-2011	Iron, Ferrous	0.32J	mg/L	0.50	10/22/20 12:45	H3,N2
SM 4500-S2D-2011	Sulfide	0.95	mg/L	0.10	10/19/20 18:34	
EPA 300.0 Rev 2.1 1993	Chloride	6190	mg/L	100	10/21/20 10:41	
EPA 300.0 Rev 2.1 1993	Sulfate	806	mg/L	100	10/21/20 10:41	
SM 4500-P E-2011	Orthophosphate as P	1.0	mg/L	0.50	10/17/20 05:15	
SM 5310B-2011	Total Organic Carbon	11.9	mg/L	1.0	10/29/20 01:56	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92500569017	RW-6					
	Performed by	CUSTOME			10/27/20 13:57	
		R				
	pH	6.15	Std. Units		10/27/20 13:57	
EPA 6010D	Calcium	153	mg/L	2.0	10/20/20 07:39	
EPA 6010D	Magnesium	447	mg/L	2.0	10/20/20 07:39	
EPA 6010D	Potassium	164	mg/L	100	10/20/20 07:39	
EPA 6010D	Sodium	4050	mg/L	500	10/21/20 20:01	
EPA 6020B	Arsenic	0.0029J	mg/L	0.0050	10/19/20 20:39	
EPA 6020B	Boron	2.5	mg/L	1.2	10/20/20 12:13	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	108	mg/L	5.0	10/28/20 19:21	
SM 2540C-2011	Total Dissolved Solids	16400	mg/L	2500	10/20/20 12:09	
SM 3500-Fe B-2011	Iron, Ferrous	0.41J	mg/L	0.50	10/22/20 12:43	H3,N2
SM 4500-S2D-2011	Sulfide	8.3	mg/L	2.5	10/19/20 20:17	
EPA 300.0 Rev 2.1 1993	Chloride	7030	mg/L	100	10/21/20 10:54	
EPA 300.0 Rev 2.1 1993	Sulfate	839	mg/L	100	10/21/20 10:54	
SM 4500-P E-2011	Orthophosphate as P	0.23	mg/L	0.050	10/17/20 05:11	
SM 5310B-2011	Total Organic Carbon	7.6	mg/L	1.0	10/29/20 02:15	
92500569018	DUP-2					
EPA 6010D	Calcium	148	mg/L	2.0	10/20/20 07:55	
EPA 6010D	Iron	1.2	mg/L	1.0	10/20/20 07:55	
EPA 6010D	Magnesium	389	mg/L	2.0	10/20/20 07:55	
EPA 6010D	Manganese	0.14	mg/L	0.10	10/20/20 07:55	
EPA 6010D	Potassium	156	mg/L	100	10/20/20 07:55	
EPA 6010D	Sodium	3850	mg/L	500	10/21/20 20:04	
EPA 6020B	Arsenic	0.0027J	mg/L	0.0050	10/19/20 20:43	
EPA 6020B	Boron	2.5	mg/L	1.2	10/20/20 12:17	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	190	mg/L	5.0	10/28/20 19:47	
SM 2540C-2011	Total Dissolved Solids	14800	mg/L	2500	10/20/20 12:09	
SM 3500-Fe D#4	Iron, Ferric	0.80	mg/L	0.50	10/23/20 16:19	N2
SM 3500-Fe B-2011	Iron, Ferrous	0.39J	mg/L	0.50	10/22/20 12:40	H3,N2
EPA 300.0 Rev 2.1 1993	Chloride	6200	mg/L	100	10/21/20 11:08	
EPA 300.0 Rev 2.1 1993	Sulfate	805	mg/L	100	10/21/20 11:08	
SM 4500-P E-2011	Orthophosphate as P	0.64	mg/L	0.50	10/17/20 05:06	H1
SM 5310B-2011	Total Organic Carbon	11.9	mg/L	1.0	10/29/20 05:28	
92500569019	FBL101520					
EPA 300.0 Rev 2.1 1993	Chloride	6.0	mg/L	1.0	10/21/20 02:15	
EPA 300.0 Rev 2.1 1993	Sulfate	0.66J	mg/L	1.0	10/21/20 02:15	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: MCM-06									
Lab ID: 92500569001									
Collected: 10/14/20 16:52									
Received: 10/15/20 10:49									
Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.93	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	193	mg/L	0.50	0.47	5	10/28/20 00:59	10/29/20 01:26	7440-70-2	
Iron	ND	mg/L	0.25	0.21	5	10/28/20 00:59	10/29/20 01:26	7439-89-6	
Magnesium	445	mg/L	0.50	0.34	5	10/28/20 00:59	10/29/20 01:26	7439-95-4	
Manganese	0.24	mg/L	0.025	0.017	5	10/28/20 00:59	10/29/20 01:26	7439-96-5	
Potassium	121	mg/L	100	60.8	20	10/28/20 00:59	10/28/20 09:36	7440-09-7	
Sodium	ND	mg/L	250	30.5	50	10/28/20 00:59	10/30/20 14:11	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.45	mg/L	0.0050	0.0026	30	10/16/20 01:08	10/20/20 13:34	7440-38-2	
Boron	1.5	mg/L	0.75	0.19	30	10/16/20 01:08	10/20/20 13:34	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	532	mg/L	5.0	5.0	1		10/27/20 16:07		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/27/20 16:07		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4									
Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		11/02/20 17:20	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011									
Pace Analytical Services - Asheville									
Iron, Ferrous	0.099J	mg/L	0.50	0.084	1		10/22/20 12:36		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	50.8	mg/L	10.0	5.0	100		10/19/20 20:08	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011									
Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 06:40	10/21/20 02:29		B2
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	6930	mg/L	100	60.0	100		10/17/20 17:31	16887-00-6	
Sulfate	552	mg/L	100	50.0	100		10/17/20 17:31	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS APP III
Pace Project No.: 92500569

Sample: MCM-06		Lab ID: 92500569001		Collected: 10/14/20 16:52	Received: 10/15/20 10:49	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 01:02	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/16/20 01:02	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.81	mg/L	0.25	0.059	5		10/15/20 20:59		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	9.3	mg/L	1.0	0.50	1		10/28/20 03:18	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: MCM-07		Lab ID: 92500569002		Collected: 10/14/20 14:42		Received: 10/15/20 10:49		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.32	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	216	mg/L	0.50	0.47	5	10/28/20 00:59	10/29/20 01:29	7440-70-2	
Iron	ND	mg/L	0.25	0.21	5	10/28/20 00:59	10/29/20 01:29	7439-89-6	
Magnesium	614	mg/L	2.0	1.4	20	10/28/20 00:59	10/28/20 09:39	7439-95-4	
Manganese	0.13	mg/L	0.025	0.017	5	10/28/20 00:59	10/29/20 01:29	7439-96-5	
Potassium	148	mg/L	100	60.8	20	10/28/20 00:59	10/28/20 09:39	7440-09-7	
Sodium	4310	mg/L	250	30.5	50	10/28/20 00:59	10/30/20 14:14	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.015	mg/L	0.0050	0.0017	20	10/16/20 01:08	10/19/20 19:03	7440-38-2	
Boron	1.7	mg/L	1.2	0.31	50	10/16/20 01:08	10/20/20 13:38	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	253	mg/L	5.0	5.0	1		10/27/20 16:18		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/27/20 16:18		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		11/02/20 17:20	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	ND	mg/L	0.50	0.084	1		10/22/20 12:21		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	25.7	mg/L	10.0	5.0	100		10/19/20 20:08	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 04:44	10/21/20 01:38		B2
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	8170	mg/L	100	60.0	100		10/17/20 18:13	16887-00-6	
Sulfate	938	mg/L	100	50.0	100		10/17/20 18:13	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: MCM-07		Lab ID: 92500569002		Collected: 10/14/20 14:42	Received: 10/15/20 10:49	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 01:04	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/16/20 01:04	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.59	mg/L	0.25	0.059	5		10/15/20 20:51		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	15.9	mg/L	1.0	0.50	1		10/28/20 03:34	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: MCM-14 **Lab ID: 92500569003** Collected: 10/14/20 13:00 Received: 10/15/20 10:49 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.50	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	177	mg/L	0.50	0.47	5	10/28/20 00:59	10/29/20 01:33	7440-70-2	
Iron	ND	mg/L	0.25	0.21	5	10/28/20 00:59	10/29/20 01:33	7439-89-6	
Magnesium	379	mg/L	0.50	0.34	5	10/28/20 00:59	10/29/20 01:33	7439-95-4	
Manganese	0.29	mg/L	0.025	0.017	5	10/28/20 00:59	10/29/20 01:33	7439-96-5	
Potassium	107	mg/L	100	60.8	20	10/28/20 00:59	10/28/20 09:43	7440-09-7	
Sodium	3420	mg/L	250	30.5	50	10/28/20 00:59	10/30/20 14:17	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.0017	20	10/16/20 01:08	10/19/20 19:07	7440-38-2	
Boron	1.2	mg/L	0.75	0.19	30	10/16/20 01:08	10/20/20 13:42	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	164	mg/L	5.0	5.0	1		10/27/20 16:41		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/27/20 16:41		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		11/02/20 17:20	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	ND	mg/L	0.50	0.084	1		10/22/20 12:19		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	15.7	mg/L	10.0	5.0	100		10/19/20 20:09	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 04:44	10/21/20 01:17		B2
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6230	mg/L	100	60.0	100		10/17/20 18:26	16887-00-6	
Sulfate	682	mg/L	100	50.0	100		10/17/20 18:26	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: MCM-14		Lab ID: 92500569003		Collected: 10/14/20 13:00	Received: 10/15/20 10:49	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres									
Analytical Method: EPA 353.2 Rev 2.0 1993									
Pace Analytical Services - Asheville									
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 01:05	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/16/20 01:05	14797-65-0	
SM4500P-E, Phosphate, Ortho									
Analytical Method: SM 4500-P E-2011									
Pace Analytical Services - Asheville									
Orthophosphate as P	0.58	mg/L	0.25	0.059	5		10/15/20 20:41		M1
5310B TOC									
Analytical Method: SM 5310B-2011									
Pace Analytical Services - Asheville									
Total Organic Carbon	5.0	mg/L	1.0	0.50	1		10/28/20 04:27	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III
Pace Project No.: 92500569

Sample: RW-1 Lab ID: 92500569004 Collected: 10/14/20 12:19 Received: 10/15/20 10:49 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.45	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	151	mg/L	0.50	0.47	5	10/28/20 00:59	10/29/20 01:36	7440-70-2	
Iron	1.0	mg/L	0.25	0.21	5	10/28/20 00:59	10/29/20 01:36	7439-89-6	
Magnesium	418	mg/L	0.50	0.34	5	10/28/20 00:59	10/29/20 01:36	7439-95-4	
Manganese	0.18	mg/L	0.025	0.017	5	10/28/20 00:59	10/29/20 01:36	7439-96-5	
Potassium	158	mg/L	100	60.8	20	10/28/20 00:59	10/28/20 09:46	7440-09-7	
Sodium	4280	mg/L	250	30.5	50	10/28/20 00:59	10/30/20 14:21	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0018J	mg/L	0.0050	0.0017	20	10/16/20 01:08	10/19/20 19:11	7440-38-2	
Boron	2.3	mg/L	1.2	0.31	50	10/16/20 01:08	10/20/20 13:46	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	234	mg/L	5.0	5.0	1		10/27/20 16:52		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/27/20 16:52		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	17800	mg/L	2500	2500	1		10/19/20 18:33		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		11/02/20 17:20	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	1.1	mg/L	0.50	0.084	1		10/22/20 12:16		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		10/19/20 18:11	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 04:44	10/21/20 01:13		B2

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-1		Lab ID: 92500569004		Collected: 10/14/20 12:19	Received: 10/15/20 10:49	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	7340	mg/L	100	60.0	100		10/17/20 18:40	16887-00-6	
Sulfate	836	mg/L	100	50.0	100		10/17/20 18:40	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 01:06	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/16/20 01:06	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.65	mg/L	0.25	0.059	5		10/15/20 20:40		M1
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	15.1	mg/L	1.0	0.50	1		10/28/20 04:43	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-2 **Lab ID:** 92500569005 Collected: 10/14/20 15:04 Received: 10/15/20 10:49 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.53	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	132	mg/L	0.50	0.47	5	10/28/20 00:59	10/29/20 01:40	7440-70-2	
Iron	ND	mg/L	0.25	0.21	5	10/28/20 00:59	10/29/20 01:40	7439-89-6	
Magnesium	436	mg/L	0.50	0.34	5	10/28/20 00:59	10/29/20 01:40	7439-95-4	
Manganese	0.12	mg/L	0.025	0.017	5	10/28/20 00:59	10/29/20 01:40	7439-96-5	
Potassium	171	mg/L	100	60.8	20	10/28/20 00:59	10/28/20 09:49	7440-09-7	
Sodium	4540	mg/L	250	30.5	50	10/28/20 00:59	10/30/20 14:24	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.0017	20	10/16/20 01:08	10/19/20 19:14	7440-38-2	
Boron	3.1	mg/L	1.2	0.31	50	10/16/20 01:08	10/20/20 13:49	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	151	mg/L	5.0	5.0	1		10/27/20 17:02		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/27/20 17:02		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	20600	mg/L	2500	2500	1		10/19/20 18:33		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		11/02/20 17:20	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	ND	mg/L	0.50	0.084	1		10/22/20 12:28		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	0.19	mg/L	0.10	0.050	1		10/19/20 18:12	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 04:44	10/21/20 01:52		B2

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-2		Lab ID: 92500569005		Collected: 10/14/20 15:04		Received: 10/15/20 10:49		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	7870	mg/L	100	60.0	100		10/17/20 18:54	16887-00-6	
Sulfate	984	mg/L	100	50.0	100		10/17/20 18:54	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 00:21	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/16/20 00:21	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.66	mg/L	0.25	0.059	5		10/15/20 20:54		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	7.9	mg/L	1.0	0.50	1		10/28/20 19:55	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-3 **Lab ID:** 92500569006 Collected: 10/14/20 17:17 Received: 10/15/20 10:49 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.26	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	118	mg/L	0.50	0.47	5	10/28/20 00:59	10/29/20 01:43	7440-70-2	
Iron	1.5	mg/L	0.25	0.21	5	10/28/20 00:59	10/29/20 01:43	7439-89-6	
Magnesium	380	mg/L	0.50	0.34	5	10/28/20 00:59	10/29/20 01:43	7439-95-4	
Manganese	0.14	mg/L	0.025	0.017	5	10/28/20 00:59	10/29/20 01:43	7439-96-5	
Potassium	156	mg/L	100	60.8	20	10/28/20 00:59	10/28/20 09:53	7440-09-7	
Sodium	4220	mg/L	250	30.5	50	10/28/20 00:59	10/30/20 14:27	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.0017	20	10/20/20 01:40	10/20/20 13:53	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	10/20/20 01:40	10/21/20 12:35	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	147	mg/L	5.0	5.0	1		10/27/20 17:13		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/27/20 17:13		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	19100	mg/L	2500	2500	1		10/19/20 18:33		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	0.79	mg/L	0.50	0.25	1		11/02/20 17:20	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	0.71	mg/L	0.50	0.084	1		10/22/20 12:38		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	2.1	mg/L	0.50	0.25	5		10/19/20 20:09	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 06:40	10/21/20 02:30		B2

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-3		Lab ID: 92500569006		Collected: 10/14/20 17:17		Received: 10/15/20 10:49		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	7370	mg/L	100	60.0	100		10/17/20 19:07	16887-00-6	
Sulfate	930	mg/L	100	50.0	100		10/17/20 19:07	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 00:22	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/16/20 00:22	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.47	mg/L	0.25	0.059	5		10/15/20 21:00		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	10.2	mg/L	1.0	0.50	1		10/28/20 20:11	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-7		Lab ID: 92500569007		Collected: 10/14/20 15:43	Received: 10/15/20 10:49	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.74	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	160	mg/L	0.50	0.47	5	10/28/20 00:59	10/29/20 01:46	7440-70-2	
Iron	ND	mg/L	0.25	0.21	5	10/28/20 00:59	10/29/20 01:46	7439-89-6	
Magnesium	309	mg/L	0.50	0.34	5	10/28/20 00:59	10/29/20 01:46	7439-95-4	
Manganese	0.13	mg/L	0.025	0.017	5	10/28/20 00:59	10/29/20 01:46	7439-96-5	
Potassium	94.1J	mg/L	100	60.8	20	10/28/20 00:59	10/28/20 09:56	7440-09-7	
Sodium	2150	mg/L	250	30.5	50	10/28/20 00:59	10/30/20 14:37	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.013	mg/L	0.0050	0.0017	20	10/20/20 01:40	10/20/20 13:57	7440-38-2	
Boron	1.0	mg/L	0.50	0.12	20	10/20/20 01:40	10/20/20 13:57	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	301	mg/L	5.0	5.0	1		10/27/20 17:22		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/27/20 17:22		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	9700	mg/L	1250	1250	1		10/19/20 18:33		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4									
Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		11/02/20 17:20	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011									
Pace Analytical Services - Asheville									
Iron, Ferrous	ND	mg/L	0.50	0.084	1		10/22/20 12:28		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	52.5	mg/L	10.0	5.0	100		10/19/20 20:09	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011									
Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 04:44	10/21/20 02:00		B2

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-7 Lab ID: 92500569007 Collected: 10/14/20 15:43 Received: 10/15/20 10:49 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	3980	mg/L	55.0	33.0	55		10/17/20 19:21	16887-00-6	
Sulfate	310	mg/L	55.0	27.5	55		10/17/20 19:21	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres									
Analytical Method: EPA 353.2 Rev 2.0 1993									
Pace Analytical Services - Asheville									
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 00:23	14797-55-8	
Nitrogen, Nitrite	0.062	mg/L	0.040	0.010	1		10/16/20 00:23	14797-65-0	
SM4500P-E, Phosphate, Ortho									
Analytical Method: SM 4500-P E-2011									
Pace Analytical Services - Asheville									
Orthophosphate as P	0.68	mg/L	0.25	0.059	5		10/15/20 20:55		
5310B TOC									
Analytical Method: SM 5310B-2011									
Pace Analytical Services - Asheville									
Total Organic Carbon	8.7	mg/L	1.0	0.50	1		10/28/20 20:28	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-8 **Lab ID: 92500569008** Collected: 10/14/20 16:30 Received: 10/15/20 10:49 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.25	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	131	mg/L	2.0	1.9	20	10/28/20 00:59	10/28/20 09:59	7440-70-2	
Iron	1.4	mg/L	1.0	0.83	20	10/28/20 00:59	10/28/20 09:59	7439-89-6	
Magnesium	422	mg/L	2.0	1.4	20	10/28/20 00:59	10/28/20 09:59	7439-95-4	
Manganese	0.11	mg/L	0.10	0.069	20	10/28/20 00:59	10/28/20 09:59	7439-96-5	
Potassium	151	mg/L	100	60.8	20	10/28/20 00:59	10/28/20 09:59	7440-09-7	
Sodium	3790	mg/L	250	30.5	50	10/28/20 00:59	10/30/20 14:40	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0024J	mg/L	0.0050	0.0017	20	10/20/20 01:40	10/20/20 14:01	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	10/20/20 01:40	10/21/20 12:39	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	127	mg/L	5.0	5.0	1		10/27/20 17:53		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/27/20 17:53		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	17200	mg/L	2500	2500	1		10/19/20 18:33		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	0.65	mg/L	0.50	0.25	1		11/02/20 17:20	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	0.75	mg/L	0.50	0.084	1		10/22/20 12:31		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	0.054J	mg/L	0.10	0.050	1		10/19/20 18:14	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 06:40	10/21/20 02:27		B2

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-8		Lab ID: 92500569008		Collected: 10/14/20 16:30	Received: 10/15/20 10:49	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	6810	mg/L	100	60.0	100		10/17/20 19:35	16887-00-6	
Sulfate	829	mg/L	100	50.0	100		10/17/20 19:35	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 00:24	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/16/20 00:24	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.27	mg/L	0.050	0.012	1		10/15/20 21:21		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	8.0	mg/L	1.0	0.50	1		10/28/20 21:20	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III
Pace Project No.: 92500569

Sample: RW-9		Lab ID: 92500569009		Collected: 10/14/20 13:04		Received: 10/15/20 10:49		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.55	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	256	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 06:56	7440-70-2	M6
Iron	ND	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 06:56	7439-89-6	
Magnesium	567	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 06:56	7439-95-4	M6
Manganese	0.28	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 06:56	7439-96-5	
Potassium	151	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 06:56	7440-09-7	M6
Sodium	3820	mg/L	500	61.1	100	10/17/20 00:45	10/21/20 19:19	7440-23-5	M6,R1
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.038	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 19:45	7440-38-2	
Boron	1.6	mg/L	0.75	0.19	30	10/17/20 00:41	10/20/20 11:39	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	307	mg/L	5.0	5.0	1		10/27/20 18:02		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/27/20 18:02		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	17500	mg/L	2500	2500	1		10/19/20 18:33		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		10/23/20 16:20	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	ND	mg/L	0.50	0.084	1		10/22/20 12:21		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	50.8	mg/L	10.0	5.0	100		10/19/20 20:10	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 04:44	10/21/20 01:26		B2

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-9		Lab ID: 92500569009		Collected: 10/14/20 13:04	Received: 10/15/20 10:49	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	7160	mg/L	100	60.0	100		10/17/20 19:48	16887-00-6	
Sulfate	731	mg/L	100	50.0	100		10/17/20 19:48	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 00:26	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/16/20 00:26	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.60	mg/L	0.25	0.059	5		10/15/20 20:45		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	9.5	mg/L	1.0	0.50	1		10/28/20 21:36	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III
Pace Project No.: 92500569

Sample: RW-10									
Lab ID: 92500569010									
Collected: 10/14/20 15:00									
Received: 10/15/20 10:49									
Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.63	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Calcium	138	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 07:15	7440-70-2	
Iron	ND	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 07:15	7439-89-6	
Magnesium	378	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 07:15	7439-95-4	
Manganese	0.16	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 07:15	7439-96-5	
Potassium	136	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 07:15	7440-09-7	
Sodium	3200	mg/L	500	61.1	100	10/17/20 00:45	10/21/20 19:44	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A									
Pace Analytical Services - Asheville									
Arsenic	0.0058	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 19:49	7440-38-2	
Boron	1.8	mg/L	0.75	0.19	30	10/17/20 00:41	10/20/20 11:42	7440-42-8	M6
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	192	mg/L	5.0	5.0	1		10/27/20 18:13		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/27/20 18:13		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011									
Pace Analytical Services - Asheville									
Total Dissolved Solids	11800	mg/L	2500	2500	1		10/20/20 12:07		D6
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4									
Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		10/23/20 16:20	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011									
Pace Analytical Services - Asheville									
Iron, Ferrous	ND	mg/L	0.50	0.084	1		10/22/20 12:23		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	1.6	mg/L	0.50	0.25	5		10/19/20 20:13	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011									
Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 04:44	10/21/20 01:43		

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-10		Lab ID: 92500569010		Collected: 10/14/20 15:00	Received: 10/15/20 10:49	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	5880	mg/L	100	60.0	100		10/18/20 14:44	16887-00-6	
Sulfate	701	mg/L	100	50.0	100		10/18/20 14:44	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 00:27	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/16/20 00:27	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.51	mg/L	0.25	0.059	5		10/15/20 20:52		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	9.4	mg/L	1.0	0.50	1		10/28/20 21:52	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: DUP-1		Lab ID: 92500569011		Collected: 10/14/20 15:00		Received: 10/15/20 10:49		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Calcium	144	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 07:19	7440-70-2	
Iron	1.9	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 07:19	7439-89-6	
Magnesium	431	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 07:19	7439-95-4	
Manganese	0.16	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 07:19	7439-96-5	
Potassium	171	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 07:19	7440-09-7	
Sodium	4290	mg/L	500	61.1	100	10/17/20 00:45	10/21/20 19:48	7440-23-5	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	ND	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 20:16	7440-38-2	
Boron	2.8	mg/L	1.2	0.31	50	10/17/20 00:41	10/20/20 11:46	7440-42-8	
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity,Bicarbonate (CaCO3)	141	mg/L	5.0	5.0	1		10/28/20 13:07		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/28/20 13:07		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville							
Total Dissolved Solids	17700	mg/L	2500	2500	1		10/20/20 12:08		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville							
Iron, Ferric	0.64	mg/L	0.50	0.25	1		10/23/20 16:20	7439-89-6	N2
Iron, Ferrous		Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville							
Iron, Ferrous	1.2	mg/L	0.50	0.084	1		10/22/20 12:26		H3,N2
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville							
Sulfide	2.3	mg/L	0.50	0.25	5		10/19/20 20:14	18496-25-8	
5210B BOD, 5 day		Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville							
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/16/20 04:44	10/21/20 01:44		B2
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	7960	mg/L	100	60.0	100		10/19/20 22:54	16887-00-6	
Sulfate	1050	mg/L	100	50.0	100		10/19/20 22:54	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: DUP-1		Lab ID: 92500569011		Collected: 10/14/20 15:00	Received: 10/15/20 10:49	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/16/20 00:30	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/16/20 00:30	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.54	mg/L	0.25	0.059	5		10/15/20 20:53		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	10.2	mg/L	1.0	0.50	1		10/28/20 22:09	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: FBL101420 Lab ID: 92500569012 Collected: 10/14/20 16:47 Received: 10/15/20 10:49 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	ND	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 07:22	7440-70-2	
Iron	ND	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 07:22	7439-89-6	
Magnesium	ND	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 07:22	7439-95-4	
Manganese	ND	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 07:22	7439-96-5	
Potassium	ND	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 07:22	7440-09-7	
Sodium	ND	mg/L	100	12.2	20	10/17/20 00:45	10/20/20 07:22	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.000087	1	10/17/20 00:41	10/19/20 20:20	7440-38-2	
Boron	ND	mg/L	0.025	0.0062	1	10/17/20 00:41	10/20/20 10:38	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/28/20 12:50		
Alkalinity,Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/28/20 12:50		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	26.0	mg/L	25.0	25.0	1		10/20/20 12:08		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		10/23/20 16:19	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	ND	mg/L	0.50	0.084	1		10/22/20 12:33		H3,N2
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1.3	mg/L	1.0	0.60	1		10/18/20 00:03	16887-00-6	
Sulfate	ND	mg/L	1.0	0.50	1		10/18/20 00:03	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: MCM-05 Lab ID: 92500569013 Collected: 10/15/20 13:48 Received: 10/16/20 10:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.53	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	60.7	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 07:25	7440-70-2	
Iron	ND	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 07:25	7439-89-6	
Magnesium	138	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 07:25	7439-95-4	
Manganese	ND	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 07:25	7439-96-5	
Potassium	ND	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 07:25	7440-09-7	
Sodium	996	mg/L	100	12.2	20	10/17/20 00:45	10/20/20 07:25	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 20:24	7440-38-2	
Boron	0.67	mg/L	0.50	0.12	20	10/17/20 00:41	10/20/20 11:50	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	174	mg/L	5.0	5.0	1		10/28/20 18:29		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/28/20 18:29		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		10/23/20 16:19	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	ND	mg/L	0.50	0.084	1		10/22/20 12:43		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	21.0	mg/L	5.0	2.5	50		10/19/20 20:15	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	4.2	mg/L	2.0	2.0	1	10/17/20 04:03	10/22/20 00:49		B2
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	1660	mg/L	100	60.0	100		10/21/20 09:59	16887-00-6	
Sulfate	148	mg/L	100	50.0	100		10/21/20 09:59	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: MCM-05 Lab ID: 92500569013 Collected: 10/15/20 13:48 Received: 10/16/20 10:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres									
Analytical Method: EPA 353.2 Rev 2.0 1993									
Pace Analytical Services - Asheville									
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/17/20 00:27	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/17/20 00:27	14797-65-0	
SM4500P-E, Phosphate, Ortho									
Analytical Method: SM 4500-P E-2011									
Pace Analytical Services - Asheville									
Orthophosphate as P	0.37	mg/L	0.050	0.012	1		10/17/20 05:11		
5310B TOC									
Analytical Method: SM 5310B-2011									
Pace Analytical Services - Asheville									
Total Organic Carbon	6.6	mg/L	1.0	0.50	1		10/29/20 01:07	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III
Pace Project No.: 92500569

Sample: DPZ-2 Lab ID: 92500569014 Collected: 10/15/20 16:00 Received: 10/16/20 10:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	7.08	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	225	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 07:29	7440-70-2	
Iron	ND	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 07:29	7439-89-6	
Magnesium	485	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 07:29	7439-95-4	
Manganese	0.26	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 07:29	7439-96-5	
Potassium	151	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 07:29	7440-09-7	
Sodium	4720	mg/L	500	61.1	100	10/17/20 00:45	10/21/20 19:51	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.021	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 20:28	7440-38-2	
Boron	2.1	mg/L	1.2	0.31	50	10/17/20 00:41	10/20/20 11:54	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	349	mg/L	5.0	5.0	1		10/28/20 18:42		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/28/20 18:42		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	0.35J	mg/L	0.50	0.25	1		10/23/20 16:19	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	ND	mg/L	0.50	0.084	1		10/22/20 12:47		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	41.6	mg/L	10.0	5.0	100		10/19/20 20:15	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/17/20 04:03	10/22/20 01:05		B2
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	8000	mg/L	100	60.0	100		10/21/20 20:13	16887-00-6	
Sulfate	989	mg/L	19.0	9.5	19		10/21/20 10:13	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: DPZ-2		Lab ID: 92500569014		Collected: 10/15/20 16:00	Received: 10/16/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/17/20 00:33	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/17/20 00:33	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.13J	mg/L	0.25	0.059	5		10/17/20 05:17		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	7.0	mg/L	1.0	0.50	1		10/29/20 01:23	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III
Pace Project No.: 92500569

Sample: RW-4		Lab ID: 92500569015		Collected: 10/15/20 14:46		Received: 10/16/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.24	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	128	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 07:32	7440-70-2	
Iron	2.6	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 07:32	7439-89-6	
Magnesium	373	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 07:32	7439-95-4	
Manganese	0.23	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 07:32	7439-96-5	
Potassium	145	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 07:32	7440-09-7	
Sodium	3370	mg/L	500	61.1	100	10/17/20 00:45	10/21/20 19:54	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0028J	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 20:31	7440-38-2	
Boron	2.1	mg/L	1.2	0.31	50	10/17/20 00:41	10/20/20 12:06	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	131	mg/L	5.0	5.0	1		10/28/20 18:52		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/28/20 18:52		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	13100	mg/L	2500	2500	1		10/20/20 12:08		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	1.6	mg/L	0.50	0.25	1		10/23/20 16:19	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	1.1	mg/L	0.50	0.084	1		10/22/20 12:45		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	0.44	mg/L	0.10	0.050	1		10/19/20 18:33	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/17/20 04:03	10/22/20 00:56		B2

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-4		Lab ID: 92500569015		Collected: 10/15/20 14:46		Received: 10/16/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	5600	mg/L	100	60.0	100		10/21/20 10:27	16887-00-6	
Sulfate	732	mg/L	100	50.0	100		10/21/20 10:27	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/17/20 00:29	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/17/20 00:29	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.21	mg/L	0.050	0.012	1		10/17/20 05:14		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	11.0	mg/L	1.0	0.50	1		10/29/20 01:40	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-5		Lab ID: 92500569016		Collected: 10/15/20 15:55		Received: 10/16/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.62	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	152	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 07:35	7440-70-2	
Iron	1.3	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 07:35	7439-89-6	
Magnesium	397	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 07:35	7439-95-4	
Manganese	0.14	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 07:35	7439-96-5	
Potassium	159	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 07:35	7440-09-7	
Sodium	3770	mg/L	500	61.1	100	10/17/20 00:45	10/21/20 19:57	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0026J	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 20:35	7440-38-2	
Boron	2.7	mg/L	1.2	0.31	50	10/17/20 00:41	10/20/20 12:09	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	197	mg/L	5.0	5.0	1		10/28/20 19:02		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/28/20 19:02		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	15500	mg/L	2500	2500	1		10/20/20 12:08		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	0.94	mg/L	0.50	0.25	1		10/23/20 16:19	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	0.32J	mg/L	0.50	0.084	1		10/22/20 12:45		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	0.95	mg/L	0.10	0.050	1		10/19/20 18:34	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/17/20 04:03	10/22/20 01:04		B2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-5		Lab ID: 92500569016		Collected: 10/15/20 15:55		Received: 10/16/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	6190	mg/L	100	60.0	100		10/21/20 10:41	16887-00-6	
Sulfate	806	mg/L	100	50.0	100		10/21/20 10:41	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/17/20 00:32	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/17/20 00:32	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	1.0	mg/L	0.50	0.12	10		10/17/20 05:15		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	11.9	mg/L	1.0	0.50	1		10/29/20 01:56	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCMANUS APP III
Pace Project No.: 92500569

Sample: RW-6		Lab ID: 92500569017		Collected: 10/15/20 14:03		Received: 10/16/20 10:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		10/27/20 13:57		
pH	6.15	Std. Units			1		10/27/20 13:57		
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	153	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 07:39	7440-70-2	
Iron	ND	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 07:39	7439-89-6	
Magnesium	447	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 07:39	7439-95-4	
Manganese	ND	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 07:39	7439-96-5	
Potassium	164	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 07:39	7440-09-7	
Sodium	4050	mg/L	500	61.1	100	10/17/20 00:45	10/21/20 20:01	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	0.0029J	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 20:39	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	10/17/20 00:41	10/20/20 12:13	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	108	mg/L	5.0	5.0	1		10/28/20 19:21		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/28/20 19:21		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	16400	mg/L	2500	2500	1		10/20/20 12:09		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		10/23/20 16:19	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	0.41J	mg/L	0.50	0.084	1		10/22/20 12:43		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	8.3	mg/L	2.5	1.2	25		10/19/20 20:17	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/17/20 04:03	10/22/20 00:50		B2

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: RW-6		Lab ID: 92500569017		Collected: 10/15/20 14:03	Received: 10/16/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	7030	mg/L	100	60.0	100		10/21/20 10:54	16887-00-6	
Sulfate	839	mg/L	100	50.0	100		10/21/20 10:54	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/17/20 00:28	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/17/20 00:28	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.23	mg/L	0.050	0.012	1		10/17/20 05:11		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	7.6	mg/L	1.0	0.50	1		10/29/20 02:15	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: DUP-2		Lab ID: 92500569018		Collected: 10/15/20 00:00	Received: 10/16/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Calcium	148	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 07:55	7440-70-2	
Iron	1.2	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 07:55	7439-89-6	
Magnesium	389	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 07:55	7439-95-4	
Manganese	0.14	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 07:55	7439-96-5	
Potassium	156	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 07:55	7440-09-7	
Sodium	3850	mg/L	500	61.1	100	10/17/20 00:45	10/21/20 20:04	7440-23-5	
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville							
Arsenic	0.0027J	mg/L	0.0050	0.0017	20	10/17/20 00:41	10/19/20 20:43	7440-38-2	
Boron	2.5	mg/L	1.2	0.31	50	10/17/20 00:41	10/20/20 12:17	7440-42-8	
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity,Bicarbonate (CaCO ₃)	190	mg/L	5.0	5.0	1		10/28/20 19:47		
Alkalinity,Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/28/20 19:47		
2540C Total Dissolved Solids		Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville							
Total Dissolved Solids	14800	mg/L	2500	2500	1		10/20/20 12:09		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville							
Iron, Ferric	0.80	mg/L	0.50	0.25	1		10/23/20 16:19	7439-89-6	N2
Iron, Ferrous		Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville							
Iron, Ferrous	0.39J	mg/L	0.50	0.084	1		10/22/20 12:40		H3,N2
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville							
Sulfide	ND	mg/L	0.10	0.050	1		10/19/20 18:35	18496-25-8	
5210B BOD, 5 day		Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville							
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/17/20 04:03	10/22/20 00:24		H2
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	6200	mg/L	100	60.0	100		10/21/20 11:08	16887-00-6	
Sulfate	805	mg/L	100	50.0	100		10/21/20 11:08	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: DUP-2		Lab ID: 92500569018		Collected: 10/15/20 00:00	Received: 10/16/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/17/20 00:21	14797-55-8	H1
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/17/20 00:21	14797-65-0	H1
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	0.64	mg/L	0.50	0.12	10		10/17/20 05:06		H1
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	11.9	mg/L	1.0	0.50	1		10/29/20 05:28	7440-44-0	

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ANALYTICAL RESULTS

Project: MCMANUS APP III
Pace Project No.: 92500569

Sample: FBL101520 Lab ID: 92500569019 Collected: 10/15/20 17:36 Received: 10/16/20 10:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Calcium	ND	mg/L	2.0	1.9	20	10/17/20 00:45	10/20/20 07:58	7440-70-2	
Iron	ND	mg/L	1.0	0.83	20	10/17/20 00:45	10/20/20 07:58	7439-89-6	
Magnesium	ND	mg/L	2.0	1.4	20	10/17/20 00:45	10/20/20 07:58	7439-95-4	
Manganese	ND	mg/L	0.10	0.069	20	10/17/20 00:45	10/20/20 07:58	7439-96-5	
Potassium	ND	mg/L	100	60.8	20	10/17/20 00:45	10/20/20 07:58	7440-09-7	
Sodium	ND	mg/L	100	12.2	20	10/17/20 00:45	10/20/20 07:58	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Asheville									
Arsenic	ND	mg/L	0.0050	0.000087	1	10/17/20 00:41	10/19/20 20:47	7440-38-2	
Boron	ND	mg/L	0.025	0.0062	1	10/17/20 00:41	10/20/20 10:35	7440-42-8	
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/28/20 19:56		
Alkalinity,Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/28/20 19:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C-2011 Pace Analytical Services - Asheville									
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		10/20/20 12:09		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe D#4 Pace Analytical Services - Asheville									
Iron, Ferric	ND	mg/L	0.50	0.25	1		10/23/20 16:19	7439-89-6	N2
Iron, Ferrous									
Analytical Method: SM 3500-Fe B-2011 Pace Analytical Services - Asheville									
Iron, Ferrous	ND	mg/L	0.50	0.084	1		10/22/20 12:48		H3,N2
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		10/19/20 18:36	18496-25-8	
5210B BOD, 5 day									
Analytical Method: SM 5210B-2011 Pace Analytical Services - Asheville									
BOD, 5 day	ND	mg/L	2.0	2.0	1	10/17/20 04:03	10/22/20 01:07		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	6.0	mg/L	1.0	0.60	1		10/21/20 02:15	16887-00-6	
Sulfate	0.66J	mg/L	1.0	0.50	1		10/21/20 02:15	14808-79-8	

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ANALYTICAL RESULTS

Project: MCMANUS APP III

Pace Project No.: 92500569

Sample: FBL101520		Lab ID: 92500569019		Collected: 10/15/20 17:36	Received: 10/16/20 10:30	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Nitrate	ND	mg/L	0.040	0.010	1		10/17/20 00:34	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.040	0.010	1		10/17/20 00:34	14797-65-0	
SM4500P-E, Phosphate, Ortho		Analytical Method: SM 4500-P E-2011 Pace Analytical Services - Asheville							
Orthophosphate as P	ND	mg/L	0.050	0.012	1		10/17/20 05:18		
5310B TOC		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	ND	mg/L	1.0	0.50	1		10/29/20 05:46	7440-44-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch:	573915	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500569009, 92500569010, 92500569011, 92500569012, 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

METHOD BLANK: 3038654 Matrix: Water

Associated Lab Samples: 92500569009, 92500569010, 92500569011, 92500569012, 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	10/20/20 06:49	
Iron	mg/L	ND	0.050	0.042	10/20/20 06:49	
Magnesium	mg/L	ND	0.10	0.068	10/20/20 06:49	
Manganese	mg/L	ND	0.0050	0.0034	10/20/20 06:49	
Potassium	mg/L	ND	5.0	3.0	10/20/20 06:49	
Sodium	mg/L	ND	5.0	0.61	10/20/20 06:49	

LABORATORY CONTROL SAMPLE: 3038655

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	4.7	95	80-120	
Iron	mg/L	5	4.6	91	80-120	
Magnesium	mg/L	5	4.8	96	80-120	
Manganese	mg/L	0.5	0.47	95	80-120	
Potassium	mg/L	5	4.9J	98	80-120	
Sodium	mg/L	5	4.7J	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3038656 3038657

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92500569009 Result	Spike Conc.	Spike Conc.	Conc.								
Calcium	mg/L	256	5	5	255	243	-16	-248	75-125	5	20	M6	
Iron	mg/L	ND	5	5	5.0	4.9	100	97	75-125	2	20		
Magnesium	mg/L	567	5	5	561	535	-120	-644	75-125	5	20	M6	
Manganese	mg/L	0.28	0.5	0.5	0.78	0.75	100	94	75-125	4	20		
Potassium	mg/L	151	5	5	153	146	50	-94	75-125	5	20	M6	
Sodium	mg/L	3820	5	5	7840	3770	80400	-980	75-125	70	20	M6,R1	

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

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch:	576182	Analysis Method:	EPA 6010D
QC Batch Method:	EPA 3010A	Analysis Description:	6010 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008

METHOD BLANK: 3049575 Matrix: Water

Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.094	10/28/20 09:30	
Iron	mg/L	ND	0.050	0.042	10/28/20 09:30	
Magnesium	mg/L	ND	0.10	0.068	10/28/20 09:30	
Manganese	mg/L	ND	0.0050	0.0034	10/28/20 09:30	
Potassium	mg/L	ND	5.0	3.0	10/28/20 09:30	
Sodium	mg/L	ND	5.0	0.61	10/28/20 09:30	

LABORATORY CONTROL SAMPLE: 3049576

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	5	4.5	91	80-120	
Iron	mg/L	5	4.6	92	80-120	
Magnesium	mg/L	5	4.8	96	80-120	
Manganese	mg/L	0.5	0.47	95	80-120	
Potassium	mg/L	5	4.8J	96	80-120	
Sodium	mg/L	5	4.9J	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3049577 3049578

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92501793016 Result	Spike Conc.	Spike Conc.	Conc.								
Calcium	mg/L	125000 ug/L	5	5	137	137	240	246	75-125	0	20	M1	
Iron	mg/L	5540 ug/L	5	5	10.5	10.4	99	98	75-125	1	20		
Magnesium	mg/L	5110 ug/L	5	5	10	9.9	97	96	75-125	1	20		
Manganese	mg/L	1450 ug/L	0.5	0.5	2.0	2.0	109	104	75-125	1	20		
Potassium	mg/L	122000 ug/L	5	5	131	132	189	210	75-125	1	20	M1	
Sodium	mg/L	1280000 ug/L	5	5	1270	1280	-241	-160	75-125	0	20	E	

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch: 573667 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005

METHOD BLANK: 3037373

Matrix: Water

Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	10/19/20 15:31	
Boron	mg/L	ND	0.025	0.0062	10/20/20 12:40	

LABORATORY CONTROL SAMPLE: 3037374

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.011	107	80-120	
Boron	mg/L	0.05	0.051	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037375 3037376

Parameter	Units	92500314013		3037376		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic	mg/L	ND	0.01	0.01	0.012	0.011	115	108	75-125	6	20
Boron	mg/L	1.8	0.05	0.05	1.8	1.8	-51	-9	75-125	1	20 M6

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch:	573916	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3010A	Analysis Description:	6020 MET
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500569009, 92500569010, 92500569011, 92500569012, 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

METHOD BLANK: 3038658 Matrix: Water

Associated Lab Samples: 92500569009, 92500569010, 92500569011, 92500569012, 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	10/19/20 19:37	
Boron	mg/L	ND	0.025	0.0062	10/20/20 10:27	

LABORATORY CONTROL SAMPLE: 3038659

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	101	80-120	
Boron	mg/L	0.05	0.050	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3038660 3038661

Parameter	Units	3038660		3038661		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic	mg/L	0.0058	0.01	0.016	0.016	106	103	75-125	1	20	
Boron	mg/L	1.8	0.05	1.7	1.7	-72	-198	75-125	4	20 M6	

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 574264 Analysis Method: EPA 6020B
QC Batch Method: EPA 3010A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569006, 92500569007, 92500569008

METHOD BLANK: 3040362 Matrix: Water
Associated Lab Samples: 92500569006, 92500569007, 92500569008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000087	10/21/20 12:20	
Boron	mg/L	ND	0.025	0.0062	10/21/20 12:20	

LABORATORY CONTROL SAMPLE: 3040363

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.011	108	80-120	
Boron	mg/L	0.05	0.051	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3040364 3040365

Parameter	Units	92501011001		3040365		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic	mg/L	ND	0.01	0.01	0.011	0.011	107	105	75-125	2	20
Boron	mg/L	ND	0.05	0.05	0.056	0.056	97	98	75-125	1	20

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch:	575956	Analysis Method:	SM 2320B-2011
QC Batch Method:	SM 2320B-2011	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009, 92500569010

METHOD BLANK: 3048287 Matrix: Water

Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009, 92500569010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	10/27/20 14:59	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	10/27/20 14:59	

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch: 575959

Analysis Method: SM 2320B-2011

QC Batch Method: SM 2320B-2011

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

METHOD BLANK: 3048303

Matrix: Water

Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	10/28/20 17:06	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	10/28/20 17:06	

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch: 576297

Analysis Method: SM 2320B-2011

QC Batch Method: SM 2320B-2011

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92500569011, 92500569012

METHOD BLANK: 3049850

Matrix: Water

Associated Lab Samples: 92500569011, 92500569012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	10/28/20 12:39	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	10/28/20 12:39	

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch: 574190 Analysis Method: SM 2540C-2011
 QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
 Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009

METHOD BLANK: 3040151 Matrix: Water

Associated Lab Samples: 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	10/19/20 18:31	

LABORATORY CONTROL SAMPLE: 3040152

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	266	106	90-110	

SAMPLE DUPLICATE: 3040153

Parameter	Units	92500314013 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	8750	8750	0	25	

SAMPLE DUPLICATE: 3040154

Parameter	Units	92500507001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	62.0	64.0	3	25	

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 574334 Analysis Method: SM 2540C-2011
QC Batch Method: SM 2540C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569010, 92500569011, 92500569012, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

METHOD BLANK: 3040507 Matrix: Water
Associated Lab Samples: 92500569010, 92500569011, 92500569012, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	10/20/20 12:07	

LABORATORY CONTROL SAMPLE: 3040508

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	258	103	90-110	

SAMPLE DUPLICATE: 3040509

Parameter	Units	92500569010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	11800	15500	27	25	D6

SAMPLE DUPLICATE: 3040510

Parameter	Units	92500569017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	16400	16000	2	25	

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 574953 Analysis Method: SM 3500-Fe B-2011
QC Batch Method: SM 3500-Fe B-2011 Analysis Description: Iron, Ferrous
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569002, 92500569003, 92500569004, 92500569005, 92500569007, 92500569008, 92500569009, 92500569010, 92500569011

METHOD BLANK: 3043506 Matrix: Water
Associated Lab Samples: 92500569002, 92500569003, 92500569004, 92500569005, 92500569007, 92500569008, 92500569009, 92500569010, 92500569011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	ND	0.50	0.084	10/22/20 11:57	N2

LABORATORY CONTROL SAMPLE: 3043507

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	1.5	1.5	102	90-110	N2

SAMPLE DUPLICATE: 3043513

Parameter	Units	35585184001 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.26J	0.24J		10	H3,N2

SAMPLE DUPLICATE: 3043514

Parameter	Units	35585183001 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.74	0.71	3	10	H3,N2

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 574956 Analysis Method: SM 3500-Fe B-2011
QC Batch Method: SM 3500-Fe B-2011 Analysis Description: Iron, Ferrous
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569001, 92500569006, 92500569012, 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

METHOD BLANK: 3043510 Matrix: Water
Associated Lab Samples: 92500569001, 92500569006, 92500569012, 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	ND	0.50	0.084	10/22/20 12:31	N2

LABORATORY CONTROL SAMPLE: 3043511

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	1.5	1.5	102	90-110	N2

SAMPLE DUPLICATE: 3043512

Parameter	Units	92500569012 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	ND	ND		10	H3,N2

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch:	574003	Analysis Method:	SM 4500-S2D-2011
QC Batch Method:	SM 4500-S2D-2011	Analysis Description:	4500S2D Sulfide Water
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009, 92500569010, 92500569011

METHOD BLANK: 3038954 Matrix: Water

Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009, 92500569010, 92500569011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	10/19/20 18:04	

LABORATORY CONTROL SAMPLE: 3038955

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.52	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3038956 3038957

Parameter	Units	92500502010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3038958 3038959

Parameter	Units	92500502011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 574068 Analysis Method: SM 4500-S2D-2011
QC Batch Method: SM 4500-S2D-2011 Analysis Description: 4500S2D Sulfide Water
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

METHOD BLANK: 3039206 Matrix: Water
Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	10/19/20 18:32	

LABORATORY CONTROL SAMPLE: 3039207

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.51	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3039214 3039215

Parameter	Units	92500876001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Sulfide	mg/L	ND	0.5	0.5	0.50	0.50	92	93	80-120	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3039216 3039217

Parameter	Units	92500876002 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Sulfide	mg/L	ND	0.5	0.5	0.49	0.49	93	93	80-120	1	10	

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 573671 Analysis Method: SM 5210B-2011
QC Batch Method: SM 5210B-2011 Analysis Description: 5210B BOD, 5 day
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569002, 92500569003, 92500569004, 92500569005, 92500569007, 92500569009, 92500569010, 92500569011

METHOD BLANK: 3037385 Matrix: Water
Associated Lab Samples: 92500569002, 92500569003, 92500569004, 92500569005, 92500569007, 92500569009, 92500569010, 92500569011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/21/20 00:58	

LABORATORY CONTROL SAMPLE: 3037386

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	201	101	84.6-115	

SAMPLE DUPLICATE: 3037388

Parameter	Units	92500755001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	121	128	6	25	

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 573672 Analysis Method: SM 5210B-2011
QC Batch Method: SM 5210B-2011 Analysis Description: 5210B BOD, 5 day
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569001, 92500569006, 92500569008

METHOD BLANK: 3037389 Matrix: Water
Associated Lab Samples: 92500569001, 92500569006, 92500569008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/21/20 02:16	

LABORATORY CONTROL SAMPLE: 3037390

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	202	102	84.6-115	

SAMPLE DUPLICATE: 3037392

Parameter	Units	92500677001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch:	573919	Analysis Method:	SM 5210B-2011
QC Batch Method:	SM 5210B-2011	Analysis Description:	5210B BOD, 5 day
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

METHOD BLANK: 3038668 Matrix: Water

Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	2.0	10/22/20 00:15	

LABORATORY CONTROL SAMPLE: 3038669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	189	95	84.6-115	

SAMPLE DUPLICATE: 3038671

Parameter	Units	92500914001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	ND	ND		25	

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 573642 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009

METHOD BLANK: 3037306 Matrix: Water
Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/17/20 05:12	
Sulfate	mg/L	ND	1.0	0.50	10/17/20 05:12	

LABORATORY CONTROL SAMPLE: 3037307

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.5	99	90-110	
Sulfate	mg/L	50	48.2	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037308 3037309

Parameter	Units	92500314017		3037309		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Chloride	mg/L	ND	50	50	52.1	52.0	104	104	90-110	0	10
Sulfate	mg/L	ND	50	50	50.5	50.2	101	100	90-110	0	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037310 3037311

Parameter	Units	92500314018		3037311		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Chloride	mg/L	ND	50	50	52.1	52.4	104	105	90-110	1	10
Sulfate	mg/L	ND	50	50	50.6	50.9	101	102	90-110	1	10

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 573643 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569010, 92500569011, 92500569012

METHOD BLANK: 3037312 Matrix: Water
Associated Lab Samples: 92500569010, 92500569011, 92500569012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/17/20 23:06	
Sulfate	mg/L	ND	1.0	0.50	10/17/20 23:06	

LABORATORY CONTROL SAMPLE: 3037313

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.5	103	90-110	
Sulfate	mg/L	50	51.3	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037314 3037315

Parameter	Units	92500569012		3037315		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	1.3	50	50	53.3	53.5	104	104	90-110	0	10
Sulfate	mg/L	ND	50	50	52.4	52.9	105	106	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037316 3037317

Parameter	Units	92499689018		3037317		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	ND	50	50	53.0	53.2	106	106	90-110	0	10
Sulfate	mg/L	ND	50	50	52.5	52.6	105	105	90-110	0	10

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 574246 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

METHOD BLANK: 3040304 Matrix: Water
Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/20/20 20:54	
Sulfate	mg/L	ND	1.0	0.50	10/20/20 20:54	

LABORATORY CONTROL SAMPLE: 3040305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.0	100	90-110	
Sulfate	mg/L	50	48.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3040306 3040307

Parameter	Units	92500860056 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	7.8	50	50	59.7	60.0	104	104	90-110	0	10	
Sulfate	mg/L	10	50	50	61.1	61.4	102	103	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3040308 3040309

Parameter	Units	92500314023 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	50	50	51.3	51.8	102	103	90-110	1	10	
Sulfate	mg/L	ND	50	50	49.6	50.2	99	100	90-110	1	10	

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch:	573633	Analysis Method:	EPA 353.2 Rev 2.0 1993
QC Batch Method:	EPA 353.2 Rev 2.0 1993	Analysis Description:	353.2 Nitrate + Nitrite, Unpres.
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009, 92500569010, 92500569011

METHOD BLANK: 3037270 Matrix: Water
Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009, 92500569010, 92500569011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.040	0.010	10/16/20 00:01	
Nitrogen, Nitrite	mg/L	ND	0.040	0.010	10/16/20 00:01	

LABORATORY CONTROL SAMPLE: 3037271

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1.5	1.5	100	90-110	
Nitrogen, Nitrite	mg/L	1	1.0	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037272 3037273

Parameter	Units	3037272		3037273		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Nitrogen, Nitrate	mg/L	0.042	1.5	1.5	1.5	98	97	90-110	1	10	
Nitrogen, Nitrite	mg/L	ND	1	1	1.0	100	100	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037274 3037275

Parameter	Units	3037274		3037275		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Nitrogen, Nitrate	mg/L	0.069	1.5	1.5	1.4	91	91	90-110	0	10	
Nitrogen, Nitrite	mg/L	ND	1	1	0.91	91	91	90-110	0	10	

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch:	573905	Analysis Method:	EPA 353.2 Rev 2.0 1993
QC Batch Method:	EPA 353.2 Rev 2.0 1993	Analysis Description:	353.2 Nitrate + Nitrite, Unpres.
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

METHOD BLANK: 3038616 Matrix: Water
Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.040	0.010	10/17/20 00:19	
Nitrogen, Nitrite	mg/L	ND	0.040	0.010	10/17/20 00:19	

LABORATORY CONTROL SAMPLE: 3038617

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1.5	1.5	101	90-110	
Nitrogen, Nitrite	mg/L	1	0.98	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3038618 3038619

Parameter	Units	92500878001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Nitrate	mg/L	ND	1.5	1.5	1.5	1.5	101	100	90-110	1	10	
Nitrogen, Nitrite	mg/L	ND	1	1	0.99	0.99	99	99	90-110	0	10	

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 573616 Analysis Method: SM 4500-P E-2011
QC Batch Method: SM 4500-P E-2011 Analysis Description: SM4500P-E Phosphorus, Ortho
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009, 92500569010, 92500569011

METHOD BLANK: 3037154 Matrix: Water
Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004, 92500569005, 92500569006, 92500569007, 92500569008, 92500569009, 92500569010, 92500569011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.050	0.012	10/15/20 20:39	

LABORATORY CONTROL SAMPLE: 3037155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.25	0.25	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037156 3037157

Parameter	Units	3037156		3037157		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92500569004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Orthophosphate as P	mg/L	0.65	0.25	0.25	0.81	0.80	62	61	90-110	0	10 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3037158 3037159

Parameter	Units	3037158		3037159		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92500569003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Orthophosphate as P	mg/L	0.58	0.25	0.25	1.0	1.0	169	167	90-110	1	10 M1

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 573921 Analysis Method: SM 4500-P E-2011
QC Batch Method: SM 4500-P E-2011 Analysis Description: SM4500P-E Phosphorus, Ortho
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

METHOD BLANK: 3038676 Matrix: Water
Associated Lab Samples: 92500569013, 92500569014, 92500569015, 92500569016, 92500569017, 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.050	0.012	10/17/20 05:05	

LABORATORY CONTROL SAMPLE: 3038677

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.25	0.25	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3038678 3038679

Parameter	Units	3038678		3038679		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Orthophosphate as P	mg/L	0.015J	0.25	0.26	0.26	96	96	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3038680 3038681

Parameter	Units	3038680		3038681		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Orthophosphate as P	mg/L	ND	0.25	0.24	0.24	92	92	90-110	0	10	

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch:	576014	Analysis Method:	SM 5310B-2011
QC Batch Method:	SM 5310B-2011	Analysis Description:	5310B TOC
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004

METHOD BLANK: 3048566 Matrix: Water
Associated Lab Samples: 92500569001, 92500569002, 92500569003, 92500569004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/28/20 01:16	

LABORATORY CONTROL SAMPLE: 3048567

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	26.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3048568 3048569

Parameter	Units	92500507002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.3	25	25	27.9	28.3	106	108	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3048570 3048571

Parameter	Units	92501837001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	72.8	25	25	101	99.1	114	105	90-110	2	10 M1	

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QUALITY CONTROL DATA

Project: MCMANUS APP III
Pace Project No.: 92500569

QC Batch: 576358 Analysis Method: SM 5310B-2011
QC Batch Method: SM 5310B-2011 Analysis Description: 5310B TOC
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92500569005, 92500569006, 92500569007, 92500569008, 92500569009, 92500569010, 92500569011, 92500569013, 92500569014, 92500569015, 92500569016, 92500569017

METHOD BLANK: 3050151 Matrix: Water
Associated Lab Samples: 92500569005, 92500569006, 92500569007, 92500569008, 92500569009, 92500569010, 92500569011, 92500569013, 92500569014, 92500569015, 92500569016, 92500569017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/28/20 18:26	

LABORATORY CONTROL SAMPLE: 3050152

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	26.4	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3050155 3050156

Parameter	Units	92499689001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.87J	25	25	27.0	27.4	105	106	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3050157 3050158

Parameter	Units	92499689003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	0.86J	25	25	26.8	27.2	104	105	90-110	1	10	

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QUALITY CONTROL DATA

Project: MCMANUS APP III

Pace Project No.: 92500569

QC Batch: 576359

Analysis Method: SM 5310B-2011

QC Batch Method: SM 5310B-2011

Analysis Description: 5310B TOC

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92500569018, 92500569019

METHOD BLANK: 3050169

Matrix: Water

Associated Lab Samples: 92500569018, 92500569019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/29/20 04:00	

LABORATORY CONTROL SAMPLE: 3050170

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	26.1	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3050171 3050172

Parameter	Units	3050171		3050172		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Total Organic Carbon	mg/L	ND	25	25	27.1	27.4	106	108	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3050173 3050174

Parameter	Units	3050173		3050174		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Total Organic Carbon	mg/L	0.70J	25	25	26.6	26.6	103	104	90-110	0	10	

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QUALIFIERS

Project: MCMANUS APP III

Pace Project No.: 92500569

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B2 Oxygen usage is less than 2.0 for all dilutions set. The reported value is an estimated less than value and is calculated for the dilution using the most amount of sample.

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

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

H1 Analysis conducted outside the EPA method holding time.

H2 Extraction or preparation conducted outside EPA method holding time.

H3 Sample was received or analysis requested beyond the recognized method holding time.

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

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

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500569001	MCM-06				
92500569002	MCM-07				
92500569003	MCM-14				
92500569004	RW-1				
92500569005	RW-2				
92500569006	RW-3				
92500569007	RW-7				
92500569008	RW-8				
92500569009	RW-9				
92500569010	RW-10				
92500569013	MCM-05				
92500569014	DPZ-2				
92500569015	RW-4				
92500569016	RW-5				
92500569017	RW-6				
92500569001	MCM-06	EPA 3010A	576182	EPA 6010D	576205
92500569002	MCM-07	EPA 3010A	576182	EPA 6010D	576205
92500569003	MCM-14	EPA 3010A	576182	EPA 6010D	576205
92500569004	RW-1	EPA 3010A	576182	EPA 6010D	576205
92500569005	RW-2	EPA 3010A	576182	EPA 6010D	576205
92500569006	RW-3	EPA 3010A	576182	EPA 6010D	576205
92500569007	RW-7	EPA 3010A	576182	EPA 6010D	576205
92500569008	RW-8	EPA 3010A	576182	EPA 6010D	576205
92500569009	RW-9	EPA 3010A	573915	EPA 6010D	573927
92500569010	RW-10	EPA 3010A	573915	EPA 6010D	573927
92500569011	DUP-1	EPA 3010A	573915	EPA 6010D	573927
92500569012	FBL101420	EPA 3010A	573915	EPA 6010D	573927
92500569013	MCM-05	EPA 3010A	573915	EPA 6010D	573927
92500569014	DPZ-2	EPA 3010A	573915	EPA 6010D	573927
92500569015	RW-4	EPA 3010A	573915	EPA 6010D	573927
92500569016	RW-5	EPA 3010A	573915	EPA 6010D	573927
92500569017	RW-6	EPA 3010A	573915	EPA 6010D	573927
92500569018	DUP-2	EPA 3010A	573915	EPA 6010D	573927
92500569019	FBL101520	EPA 3010A	573915	EPA 6010D	573927
92500569001	MCM-06	EPA 3010A	573667	EPA 6020B	573681
92500569002	MCM-07	EPA 3010A	573667	EPA 6020B	573681
92500569003	MCM-14	EPA 3010A	573667	EPA 6020B	573681
92500569004	RW-1	EPA 3010A	573667	EPA 6020B	573681
92500569005	RW-2	EPA 3010A	573667	EPA 6020B	573681
92500569006	RW-3	EPA 3010A	574264	EPA 6020B	574298
92500569007	RW-7	EPA 3010A	574264	EPA 6020B	574298
92500569008	RW-8	EPA 3010A	574264	EPA 6020B	574298
92500569009	RW-9	EPA 3010A	573916	EPA 6020B	573935
92500569010	RW-10	EPA 3010A	573916	EPA 6020B	573935
92500569011	DUP-1	EPA 3010A	573916	EPA 6020B	573935
92500569012	FBL101420	EPA 3010A	573916	EPA 6020B	573935

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS APP III
Pace Project No.: 92500569

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500569013	MCM-05	EPA 3010A	573916	EPA 6020B	573935
92500569014	DPZ-2	EPA 3010A	573916	EPA 6020B	573935
92500569015	RW-4	EPA 3010A	573916	EPA 6020B	573935
92500569016	RW-5	EPA 3010A	573916	EPA 6020B	573935
92500569017	RW-6	EPA 3010A	573916	EPA 6020B	573935
92500569018	DUP-2	EPA 3010A	573916	EPA 6020B	573935
92500569019	FBL101520	EPA 3010A	573916	EPA 6020B	573935
92500569001	MCM-06	SM 2320B-2011	575956		
92500569002	MCM-07	SM 2320B-2011	575956		
92500569003	MCM-14	SM 2320B-2011	575956		
92500569004	RW-1	SM 2320B-2011	575956		
92500569005	RW-2	SM 2320B-2011	575956		
92500569006	RW-3	SM 2320B-2011	575956		
92500569007	RW-7	SM 2320B-2011	575956		
92500569008	RW-8	SM 2320B-2011	575956		
92500569009	RW-9	SM 2320B-2011	575956		
92500569010	RW-10	SM 2320B-2011	575956		
92500569011	DUP-1	SM 2320B-2011	576297		
92500569012	FBL101420	SM 2320B-2011	576297		
92500569013	MCM-05	SM 2320B-2011	575959		
92500569014	DPZ-2	SM 2320B-2011	575959		
92500569015	RW-4	SM 2320B-2011	575959		
92500569016	RW-5	SM 2320B-2011	575959		
92500569017	RW-6	SM 2320B-2011	575959		
92500569018	DUP-2	SM 2320B-2011	575959		
92500569019	FBL101520	SM 2320B-2011	575959		
92500569004	RW-1	SM 2540C-2011	574190		
92500569005	RW-2	SM 2540C-2011	574190		
92500569006	RW-3	SM 2540C-2011	574190		
92500569007	RW-7	SM 2540C-2011	574190		
92500569008	RW-8	SM 2540C-2011	574190		
92500569009	RW-9	SM 2540C-2011	574190		
92500569010	RW-10	SM 2540C-2011	574334		
92500569011	DUP-1	SM 2540C-2011	574334		
92500569012	FBL101420	SM 2540C-2011	574334		
92500569015	RW-4	SM 2540C-2011	574334		
92500569016	RW-5	SM 2540C-2011	574334		
92500569017	RW-6	SM 2540C-2011	574334		
92500569018	DUP-2	SM 2540C-2011	574334		
92500569019	FBL101520	SM 2540C-2011	574334		
92500569001	MCM-06	SM 3500-Fe D#4	576787		
92500569002	MCM-07	SM 3500-Fe D#4	576787		
92500569003	MCM-14	SM 3500-Fe D#4	576787		
92500569004	RW-1	SM 3500-Fe D#4	576787		
92500569005	RW-2	SM 3500-Fe D#4	576787		
92500569006	RW-3	SM 3500-Fe D#4	576787		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500569007	RW-7	SM 3500-Fe D#4	576787		
92500569008	RW-8	SM 3500-Fe D#4	576787		
92500569009	RW-9	SM 3500-Fe D#4	575464		
92500569010	RW-10	SM 3500-Fe D#4	575464		
92500569011	DUP-1	SM 3500-Fe D#4	575464		
92500569012	FBL101420	SM 3500-Fe D#4	575465		
92500569013	MCM-05	SM 3500-Fe D#4	575465		
92500569014	DPZ-2	SM 3500-Fe D#4	575465		
92500569015	RW-4	SM 3500-Fe D#4	575465		
92500569016	RW-5	SM 3500-Fe D#4	575465		
92500569017	RW-6	SM 3500-Fe D#4	575465		
92500569018	DUP-2	SM 3500-Fe D#4	575465		
92500569019	FBL101520	SM 3500-Fe D#4	575465		
92500569001	MCM-06	SM 3500-Fe B-2011	574956		
92500569002	MCM-07	SM 3500-Fe B-2011	574953		
92500569003	MCM-14	SM 3500-Fe B-2011	574953		
92500569004	RW-1	SM 3500-Fe B-2011	574953		
92500569005	RW-2	SM 3500-Fe B-2011	574953		
92500569006	RW-3	SM 3500-Fe B-2011	574956		
92500569007	RW-7	SM 3500-Fe B-2011	574953		
92500569008	RW-8	SM 3500-Fe B-2011	574953		
92500569009	RW-9	SM 3500-Fe B-2011	574953		
92500569010	RW-10	SM 3500-Fe B-2011	574953		
92500569011	DUP-1	SM 3500-Fe B-2011	574953		
92500569012	FBL101420	SM 3500-Fe B-2011	574956		
92500569013	MCM-05	SM 3500-Fe B-2011	574956		
92500569014	DPZ-2	SM 3500-Fe B-2011	574956		
92500569015	RW-4	SM 3500-Fe B-2011	574956		
92500569016	RW-5	SM 3500-Fe B-2011	574956		
92500569017	RW-6	SM 3500-Fe B-2011	574956		
92500569018	DUP-2	SM 3500-Fe B-2011	574956		
92500569019	FBL101520	SM 3500-Fe B-2011	574956		
92500569001	MCM-06	SM 4500-S2D-2011	574003		
92500569002	MCM-07	SM 4500-S2D-2011	574003		
92500569003	MCM-14	SM 4500-S2D-2011	574003		
92500569004	RW-1	SM 4500-S2D-2011	574003		
92500569005	RW-2	SM 4500-S2D-2011	574003		
92500569006	RW-3	SM 4500-S2D-2011	574003		
92500569007	RW-7	SM 4500-S2D-2011	574003		
92500569008	RW-8	SM 4500-S2D-2011	574003		
92500569009	RW-9	SM 4500-S2D-2011	574003		
92500569010	RW-10	SM 4500-S2D-2011	574003		
92500569011	DUP-1	SM 4500-S2D-2011	574003		
92500569013	MCM-05	SM 4500-S2D-2011	574068		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS APP III
Pace Project No.: 92500569

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500569014	DPZ-2	SM 4500-S2D-2011	574068		
92500569015	RW-4	SM 4500-S2D-2011	574068		
92500569016	RW-5	SM 4500-S2D-2011	574068		
92500569017	RW-6	SM 4500-S2D-2011	574068		
92500569018	DUP-2	SM 4500-S2D-2011	574068		
92500569019	FBL101520	SM 4500-S2D-2011	574068		
92500569001	MCM-06	SM 5210B-2011	573672	SM 5210B-2011	573696
92500569002	MCM-07	SM 5210B-2011	573671	SM 5210B-2011	573695
92500569003	MCM-14	SM 5210B-2011	573671	SM 5210B-2011	573695
92500569004	RW-1	SM 5210B-2011	573671	SM 5210B-2011	573695
92500569005	RW-2	SM 5210B-2011	573671	SM 5210B-2011	573695
92500569006	RW-3	SM 5210B-2011	573672	SM 5210B-2011	573696
92500569007	RW-7	SM 5210B-2011	573671	SM 5210B-2011	573695
92500569008	RW-8	SM 5210B-2011	573672	SM 5210B-2011	573696
92500569009	RW-9	SM 5210B-2011	573671	SM 5210B-2011	573695
92500569010	RW-10	SM 5210B-2011	573671	SM 5210B-2011	573695
92500569011	DUP-1	SM 5210B-2011	573671	SM 5210B-2011	573695
92500569013	MCM-05	SM 5210B-2011	573919	SM 5210B-2011	573940
92500569014	DPZ-2	SM 5210B-2011	573919	SM 5210B-2011	573940
92500569015	RW-4	SM 5210B-2011	573919	SM 5210B-2011	573940
92500569016	RW-5	SM 5210B-2011	573919	SM 5210B-2011	573940
92500569017	RW-6	SM 5210B-2011	573919	SM 5210B-2011	573940
92500569018	DUP-2	SM 5210B-2011	573919	SM 5210B-2011	573940
92500569019	FBL101520	SM 5210B-2011	573919	SM 5210B-2011	573940
92500569001	MCM-06	EPA 300.0 Rev 2.1 1993	573642		
92500569002	MCM-07	EPA 300.0 Rev 2.1 1993	573642		
92500569003	MCM-14	EPA 300.0 Rev 2.1 1993	573642		
92500569004	RW-1	EPA 300.0 Rev 2.1 1993	573642		
92500569005	RW-2	EPA 300.0 Rev 2.1 1993	573642		
92500569006	RW-3	EPA 300.0 Rev 2.1 1993	573642		
92500569007	RW-7	EPA 300.0 Rev 2.1 1993	573642		
92500569008	RW-8	EPA 300.0 Rev 2.1 1993	573642		
92500569009	RW-9	EPA 300.0 Rev 2.1 1993	573642		
92500569010	RW-10	EPA 300.0 Rev 2.1 1993	573643		
92500569011	DUP-1	EPA 300.0 Rev 2.1 1993	573643		
92500569012	FBL101420	EPA 300.0 Rev 2.1 1993	573643		
92500569013	MCM-05	EPA 300.0 Rev 2.1 1993	574246		
92500569014	DPZ-2	EPA 300.0 Rev 2.1 1993	574246		
92500569015	RW-4	EPA 300.0 Rev 2.1 1993	574246		
92500569016	RW-5	EPA 300.0 Rev 2.1 1993	574246		
92500569017	RW-6	EPA 300.0 Rev 2.1 1993	574246		
92500569018	DUP-2	EPA 300.0 Rev 2.1 1993	574246		
92500569019	FBL101520	EPA 300.0 Rev 2.1 1993	574246		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS APP III
Pace Project No.: 92500569

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500569001	MCM-06	EPA 353.2 Rev 2.0 1993	573633		
92500569002	MCM-07	EPA 353.2 Rev 2.0 1993	573633		
92500569003	MCM-14	EPA 353.2 Rev 2.0 1993	573633		
92500569004	RW-1	EPA 353.2 Rev 2.0 1993	573633		
92500569005	RW-2	EPA 353.2 Rev 2.0 1993	573633		
92500569006	RW-3	EPA 353.2 Rev 2.0 1993	573633		
92500569007	RW-7	EPA 353.2 Rev 2.0 1993	573633		
92500569008	RW-8	EPA 353.2 Rev 2.0 1993	573633		
92500569009	RW-9	EPA 353.2 Rev 2.0 1993	573633		
92500569010	RW-10	EPA 353.2 Rev 2.0 1993	573633		
92500569011	DUP-1	EPA 353.2 Rev 2.0 1993	573633		
92500569013	MCM-05	EPA 353.2 Rev 2.0 1993	573905		
92500569014	DPZ-2	EPA 353.2 Rev 2.0 1993	573905		
92500569015	RW-4	EPA 353.2 Rev 2.0 1993	573905		
92500569016	RW-5	EPA 353.2 Rev 2.0 1993	573905		
92500569017	RW-6	EPA 353.2 Rev 2.0 1993	573905		
92500569018	DUP-2	EPA 353.2 Rev 2.0 1993	573905		
92500569019	FBL101520	EPA 353.2 Rev 2.0 1993	573905		
92500569001	MCM-06	SM 4500-P E-2011	573616		
92500569002	MCM-07	SM 4500-P E-2011	573616		
92500569003	MCM-14	SM 4500-P E-2011	573616		
92500569004	RW-1	SM 4500-P E-2011	573616		
92500569005	RW-2	SM 4500-P E-2011	573616		
92500569006	RW-3	SM 4500-P E-2011	573616		
92500569007	RW-7	SM 4500-P E-2011	573616		
92500569008	RW-8	SM 4500-P E-2011	573616		
92500569009	RW-9	SM 4500-P E-2011	573616		
92500569010	RW-10	SM 4500-P E-2011	573616		
92500569011	DUP-1	SM 4500-P E-2011	573616		
92500569013	MCM-05	SM 4500-P E-2011	573921		
92500569014	DPZ-2	SM 4500-P E-2011	573921		
92500569015	RW-4	SM 4500-P E-2011	573921		
92500569016	RW-5	SM 4500-P E-2011	573921		
92500569017	RW-6	SM 4500-P E-2011	573921		
92500569018	DUP-2	SM 4500-P E-2011	573921		
92500569019	FBL101520	SM 4500-P E-2011	573921		
92500569001	MCM-06	SM 5310B-2011	576014		
92500569002	MCM-07	SM 5310B-2011	576014		
92500569003	MCM-14	SM 5310B-2011	576014		
92500569004	RW-1	SM 5310B-2011	576014		
92500569005	RW-2	SM 5310B-2011	576358		
92500569006	RW-3	SM 5310B-2011	576358		
92500569007	RW-7	SM 5310B-2011	576358		
92500569008	RW-8	SM 5310B-2011	576358		
92500569009	RW-9	SM 5310B-2011	576358		
92500569010	RW-10	SM 5310B-2011	576358		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCMANUS APP III

Pace Project No.: 92500569

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92500569011	DUP-1	SM 5310B-2011	576358		
92500569013	MCM-05	SM 5310B-2011	576358		
92500569014	DPZ-2	SM 5310B-2011	576358		
92500569015	RW-4	SM 5310B-2011	576358		
92500569016	RW-5	SM 5310B-2011	576358		
92500569017	RW-6	SM 5310B-2011	576358		
92500569018	DUP-2	SM 5310B-2011	576359		
92500569019	FBL101520	SM 5310B-2011	576359		

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition
 Upon Receipt

Client Name:
Georgia Power

Project # **W0# : 92500569**

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



Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *SG 10.15.20*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?
 Yes No N/A

Thermometer: IR Gun ID: *9570ld* Type of Ice: Wet Blue None

Cooler Temp (°C): *1.4, 2.6, 3.8* Correction Factor: Add/Subtract (°C) *0*

Temp should be above freezing to 6°C

Cooler Temp Corrected (°C): *1.4, 2.6, 3.8*

Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil N/A, water sample

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

		Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC?	<i>SG 10/15/20</i> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9. <i>No TOC vials for sample 12.</i>
-Includes Date/Time/ID/Analysis Matrix:	<i>Wt</i>	
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: February 7, 2018 Page 1 of 2
Document No.: F-CAR-CS-033-Rev.06	Issuing Authority: Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottle

Project #

WO# : 92500569

PM: KLH1

Due Date: 10/29/20

CLIENT: GA-GA Power

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	V5GU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	1	3	1	1	1	1	1	1											3								
2	1	3	1	1	1	1	1	1											3								
3	1	3	1	1	1	1	1	1											3								
4	1	3	1	1	1	1	1	1											3								
5	1	3	1	1	1	1	1	1											3								
6	1	3	1	1	1	1	1	1											3								
7	1	3	1	1	1	1	1	1											3								
8	1	3	1	1	1	1	1	1											3								
9	1	3	1	1	1	1	1	1											3								
10	1	3	1	1	1	1	1	1											3								
11	1	3	1	1	1	1	1	1											3								
12	1	1	1	1	1	1	1	1																	2		

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Client Information: **Georgia Power** Report To: **Karen Stephenson** Section B Required Project Information: **Sevin Sulfox** Tent Garden
 Address: **1003 Washington Parkway** Copy To: **Sevin Sulfox** Tent Garden
 City/State: **Atlanta, GA 30328** Project Number: **Atlanta, GA 30328** Section C Invoice Information: **Sevin Sulfox** Tent Garden
 Project Name: **Atlanta, GA 30328** Project #:

Section B Required Project Information: **Sevin Sulfox** Tent Garden
 Address: **1003 Washington Parkway** Copy To: **Sevin Sulfox** Tent Garden
 City/State: **Atlanta, GA 30328** Project Number: **Atlanta, GA 30328** Section C Invoice Information: **Sevin Sulfox** Tent Garden
 Project Name: **Atlanta, GA 30328** Project #:

ITEM #	SAMPLER ID One Character per box. (A-Z, 0-9)	MATHS CODE (see valid code on left)	DATE	TIME	DATE	TIME	SAMPLER TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES								Analyses Test	Y/N	Residual Chlorine (Y/N)	PH	
									H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	G010 - Mg, Mn, Na, K, Fe, Co, As, B					Alkalinity
1	MCM-06	WT 6	10/14/20	1652			10	5	1	1	1	3	X	X	X	X	X	X	X	X	6.93
2	MCM-07	WT 6	10/14/20	1442			10	5	1	1	1	3	X	X	X	X	X	X	X	X	6.32
3	MCM-14	WT 6	10/14/20	1300			10	5	1	1	1	3	X	X	X	X	X	X	X	X	6.50
4	RW-1	WT 6	10/14/20	1219			11	6	1	1	1	3	X	X	X	X	X	X	X	X	6.45
5	RW-2	WT 6	10/14/20	1504			11	6	1	1	1	3	X	X	X	X	X	X	X	X	6.53
6	RW-3	WT 6	10/14/20	1117			11	6	1	1	1	3	X	X	X	X	X	X	X	X	6.22
7	RW-7	WT 6	10/14/20	1543			11	6	1	1	1	3	X	X	X	X	X	X	X	X	6.24
8	RW-8	WT 6	10/14/20	1030			11	6	1	1	1	3	X	X	X	X	X	X	X	X	6.25
9	RW-9	WT 6	10/14/20	1504			11	6	1	1	1	3	X	X	X	X	X	X	X	X	6.55
10	RW-10	WT 6	10/14/20	1500			11	6	1	1	1	3	X	X	X	X	X	X	X	X	6.43
11	DOP-1	WT 6	10/14/20	---			11	6	1	1	1	3	X	X	X	X	X	X	X	X	
12	FBL101420	WT 6	10/14/20	1047			5	2	3			3	X	X	X	X	X	X	X	X	

RELINQUISHED BY / APPLICATION	DATE	TIME	ACCEPTED BY / APPLICATION	DATE	TIME	SAMPLER CONDITIONS
Venovia G	10/14/20	0630	Sevin Sulfox	10/14/20	0630	Analyses as possible

SAMPLER NAME AND SIGNATURE: **Venovia G, Trent Gwynn, Trent Gwynn**

PRINT NAME OF SAMPLER: **Venovia G**

SIGNATURE OF SAMPLER: **Venovia G**

DATE SIGNED: **10/14/20**

TEMP in C: **3.8**

Received on Ice? (Y/N): **N**

Custody Sealed? (Y/N): **N**

Cooler? (Y/N): **N**

Samples Intact? (Y/N): **Y**

October 30, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCMANUS AS SPECIATION
Pace Project No.: 92500800

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 15, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCMANUS AS SPECIATION

Pace Project No.: 92500800

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92500800001	RW-1	Water	10/14/20 12:19	10/15/20 00:00
92500800002	RW-2	Water	10/14/20 15:04	10/15/20 00:00
92500800003	RW-3	Water	10/14/20 17:17	10/15/20 00:00
92500800004	RW-7	Water	10/14/20 15:43	10/15/20 00:00
92500800005	RW-8	Water	10/14/20 16:30	10/15/20 00:00
92500800006	RW-9	Water	10/14/20 13:04	10/15/20 00:00
92500800007	RW-10	Water	10/14/20 15:00	10/15/20 00:00
92500800008	DUP-1	Water	10/14/20 00:00	10/15/20 00:00
92500800009	MCM-06	Water	10/14/20 16:52	10/15/20 00:00
92500800010	MCM-07	Water	10/14/20 14:42	10/15/20 00:00
92500800011	MCM-14	Water	10/14/20 13:00	10/15/20 00:00

REPORT OF LABORATORY ANALYSIS

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BROOKS APPLIED LABS

Chain-of-Custody Form

Ship samples to:
 18804 North Creek Parkway, Suite 100
 Bothell, WA 98011

For BAL use only

Received by: _____ Date: _____

Work Order ID: _____ Time: _____

Project ID: _____

Client: Georgia Power Company PO Number: _____ Mailing Address: 2400 Ridge Hill Rd
 Contact: Kristen Swartz Phone: 404-506-7116 Atlanta, GA 30308
 Client Project ID: _____ Email: kristen.swartz@ge.com Email Receipt Confirmation? (Yes/No) _____
 Samples Collected By: Kristen Swartz University of Georgia Stacy Dill Robert Turner Gregory PM: _____

Requested TAT (business days)

20 (standard)

15*

10*

5*

Other _____

*Surcharges may apply to expedited TATs

Sample ID	Collection		Client Sample Info				BAL Analyses Required				Comments				
	Date	Time	Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl /HNO ₃ /Other	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify) InOrg <u>As(V) MMA DMA</u>		Se Species (specify) Se(IV), Se(VI), SeCN, Unknown	Filtration	Other (specify)	Other (specify)
1 RM-1	10/14/20	1219	GWD	2	Y	ICE			X	X					
2 RM-2	10/14/20	1504	GWD	2	Y	ICE			X	X					
3 RM-3	10/14/20	1717	GWD	2	Y	ICE			X	X					
4 RM-7	10/14/20	1543	GWD	2	Y	ICE			X	X					
5 RM-8	10/14/20	1630	GWD	2	Y	ICE			X	X					
6 RM-9	10/14/20	1304	GWD	2	Y	ICE			X	X					
7 RM-10	10/14/20	1500	GWD	2	Y	ICE			X	X					
8 Dug-1	10/14/20	-	GWD	2	Y	ICE			X	X					
9 MESA-06	10/14/20	1652	GWD	2	Y	ICE			X	X					
10 MESA-07	10/14/20	1447	GWD	2	Y	ICE			X	X					
Trip Blank															

Relinquished By: Kristen Swartz Date: 10/14/20 Time: 1820 Relinquished By: _____ Date: _____ Time: _____

Received By: Endrey Date: _____ Time: _____ Total Number of Packages: _____

Page 1 of 2 List Hazardous Contaminants: _____

MO#: 92500800

92500800



**BROOKS
APPLIED
LABS**

Chain-of-Custody Form
 Ship samples to:
 18804 North Creek Parkway, Suite 100
 Bothell, WA 98011

Received by: Spencer Shilby Date: 10/15/20
 Work Order ID: _____ Time: 11:00
 Project ID: _____

For BAL use only

Client: Georgia Power Company PO Number: _____
 Contact: Karen Thomas Phone: 504-506-2116 Mailing Address: 241 Ridge Hill Blvd
 Client Project ID: _____ Email: kguyako@scd.com Atlanta, GA 30308
 Samples Collected By: Karen Thomas BAL PM: _____ Email Receipt Confirmation? (Yes/No) _____

Sample ID	Collection		Client Sample Info				BAL Analyses Required				Comments				
	Date	Time	Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO ₃ /Other	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals <u>As</u> (specify) <u>total Pb, Cu, Ni, Cr</u>	As Species (specify) <u>In Org, III, V, MMA, DMA</u>		Se Species (specify) <u>Se(IV), Se(VI), SeCN, Unknown</u>	Filtration	Other (specify) <u>Sum of Unknowns</u>	Other (specify)
1	<u>10/14/20</u>	<u>1300</u>	<u>Gas</u>	<u>2</u>	<u>Y</u>	<u>Free</u>			<u>X</u>	<u>X</u>			<u>X</u>		
2															
3															
4															
5															
6															
7															
8															
9															
10															
Trip Blank															
Relinquished By: <u>Karen Thomas</u>			Date: <u>10/15/20</u>	Time: <u>10/14/20</u>	Relinquished By: _____										
Received By: <u>Spencer Shilby</u>			Date: _____	Time: _____	Total Number of Packages: _____										

Requested TAT (business days)
 20 (standard)
 15*
 10*
 5*
 Other _____
 *Surcharges may apply to expedited TATs

Page 2 of 2 List Hazardous Contaminants: _____

W0#: 92500800
 PH: KLH1 Due Date: 10/29/20
 CLIENT: GA-GA Power



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

October 29, 2020

Pace Analytical Services – Huntersville
ATTN: Kevin Herring
9800 Kinsey Ave., Suite 100
Huntersville, NC 28078
Kevin.Herring@pacelabs.com

RE: Project PAC-HN2007

Client Project: 92500800

Dear Kevin Herring,

On October 15, 2020, Brooks Applied Labs (BAL) received eleven (11) water samples at a temperature of 7.1°C. The samples were logged-in for the analysis of arsenic (As) speciation per the chain-of-custody (COC). The client directly filtered (0.45µm) each sample into an evacuated container prior to receipt at BAL. All samples were stored according to BAL SOPs and EPA methodology.

BAL strongly recommends that all samples submitted for arsenic speciation remain at a temperature of less than or equal to 6° Celsius to maintain sample integrity prior to analysis. Consequently, the As speciation results were qualified (**Z**), indicating that the samples were received above the recommended temperature.

Arsenic Speciation by IC-ICP-CRC-MS

All aqueous samples for As speciation were analyzed using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). In accordance with the project agreement, As speciation was defined as dissolved arsenite [As(III)], arsenate [As(V)], monomethylarsonic acid [MMAs], and dimethylarsinic acid [DMAs]; the total estimated concentration of any unidentified arsenic-containing species detected in each sample has also been reported as Unk As Sp. Arsenic species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the Interference Reduction Technology section on our website, brooksapplied.com.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL the RPD was not calculated (**N/C**).

The results were not method blank corrected as described in the calculations section of the relevant BAL SOP(s) and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

It should be noted that all Brooks Applied Labs, LLC methods, standard operating procedures, inventions, ideas, processes, improvements, designs and techniques included or referred to therein, must be considered and treated as Proprietary Information, protected by the Washington State Trade Secret Act, RCW 19.108 et seq., and other laws. All Proprietary Information, written or implied, will not be distributed,

copied, or altered in any fashion without prior written consent from Brooks Applied Labs, LLC. All Proprietary Information (including originals, copies, summaries or other reproductions thereof) shall remain the property of Brooks Applied Labs, LLC at all times and must be returned upon demand. Furthermore, products presented in this document may be protected by Federal Patent laws and infringement will be subject to prosecution in accordance with Title 35 US Code 271.

All data was reported without further qualification and all other associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink that reads "Amy Goodall". The signature is written in a cursive, flowing style.

Amy Goodall
Project Manager
Brooks Applied Labs
amy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
 Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
 Issued on: July 27, 2020; Valid to: June 30, 2021
 Certificate Number: E87982-35

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Ag, As, Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4200	Non-Potable Waters	Se(IV), Se(VI)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

Table 2. Accredited method/matrix/analytes for ISO (1), Non-Governmental TNI (2), and DoD/DOE (3)

Issued by: ANAB

Issued on: January 10, 2020; Valid to: March 30, 2022

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)	DoD/DOE Accredited Analytes
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod BAL-5000	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn	Ag, Al, As, Ba, Ca, Cd, Cr, Cu, Fe, Pb, Mg, Mn, Ni, Sb, Se, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, V, Zn	Ag, As, Cd, Cr, Cu, Pb, Ni, Se, Zn
EPA 1640 Mod	Non-Potable Waters	Ag, As, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Tl, V, Zn	Not Accredited
EPA 1631E Mod BAL-3100 (waters) BAL-3101 (solids)	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury	Methyl Mercury (excluding Solids/Chemicals)
EPA 1632A Mod BAL-3300	Non-Potable Waters Solids/Chemicals	Inorganic Arsenic, As(III)	Inorganic Arsenic. As(III) for waters only.
	Biological/Food	Inorganic Arsenic	Inorganic Arsenic (excluding Food)
AOAC 2015.01 Mod BAL-5000 by BAL-5040	Food	As, Cd, Hg, Pb	Not Accredited
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs	Not Accredited
	Biological by BAL-4115	Inorganic Arsenic, DMAs, MMAs	Not Accredited
BAL-4101	Food by BAL-4116	Inorganic Arsenic, DMAs, MMAs	Not Accredited
BAL-4200	Non-Potable Waters	Se(IV), Se(VI), SeCN	Not Accredited
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet	Not Accredited
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II)	Not Accredited
SM2340B	Non-Potable Waters	Hardness	Hardness
SM 2540G EPA 160.3 BAL-0501	Solids/Chemicals & Biological	% Dry Weight	% Dry Weight

(1) ISO/IEC 17025:2017 – Certificate Number ADE-1447.2

(2) Non-Governmental NELAC Institute 2016 Standard – Certificate Number ADE-1447.1

(3) Department of Defense/Energy Consolidated Quality Systems Manual v. 5.3 – Certificate Numbers ADE-1447 for DoD, ADE-1447.3 for DOE.



Sample Information

Sample	Alias	Lab ID	Report Matrix	Type	Sampled	Received
RW-1	92500800001	2042040-01	GW	Sample	10/14/2020	10/15/2020
RW-2	92500800002	2042040-02	GW	Sample	10/14/2020	10/15/2020
RW-3	92500800003	2042040-03	GW	Sample	10/14/2020	10/15/2020
RW-7	92500800004	2042040-04	GW	Sample	10/14/2020	10/15/2020
RW-8	92500800005	2042040-05	GW	Sample	10/14/2020	10/15/2020
RW-9	92500800006	2042040-06	GW	Sample	10/14/2020	10/15/2020
RW-10	92500800007	2042040-07	GW	Sample	10/14/2020	10/15/2020
Dup-1	92500800008	2042040-08	GW	Field Duplicate	10/14/2020	10/15/2020
MCM-06	92500800009	2042040-09	GW	Sample	10/14/2020	10/15/2020
MCM-07	92500800010	2042040-10	GW	Sample	10/14/2020	10/15/2020
MCM-14	92500800011	2042040-11	GW	Sample	10/14/2020	10/15/2020

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
As(III)	Water	SOP BAL-4100	10/20/2020	10/21/2020	B202845	2001257
As(V)	Water	SOP BAL-4100	10/20/2020	10/21/2020	B202845	2001257
DMAs	Water	SOP BAL-4100	10/20/2020	10/21/2020	B202845	2001257
MMAs	Water	SOP BAL-4100	10/20/2020	10/21/2020	B202845	2001257
Unk As Sp	Water	SOP BAL-4100	10/20/2020	10/21/2020	B202845	2001257



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RW-1, 92500800001										
2042040-01	As(III)	GW	D	0.687	Z J	0.400	2.10	µg/L	B202845	2001257
2042040-01	As(V)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-01	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-01	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-01	Unk As Sp	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
RW-2, 92500800002										
2042040-02	As(III)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-02	As(V)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-02	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-02	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-02	Unk As Sp	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
RW-3, 92500800003										
2042040-03	As(III)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-03	As(V)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-03	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-03	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-03	Unk As Sp	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
RW-7, 92500800004										
2042040-04	As(III)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-04	As(V)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-04	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-04	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-04	Unk As Sp	GW	D	10.3	Z	0.500	2.10	µg/L	B202845	2001257
RW-8, 92500800005										
2042040-05	As(III)	GW	D	0.541	Z J	0.400	2.10	µg/L	B202845	2001257
2042040-05	As(V)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-05	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-05	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-05	Unk As Sp	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
RW-9, 92500800006										
2042040-06	As(III)	GW	D	0.460	Z J	0.400	2.10	µg/L	B202845	2001257
2042040-06	As(V)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-06	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-06	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-06	Unk As Sp	GW	D	32.5	Z	0.500	2.10	µg/L	B202845	2001257
RW-10, 92500800007										
2042040-07	As(III)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-07	As(V)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-07	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-07	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-07	Unk As Sp	GW	D	3.92	Z	0.500	2.10	µg/L	B202845	2001257
Dup-1, 92500800008										
2042040-08	As(III)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-08	As(V)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-08	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-08	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-08	Unk As Sp	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
MCM-06, 92500800009										
2042040-09	As(III)	GW	D	53.6	Z	0.400	2.10	µg/L	B202845	2001257
2042040-09	As(V)	GW	D	1.69	Z J	0.400	2.10	µg/L	B202845	2001257
2042040-09	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-09	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-09	Unk As Sp	GW	D	291	Z	0.500	2.10	µg/L	B202845	2001257
MCM-07, 92500800010										
2042040-10	As(III)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-10	As(V)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-10	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-10	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-10	Unk As Sp	GW	D	8.98	Z	0.500	2.10	µg/L	B202845	2001257



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MCM-14, 92500800011										
2042040-11	As(III)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-11	As(V)	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-11	DMAs	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257
2042040-11	MMAs	GW	D	≤ 0.400	Z U	0.400	2.10	µg/L	B202845	2001257
2042040-11	Unk As Sp	GW	D	≤ 0.500	Z U	0.500	2.10	µg/L	B202845	2001257



Accuracy & Precision Summary

Batch: B202845
Lab Matrix: Water
Method: SOP BAL-4100

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B202845-BS1	Blank Spike, (2042031)						
	As(III)		5.150	4.567	µg/L	89% 75-125	
	As(V)		5.200	5.043	µg/L	97% 75-125	
	DMAs		5.210	4.946	µg/L	95% 75-125	
B202845-BS2	Blank Spike, (2006012)						
	MMAAs		5.000	4.805	µg/L	96% 75-125	
B202845-DUP1	Duplicate, (2042040-07)						
	As(III)	ND		ND	µg/L		N/C 25
	As(V)	ND		ND	µg/L		N/C 25
	DMAs	ND		ND	µg/L		N/C 25
	MMAAs	ND		ND	µg/L		N/C 25
	Unk As Sp	3.917		3.872	µg/L		1% 25
B202845-MS1	Matrix Spike, (2042040-07)						
	As(III)	ND	104.5	104.4	µg/L	100% 75-125	
	As(V)	ND	97.10	104.3	µg/L	107% 75-125	
	DMAs	ND	100.0	102.3	µg/L	102% 75-125	
	MMAAs	ND	97.40	97.33	µg/L	100% 75-125	
B202845-MSD1	Matrix Spike Duplicate, (2042040-07)						
	As(III)	ND	104.5	106.3	µg/L	102% 75-125	2% 25
	As(V)	ND	97.10	103.9	µg/L	107% 75-125	0.4% 25
	DMAs	ND	100.0	102.5	µg/L	103% 75-125	0.2% 25
	MMAAs	ND	97.40	97.93	µg/L	101% 75-125	0.6% 25
B202845-DUP2	Duplicate, (2042050-03)						
	As(III)	1.271		1.264	µg/L		0.6% 25
	As(V)	ND		ND	µg/L		N/C 25
	DMAs	ND		ND	µg/L		N/C 25
	MMAAs	ND		ND	µg/L		N/C 25
	Unk As Sp	ND		ND	µg/L		N/C 25



Accuracy & Precision Summary

Batch: B202845
 Lab Matrix: Water
 Method: SOP BAL-4100

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B202845-MS2	Matrix Spike, (2042050-03)						
	As(III)	1.271	104.5	109.1	µg/L	103% 75-125	
	As(V)	ND	97.10	101.7	µg/L	105% 75-125	
	DMAs	ND	100.0	103.8	µg/L	104% 75-125	
	MMAAs	ND	97.40	100.4	µg/L	103% 75-125	
B202845-MSD2	Matrix Spike Duplicate, (2042050-03)						
	As(III)	1.271	104.5	110.3	µg/L	104% 75-125	1% 25
	As(V)	ND	97.10	101.2	µg/L	104% 75-125	0.5% 25
	DMAs	ND	100.0	104.5	µg/L	104% 75-125	0.7% 25
	MMAAs	ND	97.40	100.6	µg/L	103% 75-125	0.3% 25



Method Blanks & Reporting Limits

Batch: B202845
Matrix: Water
Method: SOP BAL-4100
Analyte: As(III)

Sample	Result	Units	
B202845-BLK1	0.00	µg/L	
B202845-BLK2	0.00	µg/L	
B202845-BLK3	0.00	µg/L	
B202845-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.021		MRL: 0.021

Analyte: As(V)

Sample	Result	Units	
B202845-BLK1	0.004	µg/L	
B202845-BLK2	0.002	µg/L	
B202845-BLK3	0.003	µg/L	
B202845-BLK4	0.004	µg/L	
Average:	0.003		MDL: 0.004
Limit:	0.021		MRL: 0.021

Analyte: DMAs

Sample	Result	Units	
B202845-BLK1	0.00	µg/L	
B202845-BLK2	0.00	µg/L	
B202845-BLK3	0.00	µg/L	
B202845-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.005
Limit:	0.021		MRL: 0.021



Method Blanks & Reporting Limits

Analyte: MMAs

Sample	Result	Units	
B202845-BLK1	0.00	µg/L	
B202845-BLK2	0.00	µg/L	
B202845-BLK3	0.00	µg/L	
B202845-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.021		MRL: 0.021

Analyte: Unk As Sp

Sample	Result	Units	
B202845-BLK1	0.00	µg/L	
B202845-BLK2	0.00	µg/L	
B202845-BLK3	0.00	µg/L	
B202845-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.005
Limit:	0.021		MRL: 0.021



Sample Containers

Lab ID: 2042040-01
 Sample: RW-1

Report Matrix: GW
 Sample Type: Sample

Collected: 10/14/2020
 Received: 10/15/2020

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040

Lab ID: 2042040-02
 Sample: RW-2

Report Matrix: GW
 Sample Type: Sample

Collected: 10/14/2020
 Received: 10/15/2020

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040

Lab ID: 2042040-03
 Sample: RW-3

Report Matrix: GW
 Sample Type: Sample

Collected: 10/14/2020
 Received: 10/15/2020

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040

Lab ID: 2042040-04
 Sample: RW-7

Report Matrix: GW
 Sample Type: Sample

Collected: 10/14/2020
 Received: 10/15/2020

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040



Sample Containers

Lab ID: 2042040-05

Sample: RW-8

Report Matrix: GW

Sample Type: Sample

Collected: 10/14/2020

Received: 10/15/2020

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040

Lab ID: 2042040-06

Sample: RW-9

Report Matrix: GW

Sample Type: Sample

Collected: 10/14/2020

Received: 10/15/2020

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040

Lab ID: 2042040-07

Sample: RW-10

Report Matrix: GW

Sample Type: Sample

Collected: 10/14/2020

Received: 10/15/2020

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040

Lab ID: 2042040-08

Sample: Dup-1

Report Matrix: GW

Sample Type: Field Duplicate

Collected: 10/14/2020

Received: 10/15/2020

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040

Project ID: PAC-HN2007
PM: Amy Goodall



BAL Report 2042040
Client PM: Kevin Herring
Client Project: 92500800

Sample Containers

Lab ID: 2042040-09		Report Matrix: GW				Collected: 10/14/2020	
Sample: MCM-06		Sample Type: Sample				Received: 10/15/2020	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040

Lab ID: 2042040-10		Report Matrix: GW				Collected: 10/14/2020	
Sample: MCM-07		Sample Type: Sample				Received: 10/15/2020	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040

Lab ID: 2042040-11		Report Matrix: GW				Collected: 10/14/2020	
Sample: MCM-14		Sample Type: Sample				Received: 10/15/2020	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042040

Shipping Containers

Cooler - 2042040

Received: October 15, 2020 11:00
Tracking No: 8126 1269 6086 via FedEx
Coolant Type: Ice
Temperature: 7.1 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: IR #21

Custody seals present? Yes
Custody seals intact? Yes
COC present? Yes

Chain of Custody

PASI Charlotte Laboratory



Workorder: 92500800

Workorder Name: MCMANUS AS SPECIATION

Results Requested By: 10/29/2020

Kevin Herring
 Pace Analytical Charlotte
 9800 Kincey Ave. Suite 100
 Huntersville, NC 28078
 Phone 1(704)875-9092
 Email: kevin.herring@pacelabs.com

P.O. KLH 92500800

Brooks Applied Labs
 18804 North Creek Pkwy, Suite 100
 Bothell, WA 98011

State of Sample Origin: GA

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	General	As Speciation	AS (U)	AS (V)	AS (MMA)	AS (DMA)	LAB USE ONLY
1	RW-1	10/14/2020 12:19	92500800001	Water	2	X					
2	RW-2	10/14/2020 15:04	92500800002	Water	2	X					
3	RW-3	10/14/2020 17:17	92500800003	Water	2	X					
4	RW-7	10/14/2020 15:43	92500800004	Water	2	X					
5	RW-8	10/14/2020 16:30	92500800005	Water	2	X					
6	RW-9	10/14/2020 13:04	92500800006	Water	2	X					
7	RW-10	10/14/2020 15:00	92500800007	Water	2	X					
8	DUP-1	10/14/2020 00:00	92500800008	Water	2	X					
9	MCM-06	10/14/2020 16:52	92500800009	Water	2	X					
10	MCM-07	10/14/2020 14:42	92500800010	Water	2	X					
11	MCM-14	10/14/2020 13:00	92500800011	Water	2	X					
12											
13											
14											
15											

					Comments
Transfers	Released By	Date/Time	Received By	Date/Time	
1			<i>[Signature]</i>	10/15/20	
2				11/00	
3					
Cooler Temperature on Receipt °C		Custody Seal Y or N		Received on Ice Y or N	
Samples Intact Y or N					



Chain-of-Custody Form

Ship samples to:
18804 North Creek Parkway, Suite 100
Bothell, WA 98011

For BAL use only
Received by: Spencer Shibuya Date: 10/15/20
Work Order ID: _____ Time: 11:00
Project ID: _____

Client: Georgia Power Company PO Number: _____ Mailing Address: 241 Ralph McGill Blvd
Contact: Kristen J. ... Phone: 404-506-7116 Atlanta, GA 30308
Client Project ID: _____ Email: kj...@...com Email Receipt Confirmation? (Yes/No)
Samples Collected By: Kevin Stojanovic, Jwanna Fry, Will ... BAL PM: _____

Requested TAT (business days)	Collection		Client Sample Info				BAL Analyses Required						Comments		
	Date	Time	Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO ₃ /Other	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify) <u>As, Pb, Cu, Fe, Ni, Zn, Cd, Cr, Mn, Mo, Se, V, W, Bi, Br, Co, Cs, K, Li, Mg, Na, Ni, Rb, Sr, Tl, U, Y, Zr</u>	As Species (specify) InOrg <u>(As, DMA)</u>	Se Species (specify) Se(IV), Se(VI), SeCN, Unknown	Filtration		Other (specify) <u>Sum of 57 unknowns</u>	Other (specify)
<input type="checkbox"/> 20 (standard) <input type="checkbox"/> 15* <input type="checkbox"/> 10* <input type="checkbox"/> 5* <input type="checkbox"/> Other _____	*Surcharges may apply to expedited TATs														
Sample ID	Specify Here														
1	RW-1	10/14/20	1219	GW	2	Y	FF			X	X			X	
2	RW-2	10/14/20	1504	GW	2	Y	FF			X	X			X	
3	RW-3	10/14/20	1717	GW	2	Y	FF			X	X			X	
4	RW-7	10/14/20	1543	GW	2	Y	FF			X	X			X	
5	RW-8	10/14/20	1630	GW	2	Y	FF			X	X			X	
6	RW-9	10/14/20	1304	GW	2	Y	FF			X	X			X	
7	RW-10	10/14/20	1500	GW	2	Y	FF			X	X			X	
8	Dup. 1	10/14/20	-	GW	2	Y	FF			X	X			X	
9	MCM-06	10/14/20	1652	GW	2	Y	FF			X	X			X	
10	MCM-07	10/14/20	1442	GW	2	Y	FF			X	X			X	
Trip Blank															
Relinquished By: <u>Kristen J...</u>	Date: <u>10/14/20</u>	Time: <u>1820</u>	Relinquished By: _____	Date: _____	Time: _____										
Received By: <u>FILE</u>	Date: _____	Time: _____	Total Number of Packages: _____												



Chain-of-Custody Form

Ship samples to:
18804 North Creek Parkway, Suite 100
Bothell, WA 98011

For BAL use only
Received by: Spencer Shibuya Date: 10/15/20
Work Order ID: _____ Time: 1100
Project ID: _____

Client: Georgia Power Company PO Number: _____
Contact: Kristen Jenkins Phone: 404-506-7416
Client Project ID: _____ Email: kjenkins@scottmccormick.com
Samples Collected By: Kristen Jenkins, Vanessa Foy, Will Walker, Brent Gordon

Mailing Address: 241 Ridge McGill Blvd
Atlanta, GA 30308
Email Receipt Confirmation? (Yes/No) _____
BAL PM: _____

Requested TAT (business days) <input type="checkbox"/> 20 (standard) <input type="checkbox"/> 15* <input type="checkbox"/> 10* <input type="checkbox"/> 5* <input type="checkbox"/> Other _____ <small>*Surcharges may apply to expedited TATs</small>	Collection		Client Sample Info				BAL Analyses Required						Comments		
	Date	Time	Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO ₃ /Other	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify) <u>As, Pb, Cd, Cu, Ni, V, Cr, Mn, Fe, Zn</u>	As Species (specify) <u>InOrg, III, V, MMA, DMA</u>	Se Species (specify) <u>Se(IV), Se(VI), SeCN, Unknown</u>	Filtration	Other (specify) <u>Sum of Dissolved Metals</u>	Other (specify)	Specify Here
Sample ID															
1	<u>NCM-14</u>	<u>10/14/20</u>	<u>1300</u>	<u>GW</u>	<u>2</u>	<u>✓</u>	<u>None</u>			<u>X</u>	<u>X</u>		<u>X</u>		
2															
3															
4															
5															
6															
7															
8															
9															
10															
Trip Blank															

Relinquished By: <u>Kristen Jenkins</u>	Date: <u>10/15/20</u>	Time: <u>10/14/20</u>	Relinquished By: _____	Date: _____	Time: _____
Received By: <u>Felix</u>	Date: _____	Time: _____	Total Number of Packages: _____		

October 30, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: MCMANUS AS SPECIATION
Pace Project No.: 92501055

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

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

Sincerely,



Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Veronica Fay
Trent Godwin, Resolute Environmental & Water Resources
Kristen Jurinko
Ms. Lauren Petty, Southern Co. Services
Kevin Stephenson, Resolute Environmental & Water
Resources Consulting, LLC
Stephen Wilson, Resolute Environmental & Water
Resources Consulting, LLC



REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: MCMANUS AS SPECIATION

Pace Project No.: 92501055

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92501055001	MCM-05	Water	10/15/20 13:48	10/16/20 00:00
92501055002	DPZ-2	Water	10/15/20 16:00	10/16/20 00:00
92501055003	RW-4	Water	10/15/20 14:46	10/16/20 00:00
92501055004	RW-5	Water	10/15/20 15:55	10/16/20 00:00
92501055005	RW-6	Water	10/15/20 14:03	10/16/20 00:00
92501055006	DUP-2	Water	10/15/20 00:00	10/16/20 00:00
92501055007	FBL101520	Water	10/15/20 17:36	10/16/20 00:00

REPORT OF LABORATORY ANALYSIS

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BROOKS APPLIED LABS Chain-of-Custody Form

Ship samples to:
 18804 North Creek Parkway, Suite 100
 Bothell, WA 98011

Received by: [Signature] Date: 10/16/20
 Work Order ID: _____ Time: 10:25
 Project ID: _____

Client: Georgia Power Company PO Number: _____
 Contact: Kristen Turinke Phone: 404-506-7116 Mailing Address: 241 Ralph McGill Blvd
 Client Project ID: _____ Email: kturinke@scsinc.com Atlanta, GA 30308
 Samples Collected By: Kevin Stephenson, Yecenia Faj, Will Lacker, Trent Gadhua Email Receipt Confirmation? (Yes/No) _____
 BAL PM: _____

- Requested TAT (business days)
- 20 (standard)
 - 15*
 - 10*
 - 5*
 - Other _____
- *Surcharges may apply to expedited TATs

Sample ID	Collection		Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO ₃ /Other	BAL Analyses Required							Comments			
	Date	Time					Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals As (specify) Total Rec, Diss	As Species (specify) InOrg, (III) (V) (MMA) (DMA)	Se Species (specify) Se(IV), Se(VI), SeCN, Unknown	Filtration	Other (specify) sum of unknown As		Other (specify)		
1 MCM-05	10/15/20	1348	GW	2	Y	Ice			X	X							
2 DPZ-2	10/15/20	1600	GW	2	Y	Ice			X	X							
3 RW-4	10/15/20	1446	GW	2	Y	Ice			X	X							
4 RW-5	10/15/20	1555	GW	2	Y	Ice			X	X							
5 RW-6	10/15/20	1403	GW	2	Y	Ice			X	X							
6 DUP-2	10/15/20	-	GW	2	Y	Ice			X	X							
7 FBL101520	10/15/20	1736	GW	2	Y	Ice			X	X							
8																	
9																	
10																	
Trip Blank																	

Relinquished By: William Lacker Date: 10/15/20 Time: 1800 Relinquished By: _____ Date: _____ Time: _____
 Received By: Fcdck Date: 10/15/20 Time: 1900 Total Number of Packages: _____

Page 1 of 1 List Hazardous Contaminants: _____

MO#: **92501055**

 92501055



18804 North Creek Parkway, Ste 100, Bothell, WA 98011 • USA • T: 206 632 6206 F: 206 632 6017 • info@brooksapplied.com

October 29, 2020

Pace Analytical Services – Huntersville
ATTN: Kevin Herring
9800 Kincey Ave., Suite 100
Huntersville, NC 28078
Kevin.Herring@pacelabs.com

RE: Project PAC-HN2007

Client Project: 92501055

Dear Kevin Herring,

On October 16, 2020, Brooks Applied Labs (BAL) received seven (7) water samples at a temperature of 1.6°C. The samples were logged-in for the analysis of arsenic (As) speciation per the chain-of-custody (COC). The client directly filtered (0.45µm) each sample into an evacuated container prior to receipt at BAL. All samples were stored according to BAL SOPs and EPA methodology.

Arsenic Speciation by IC-ICP-CRC-MS

All aqueous samples for As speciation were analyzed using ion chromatography inductively coupled plasma collision reaction cell mass spectrometry (IC-ICP-CRC-MS). In accordance with the project agreement, As speciation was defined as dissolved arsenite [As(III)], arsenate [As(V)], monomethylarsonic acid [MMAs], and dimethylarsinic acid [DMAs]; the total estimated concentration of any unidentified arsenic-containing species detected in each sample has also been reported as Unk As Sp. Arsenic species are chromatographically separated on an ion exchange column and then quantified using inductively coupled plasma collision reaction cell mass spectrometry (ICP-CRC-MS); for more information on this determinative technique, please visit the Interference Reduction Technology section on our website, brooksapplied.com.

In instances where the native sample result and/or the associated duplicate (DUP) result were below the MDL the RPD was not calculated (**N/C**).

The results were not method blank corrected as described in the calculations section of the relevant BAL SOP(s) and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

It should be noted that all Brooks Applied Labs, LLC methods, standard operating procedures, inventions, ideas, processes, improvements, designs and techniques included or referred to therein, must be considered and treated as Proprietary Information, protected by the Washington State Trade Secret Act, RCW 19.108 et seq., and other laws. All Proprietary Information, written or implied, will not be distributed, copied, or altered in any fashion without prior written consent from Brooks Applied Labs, LLC. All Proprietary Information (including originals, copies, summaries or other reproductions thereof) shall remain the property of Brooks Applied Labs, LLC at all times and must be returned upon demand. Furthermore, products presented in this document may be protected by Federal Patent laws and infringement will be subject to prosecution in accordance with Title 35 US Code 271.

All data was reported without further qualification and all other associated quality control sample results met the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink that reads "Amy Goodall". The signature is written in a cursive, flowing style.

Amy Goodall
Project Manager
Brooks Applied Labs
amy@brooksapplied.com



Report Information

Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <<http://www.brooksapplied.com/resources/certificates-permits/>> or review Tables 1 and 2 in our Accreditation Information. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

(Effective 3/23/2020)

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BAL.



Accreditation Information

Table 1. Accredited method/matrix/analytes for TNI
 Issued by: State of Florida Dept. of Health (The NELAC Institute 2016 Standard)
 Issued on: July 27, 2020; Valid to: June 30, 2021
 Certificate Number: E87982-35

Method	Matrix	TNI Accredited Analyte(s)
EPA 1638	Non-Potable Waters	Ag, Cd, Cu, Ni, Pb, Sb, Se, Tl, Zn
EPA 200.8	Non-Potable Waters	Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
EPA 6020	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, U, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Tl, V, Zn
BAL-5000	Non-Potable Waters	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn, Hardness
	Solids/Chemicals	Ag, As, B, Be, Cd, Co, Cr, Cu, Pb, Mo, Ni, Sb, Se, Sn, Sr, Tl, V, Zn
	Biological	Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Tl, V, Zn
EPA 1640	Non-Potable Waters	Ag, As, Cd, Cu, Pb, Ni, Zn
EPA 1631E	Non-Potable Waters, Solids/Chemicals & Biological	Total Mercury
EPA 1630	Non-Potable Waters	Methyl Mercury
BAL-3200	Solids/Chemicals & Biological	Methyl Mercury
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs
BAL-4200	Non-Potable Waters	Se(IV), Se(VI)
BAL-4201	Non-Potable Waters	Se(IV), Se(VI)
BAL-4300	Non-Potable Waters Solid/Chemicals	Cr(VI)
SM2340B	Non-Potable Waters	Hardness



Accreditation Information

Table 2. Accredited method/matrix/analytes for ISO (1), Non-Governmental TNI (2), and DoD/DOE (3)

Issued by: ANAB

Issued on: January 10, 2020; Valid to: March 30, 2022

Method	Matrix	ISO and Non-Gov. TNI Accredited Analyte(s)	DoD/DOE Accredited Analytes
EPA 1638 Mod EPA 200.8 Mod EPA 6020 Mod BAL-5000	Non-Potable Waters	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, U, V, Zn	Ag, Al, As, Ba, Ca, Cd, Cr, Cu, Fe, Pb, Mg, Mn, Ni, Sb, Se, V, Zn
	Solids/Chemicals & Biological	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sn, Sr, Tl, V, Zn	Ag, As, Cd, Cr, Cu, Pb, Ni, Se, Zn
EPA 1640 Mod	Non-Potable Waters	Ag, As, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Tl, V, Zn	Not Accredited
EPA 1631E Mod BAL-3100 (waters) BAL-3101 (solids)	Non-Potable Waters, Solids/Chemicals & Biological/Food	Total Mercury	Total Mercury
EPA 1630 Mod BAL-3200	Non-Potable Waters, Solids/Chemicals Biological	Methyl Mercury	Methyl Mercury (excluding Solids/Chemicals)
EPA 1632A Mod BAL-3300	Non-Potable Waters Solids/Chemicals	Inorganic Arsenic, As(III)	Inorganic Arsenic. As(III) for waters only.
	Biological/Food	Inorganic Arsenic	Inorganic Arsenic (excluding Food)
AOAC 2015.01 Mod BAL-5000 by BAL-5040	Food	As, Cd, Hg, Pb	Not Accredited
BAL-4100	Non-Potable Waters	As(III), As(V), DMAs, MMAs	Not Accredited
	Biological by BAL-4115	Inorganic Arsenic, DMAs, MMAs	Not Accredited
BAL-4101	Food by BAL-4116	Inorganic Arsenic, DMAs, MMAs	Not Accredited
BAL-4200	Non-Potable Waters	Se(IV), Se(VI), SeCN	Not Accredited
BAL-4201	Non-Potable Waters	Se(IV), Se(VI), SeCN, SeMet	Not Accredited
BAL-4300	Non-Potable Waters, Solid/Chemicals	Cr(VI)	Cr(VI)
SM 3500-Fe BAL-4500	Non-Potable Waters	Fe, Fe(II)	Not Accredited
SM2340B	Non-Potable Waters	Hardness	Hardness
SM 2540G EPA 160.3 BAL-0501	Solids/Chemicals & Biological	% Dry Weight	% Dry Weight

(1) ISO/IEC 17025:2017 – Certificate Number ADE-1447.2

(2) Non-Governmental NELAC Institute 2016 Standard – Certificate Number ADE-1447.1

(3) Department of Defense/Energy Consolidated Quality Systems Manual v. 5.3 – Certificate Numbers ADE-1447 for DoD, ADE-1447.3 for DOE.



Sample Information

Sample	Alias	Lab ID	Report Matrix	Type	Sampled	Received
MCM-05	92501055001	2042050-01	Water-D	Sample	10/15/2020	10/16/2020
DPZ-2	92501055002	2042050-02	Water-D	Sample	10/15/2020	10/16/2020
RW-4	92501055003	2042050-03	Water-D	Sample	10/15/2020	10/16/2020
RW-5	92501055004	2042050-04	Water-D	Sample	10/15/2020	10/16/2020
RW-6	92501055005	2042050-05	Water-D	Sample	10/15/2020	10/16/2020
DUP-2	92501055006	2042050-06	Water-D	Sample	10/15/2020	10/16/2020
FBL101520	92501055007	2042050-07	Water-D	Sample	10/15/2020	10/16/2020

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
As(III)	Water	SOP BAL-4100	10/20/2020	10/21/2020	B202845	2001257
As(V)	Water	SOP BAL-4100	10/20/2020	10/21/2020	B202845	2001257
DMAs	Water	SOP BAL-4100	10/20/2020	10/21/2020	B202845	2001257
MMAs	Water	SOP BAL-4100	10/20/2020	10/21/2020	B202845	2001257
Unk As Sp	Water	SOP BAL-4100	10/20/2020	10/21/2020	B202845	2001257



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MCM-05, 92501055001										
2042050-01	As(III)	Water-D	D	1.13	J	0.400	2.10	µg/L	B202845	2001257
2042050-01	As(V)	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-01	DMAs	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
2042050-01	MMAs	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-01	Unk As Sp	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
DPZ-2, 92501055002										
2042050-02	As(III)	Water-D	D	0.461	J	0.400	2.10	µg/L	B202845	2001257
2042050-02	As(V)	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-02	DMAs	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
2042050-02	MMAs	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-02	Unk As Sp	Water-D	D	17.3		0.500	2.10	µg/L	B202845	2001257
RW-4, 92501055003										
2042050-03	As(III)	Water-D	D	1.27	J	0.400	2.10	µg/L	B202845	2001257
2042050-03	As(V)	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-03	DMAs	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
2042050-03	MMAs	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-03	Unk As Sp	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
RW-5, 92501055004										
2042050-04	As(III)	Water-D	D	0.401	J	0.400	2.10	µg/L	B202845	2001257
2042050-04	As(V)	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-04	DMAs	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
2042050-04	MMAs	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-04	Unk As Sp	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
RW-6, 92501055005										
2042050-05	As(III)	Water-D	D	0.714	J	0.400	2.10	µg/L	B202845	2001257
2042050-05	As(V)	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-05	DMAs	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
2042050-05	MMAs	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-05	Unk As Sp	Water-D	D	0.946	J	0.500	2.10	µg/L	B202845	2001257



Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
DUP-2, 92501055006										
2042050-06	As(III)	Water-D	D	0.412	J	0.400	2.10	µg/L	B202845	2001257
2042050-06	As(V)	Water-D	D	0.572	J	0.400	2.10	µg/L	B202845	2001257
2042050-06	DMAs	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
2042050-06	MMAs	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-06	Unk As Sp	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
FBL101520, 92501055007										
2042050-07	As(III)	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-07	As(V)	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-07	DMAs	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257
2042050-07	MMAs	Water-D	D	≤ 0.400	U	0.400	2.10	µg/L	B202845	2001257
2042050-07	Unk As Sp	Water-D	D	≤ 0.500	U	0.500	2.10	µg/L	B202845	2001257



Accuracy & Precision Summary

Batch: B202845
Lab Matrix: Water
Method: SOP BAL-4100

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B202845-BS1	Blank Spike, (2042031)						
	As(III)		5.150	4.567	µg/L	89% 75-125	
	As(V)		5.200	5.043	µg/L	97% 75-125	
	DMAs		5.210	4.946	µg/L	95% 75-125	
B202845-BS2	Blank Spike, (2006012)						
	MMAAs		5.000	4.805	µg/L	96% 75-125	
B202845-DUP1	Duplicate, (2042040-07)						
	As(III)	ND		ND	µg/L		N/C 25
	As(V)	ND		ND	µg/L		N/C 25
	DMAs	ND		ND	µg/L		N/C 25
	MMAAs	ND		ND	µg/L		N/C 25
Unk As Sp	3.917		3.872	µg/L		1% 25	
B202845-MS1	Matrix Spike, (2042040-07)						
	As(III)	ND	104.5	104.4	µg/L	100% 75-125	
	As(V)	ND	97.10	104.3	µg/L	107% 75-125	
	DMAs	ND	100.0	102.3	µg/L	102% 75-125	
	MMAAs	ND	97.40	97.33	µg/L	100% 75-125	
B202845-MSD1	Matrix Spike Duplicate, (2042040-07)						
	As(III)	ND	104.5	106.3	µg/L	102% 75-125	2% 25
	As(V)	ND	97.10	103.9	µg/L	107% 75-125	0.4% 25
	DMAs	ND	100.0	102.5	µg/L	103% 75-125	0.2% 25
	MMAAs	ND	97.40	97.93	µg/L	101% 75-125	0.6% 25
B202845-DUP2	Duplicate, (2042050-03)						
	As(III)	1.271		1.264	µg/L		0.6% 25
	As(V)	ND		ND	µg/L		N/C 25
	DMAs	ND		ND	µg/L		N/C 25
	MMAAs	ND		ND	µg/L		N/C 25
Unk As Sp	ND		ND	µg/L		N/C 25	



Accuracy & Precision Summary

Batch: B202845
Lab Matrix: Water
Method: SOP BAL-4100

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B202845-MS2	Matrix Spike, (2042050-03)						
	As(III)	1.271	104.5	109.1	µg/L	103% 75-125	
	As(V)	ND	97.10	101.7	µg/L	105% 75-125	
	DMAAs	ND	100.0	103.8	µg/L	104% 75-125	
	MMAAs	ND	97.40	100.4	µg/L	103% 75-125	
B202845-MSD2	Matrix Spike Duplicate, (2042050-03)						
	As(III)	1.271	104.5	110.3	µg/L	104% 75-125	1% 25
	As(V)	ND	97.10	101.2	µg/L	104% 75-125	0.5% 25
	DMAAs	ND	100.0	104.5	µg/L	104% 75-125	0.7% 25
	MMAAs	ND	97.40	100.6	µg/L	103% 75-125	0.3% 25



Method Blanks & Reporting Limits

Batch: B202845
Matrix: Water
Method: SOP BAL-4100
Analyte: As(III)

Sample	Result	Units	
B202845-BLK1	0.00	µg/L	
B202845-BLK2	0.00	µg/L	
B202845-BLK3	0.00	µg/L	
B202845-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.004
Limit: 0.021			MRL: 0.021

Analyte: As(V)

Sample	Result	Units	
B202845-BLK1	0.004	µg/L	
B202845-BLK2	0.002	µg/L	
B202845-BLK3	0.003	µg/L	
B202845-BLK4	0.004	µg/L	
Average: 0.003			MDL: 0.004
Limit: 0.021			MRL: 0.021

Analyte: DMAs

Sample	Result	Units	
B202845-BLK1	0.00	µg/L	
B202845-BLK2	0.00	µg/L	
B202845-BLK3	0.00	µg/L	
B202845-BLK4	0.00	µg/L	
Average: 0.000			MDL: 0.005
Limit: 0.021			MRL: 0.021



Method Blanks & Reporting Limits

Analyte: MMAs

Sample	Result	Units	
B202845-BLK1	0.00	µg/L	
B202845-BLK2	0.00	µg/L	
B202845-BLK3	0.00	µg/L	
B202845-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.004
Limit:	0.021		MRL: 0.021

Analyte: Unk As Sp

Sample	Result	Units	
B202845-BLK1	0.00	µg/L	
B202845-BLK2	0.00	µg/L	
B202845-BLK3	0.00	µg/L	
B202845-BLK4	0.00	µg/L	
Average:	0.000		MDL: 0.005
Limit:	0.021		MRL: 0.021



Sample Containers

Lab ID: 2042050-01		Report Matrix: Water-D				Collected: 10/15/2020	
Sample: MCM-05		Sample Type: Sample				Received: 10/16/2020	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050

Lab ID: 2042050-02		Report Matrix: Water-D				Collected: 10/15/2020	
Sample: DPZ-2		Sample Type: Sample				Received: 10/16/2020	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050

Lab ID: 2042050-03		Report Matrix: Water-D				Collected: 10/15/2020	
Sample: RW-4		Sample Type: Sample				Received: 10/16/2020	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050

Lab ID: 2042050-04		Report Matrix: Water-D				Collected: 10/15/2020	
Sample: RW-5		Sample Type: Sample				Received: 10/16/2020	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050



Sample Containers

Lab ID: 2042050-05		Report Matrix: Water-D				Collected: 10/15/2020	
Sample: RW-6		Sample Type: Sample				Received: 10/16/2020	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050

Lab ID: 2042050-06		Report Matrix: Water-D				Collected: 10/15/2020	
Sample: DUP-2		Sample Type: Sample				Received: 10/16/2020	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050

Lab ID: 2042050-07		Report Matrix: Water-D				Collected: 10/15/2020	
Sample: FBL101520		Sample Type: Sample				Received: 10/16/2020	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Vacutainer	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050
B	XTRA_VOL	10 mL	20-0160	EDTA (Vial)	n/a	n/a	Cooler - 2042050

Shipping Containers

Cooler - 2042050

Received: October 16, 2020 10:25
Tracking No: 8126 1271 3299 via FedEx
Coolant Type: Ice
Temperature: 1.6 °C

Description: Cooler
Damaged in transit? No
Returned to client? No
Comments: IR# 21

Custody seals present? Yes
Custody seals intact? Yes
COC present? Yes

Chain of Custody

PASI Charlotte Laboratory



Workorder: 92501055

Workorder Name: MCMANUS AS SPECIATION

Results Requested By: 10/30/2020

Report / Invoice To	Subcontract To	Requested Analysis
---------------------	----------------	--------------------

Kevin Herring
 Pace Analytical Charlotte
 9800 Kinsey Ave. Suite 100
 Huntersville, NC 28078
 Phone 1(704)875-9092
 Email: kevin.herring@pacelabs.com

P.O. KLH 92501055

Brooks Applied Labs
 18804 North Creek Pkwy, Suite 100
 Bothell, WA 98011

State of Sample Origin: GA

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	General	As Speciation	AS (III)	AS (V)	AS (MMA)	AS (DMA)	LAB USE ONLY
1	MCM-05	10/15/2020 13:48	92501055001	Water	2	X					
2	DPZ-2	10/15/2020 16:00	92501055002	Water	2	X					
3	RW-4	10/15/2020 14:46	92501055003	Water	2	X					
4	RW-5	10/15/2020 15:55	92501055004	Water	2	X					
5	RW-6	10/15/2020 14:03	92501055005	Water	2	X					
6	DUP-2	10/15/2020 00:00	92501055006	Water	2	X					
7	FBL101520	10/15/2020 17:36	92501055007	Water	2	X					

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1					
2					
3					

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



Chain-of-Custody Form

Ship samples to:
18804 North Creek Parkway, Suite 100
Bothell, WA 98011

BAL Report 2042050

Received by: [Signature] For BAL use only Date: 10/16/20

Work Order ID: _____ Time: 10:25

Project ID: _____

Client: Georgia Power Company PO Number: _____ Mailing Address: 241 Ralph McGill Blvd
 Contact: Kristen Jurinke Phone: 404-506-7116 Atlanta, GA 30308
 Client Project ID: _____ Email: knjurink@scuitemco.com Email Receipt Confirmation? (Yes/No)
 Samples Collected By: Kevin Stephenson, Veronica Fay, Will Locker, Trent Godwin BAL PM: _____

Requested TAT (business days)		Collection		Client Sample Info				BAL Analyses Required						Comments			
		Date	Time	Matrix Type	Number of Containers	Field Filtered? (Yes/No)	Preservation Type HCl/HNO ₃ /Other	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals As (specify) Total Rec, Diss	As Species (specify) InOrg, (MMA) DMA	Se Species (specify) Se(IV), Se(VI), SeCN, Unknown	Filtration		Other (specify) sum of unknown As	Other (specify)	
<input type="checkbox"/> 20 (standard)																	
<input type="checkbox"/> 15*																	
<input type="checkbox"/> 10*																	
<input type="checkbox"/> 5*																	
<input type="checkbox"/> Other _____																	
*Surcharges may apply to expedited TATs																	
Sample ID																	Specify Here
1	MCM-05	10/15/20	1348	GW	2	Y	Ice			X	X				X		
2	DPZ-2	10/15/20	1600	GW	2	Y	Ice			X	X				X		
3	RW-4	10/15/20	1446	GW	2	Y	Ice			X	X				X		
4	RW-5	10/15/20	1555	GW	2	Y	Ice			X	X				X		
5	RW-6	10/15/20	1403	GW	2	Y	Ice			X	X				X		
6	DUP-2	10/15/20	-	GW	2	Y	Ice			X	X				X		
7	FBL101520	10/15/20	1736	GW	2	Y	Ice			X	X				X		
8																	
9																	
10																	
Trip Blank																	
Relinquished By: <u>William Locker</u>		Date: <u>10/15/20</u>		Time: <u>1800</u>		Relinquished By:		Date:		Time:							
Received By: <u>Fedex</u>		Date: <u>10/15/20</u>		Time: <u>1800</u>		Total Number of Packages:											

ATTACHMENT 2

Bench-scale Treatability Testing for Soluble Arsenic and Lithium
in Groundwater (Phase I and Phase II Summary Report)
(PeroxyChem 2020)





9 September 2020

Stephen K. Wilson, P.G.
Principal
Resolute Consulting
1003 Weatherstone Parkway, Suite 320
Woodstock, Georgia 30188

**Subject: Bench-scale Treatability Testing for Soluble Arsenic and Lithium in Groundwater
(Phase I and Phase II Summary Report)**

Dear Mr. Wilson:

Bench-scale treatability testing was conducted using PeroxyChem's MetaFix® reagents and soil and groundwater samples collected from the Dike area of an industrial site in Georgia (the Site). The objective of the work was to evaluate the efficacy of MetaFix® reagents for removal of soluble arsenic and lithium in groundwater at the Site. The treatability testing was conducted by Resolution Partners LLC at their laboratory in Madison Wisconsin, under the direction of PeroxyChem.

Baseline Groundwater Characterization

A plastic cooler containing groundwater (2.0 gallons) and soil (1 gallon) samples packed in ice was received by Resolution Partners LLC at their laboratory in Madison WI on 24 March 2020. The groundwater was labeled as MCM-06 and the soil was labeled as DPZ-2 (7-10). The soil sample was homogenized, and subsamples of the soil and groundwater were subjected to baseline characterization including pH, arsenic, and lithium.

Subsamples of the homogenized groundwater and soil samples were submitted to URSUS Laboratories (Mt. Horeb WI) for determination of the as-received arsenic and lithium concentrations by US EPA Method 6010 (inductively coupled plasma–optical emission spectrometry). The pH of both soil and groundwater were determined in-house by Resolution Partners. The results are presented in Table 1.

Arsenic and lithium concentrations in the MCM-06 groundwater were 220 µg/L and 120 µg/L, respectively. The DPZ-2 (7-10) soil analysis indicated arsenic and lithium concentrations of 4,100 µg/kg and 12,000 µg/kg, respectively. The pH of the MCM-06 groundwater was near neutral at 6.95 while the DPZ-2 (7-10) soil was somewhat more alkaline (7.58).

Following consultation with Resolute, it was agreed to proceed with the bench-scale treatability testing using the as-received groundwater and soil samples (i.e., no spiking of arsenic or lithium was required).

Table 1: Baseline characterization of soil and groundwater samples from the Dike site.

Groundwater & Soil Samples	Description	pH	Analyte (µg/L groundwater, µg/kg soil)	
			Arsenic	Lithium
MCM-06 (Dike site groundwater)	Clear, no odor.	6.95	220	120
DPZ-2 (7-10) (Dike site soil)	Poorly graded sand (SP), fine sand, non-plastic, light brownish grey 10YR6/2, no odor, moist.	7.58	4,100	12,000

Treatability Test Set-up

To determine the influence of the reagents and their dosages on soluble arsenic and lithium concentrations, amber glass microcosms were loaded with 200 mL of MCM-06 groundwater and 20.0 g of DPZ-2 (7-10) soil and then amended with the prescribed mass of each reagent. The microcosms were sealed with Teflon®-lined lids and then incubated for 14 days with daily tumbling. The control contained only groundwater and soil (i.e., no reagent was added). Upon completion of the incubation, samples were filtered through a 0.45 µm glass fiber filter and the filtered groundwater was analyzed for total arsenic.

Treatability Test Results: Phase I

The influence of these treatments on total soluble arsenic and lithium in the filtered groundwater is presented in Table 2.

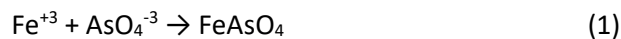
Table 2. Influence of Phase I treatments on soluble As and Li in the MCM-06 groundwater/DPZ-2 (7-10) soil blend.

Each microcosm contained DPZ-2 (7-10) soil (20.0 g) + MCM-06 groundwater (200 mL)				
Identifier	Dosage (% w/w)	pH (s.u.)	Total Arsenic	Total Lithium
			(µg/L groundwater; µg/kg soil)	
As-received Groundwater	-	6.95	220	120
As-received Soil	-	7.58	4,100	12,000
Untreated Control	-	6.45	6.0	100
MetaFix® 1	1.25	6.14	<3.0	130
MetaFix® 2	1.25	6.20	<3.0	120
MetaFix® 3	1.0	8.56	16	49
MetaFix® 4	1.0	7.88	23	74
MetaFix® 5	0.75	5.25	170	140
MetaFix® 6	1.0	6.27	<3.0	130

Arsenic

Substantial reductions in soluble arsenic concentration, as compared to the as received groundwater, and the untreated control, were observed in response to three of the treatments (MetaFix 1, MetaFix 2, and MetaFix 6). In response to these treatments, soluble arsenic was reduced to less than the method detection limit of 3.0 µg/L. Other treatments reduced arsenic as compared to the as-received groundwater but not as compared with the untreated control.

The observed reduction in soluble arsenic in the untreated control was most probably caused by coprecipitation of arsenic with iron as ferric arsenate (Equation 1).



Such coprecipitation may have been promoted by oxic, near neutral pH conditions in the untreated control as (a) native ferrous iron (Fe^{+2}) was oxidized to ferric form (Fe^{+3}) and the uncharged form of arsenic (i.e., As(III), arsenite) was oxidized to the anionic form (As(V), arsenate). If trace amounts of barium were present in the groundwater it is also possible that soluble arsenic in the untreated control may have precipitated as barium arsenate ($\text{Ba}_3\text{As}_2\text{O}_8$). Both ferric arsenate and barium arsenate have aqueous solubilities below 0.3 µg/L.

Lithium

Lithium in the untreated control was 100 µg/L, comparable to that determined for the as-received groundwater (120 µg/L). Only one treatment (MetaFix 3) supported appreciable removal of soluble lithium. In response to this treatment soluble lithium was reduced about 60% as compared to the as-received groundwater (i.e., from 120 µg/L to 49 µg/L). The MetaFix 3 treatment was designed to promote precipitation and coprecipitation of lithium (Li^+) in the form of low solubility minerals with broad pH stability. The observed degree of lithium removal is high enough to serve as proof of concept. We are confident that greater lithium removal efficiency could be achieved with optimization of the treatment conditions including pH, reagent dosage, and a longer reaction period.

None of the treatments was found to be effective for removal of both soluble arsenic and soluble lithium. As a result, a second treatability investigation designed to focus on increasing lithium removal and combining the more effective treatments for arsenic with the most effective treatment for lithium. The set-up used in the second treatability test (Phase II) was the same as that used in the first treatability test (Phase I); however, the incubation period was increased from 14 days to 28 days.

Treatability Test Results: Phase II

The influence of the Phase II treatments on pH, soluble arsenic and soluble lithium in the groundwater/soil blend is presented in Table 3.

Arsenic

Several of the MetaFix treatments produced substantial reductions in soluble arsenic concentration as compared to the as received groundwater. The most effective treatment for arsenic was MetaFix 7 which

reduced soluble As to below the method detection limit of 5.0 µg/L. It should also be noted that arsenic in the untreated control was below the method detection limit of 5.0 µg/L. A discussion of the chemistry most probably involved in removal of soluble arsenic in the control is provided in the section on Phase I test results (above).

Table 3: Influence of Phase II treatments on soluble As and Li in the MCM-06 groundwater/DPZ-2 soil blend.

Each microcosm contained DPZ-2 (7-10) soil (20.0 g) + MCM-06 groundwater (200 mL)				
Identifier	Dosage (% w/w)	Final pH (s.u.)	Total Arsenic	Total Lithium
			(µg/L groundwater; µg/kg soil)	
As-received Groundwater	-	6.95	220	120
As-received Soil	-	7.58	4,100	12,000
Untreated Control	-	5.31	<5.0	48
MetaFix® 1	1.0	8.02	7.0	26
MetaFix® 2	1.5	8.51	7.0	23
MetaFix® 3	2.25	8.86	16	15
MetaFix® 4	1.75	8.03	10	33
MetaFix® 5	1.5	8.05	8.0	30
MetaFix® 6	1.5	7.87	9.0	32
MetaFix® 7	1.25	7.77	<6.0	31
MetaFix® 8	1.75	8.26	9.0	34
MetaFix® 9	1.5	8.11	11	33

Lithium

Lithium in the untreated control was found to be 48 µg/L as compared to 120 µg/L in the as-received groundwater. A relatively stable concentration of lithium in the untreated control is expected, because lithium in its most common and soluble form (Li⁺) is the least reactive of the alkali metals. Relative to the untreated control, all the MetaFix treatments reduced soluble lithium. The most effective treatment for lithium was MetaFix 3 which reduced by almost 70% to 15 µg/L. It should be noted that the MetaFix 7 treatment reduced soluble lithium from 48 µg/L to 31 µg/L and also achieved complete removal of soluble arsenic.

Other Metals

Samples from MetaFix 7 treatment and the untreated control were submitted for determination of a range of other metals and the results are presented in Table 4.

Table 4: Influence of MetaFix® 7 treatment on concentrations of selected metals.

Control or Treatment	Analyte (µg/L)												
	As	Li	Ba	Be	Cd	Co	Cr	Hg	Mo	Pb	Sb	Se	Tl
Control	<5.0	48	250	1.0	3.0	49	<5.0	<50	<10	<30	<50	<30	<10
MetaFix 7	<6.0	31	140	<1.0	<3.0	<10	<5.0	<50	91	<30	<50	<30	<10

Summary and Recommendations

Given the relatively short reaction period (14 days in Phase I and 28 days in Phase II) we believe that the treatability test results should be viewed as conservative and that continued removal of both arsenic and lithium may be expected over time at the Site. Since MetaFix 7 achieved complete removal of soluble arsenic as well as substantial removal of soluble lithium we recommend this treatment for application to groundwater at the Site.

I would be pleased to answer any questions you may have about the treatability testing and this report.

Sincerely,



Alan Seech, Ph.D.

Senior Manager – Technology Applications
PeroxyChem Environmental Solutions

Copy: Dr. Patrick Hicks, PeroxyChem

Arcadis, Inc.

2389 Paces Ferry Road SE

Suite 900

Atlanta, Georgia 30339

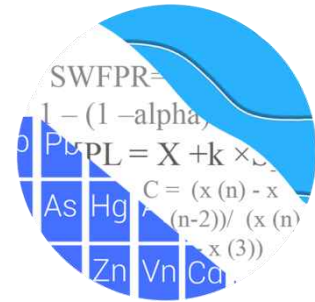
Tel 770 431 8666

Fax 770 435 2666

APPENDIX F

Statistical Analyses

GROUNDWATER STATS CONSULTING



February 23, 2021

Resolute Environmental & Water Resources Consulting
Attn: Mr. Stephen Wilson
1003 Weatherstone Parkway, Ste. 320
Woodstock, GA 30188

Re: Plant McManus Ash Pond (AP)
1st Semi-Annual Statistical Analysis – October 2020 Sampling Event

Dear Mr. Wilson,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the statistical analysis of groundwater data for the Groundwater Monitoring and Corrective Action 1st Semi-Annual October 2020 sample event for Georgia Power Company's Plant McManus Ash Pond. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015), the Georgia Environmental Protection Division Rules for Solid Waste Management Chapter 391-3-4-.10, and follows the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

The groundwater monitoring well network consists of the following:

- **Upgradient Wells:** MCM-01, MCM-02, MCM-11, MCM-15, MCM-16, MCM-18, MCM-19, and MCM-20
- **Downgradient Wells:** MCM-04, MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, and MCM-17

Note that upgradient wells MCM-18, MCM-19, and MCM-20 were installed late in 2019. A minimum of 8 samples have been collected at each well and data from these wells are included in this analysis. For some constituents in these upgradient wells such as arsenic, calcium, lead, and lithium, the concentrations are higher in comparison to other upgradient wells.

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed Kristina Rayner, Groundwater Statistician and Founder of Groundwater Stats Consulting.

The statistical analysis provided in this report was performed according to the background screening conducted by MacStat Consulting in April 2019. Interwell prediction limits, combined with a 1-of-2 resample plan, for Appendix III parameters were recommended as the primary statistical method.

The CCR program monitors the constituents listed below. The terms “parameters” and “constituents” are used interchangeably.

- **Appendix III** (Detection Monitoring) - boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) – antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium

Note that when there are no detections present in downgradient wells for a given constituent, statistical analyses are not required. Summaries of well/constituent pairs with 100% nondetects follow this letter. Additionally, when Appendix IV constituents are not detected during a scheduled Scan event, statistical analyses may not be required during the following semi-annual sample event. During the annual Scan event for 2020, antimony, cadmium, chromium, mercury, molybdenum, and thallium were not detected, and therefore, were not required to be sampled during the October 2020 event. These constituents were included on time series and box plots, but were not included in statistical analyses.

For all constituents, a substitution of the most recent reporting limit is used for nondetect data. In the time series plots, a single reporting limit substitution is used across all wells for a given parameter since the wells are plotted as a group. For calculating prediction limits, the substitution is performed for individual wells and may differ across wells. This generally gives the most conservative limit in each case. However, in some cases the most recent reporting limit increased compared to historical data and, therefore, the lower historical reporting limit was substituted for nondetects to maintain more conservative limits. Due to varying detection limits, the following reporting limits were used for these constituents across all wells:

- Antimony: 0.003 mg/L
- Lithium: 0.03 mg/L
- Molybdenum: 0.01 mg/L
- Thallium: 0.001 mg/L

When concentrations exist higher in downgradient wells relative to observations reported upgradient of the facility, as seen in the majority of the Appendix III parameters, this may be reflective of natural variation or a result of practices at the facility. A separate study and hydrogeological investigation would be required to fully understand the geochemical conditions and expected groundwater quality for the region. That study and assessment is beyond the scope of services provided by Groundwater Stats Consulting.

Time series plots for Appendix III and IV parameters at all wells are provided for the purpose of screening data at these wells (Figure A). Additionally, a separate section of box plots is included for all constituents at upgradient and downgradient wells (Figure B). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells. Values in background which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the graphs. A summary of flagged outliers follows this report (Figure C).

No values were previously flagged as outliers during the April 2019 screening; however, the following non-detect values were flagged due to elevated reporting limits: <0.025 mg/L for lead in upgradient well MCM-19; and <0.1 mg/L, <0.15 mg/L and <0.3 mg/L for lithium in upgradient well MCM-18. Additionally, a high value for combined radium 226 + 228 in upgradient well MCM-20 was flagged as an outlier. These steps result in construction of background limits that are conservative from a regulatory perspective.

Based on the 2019 screening, data at all wells for constituents detected in downgradient wells were evaluated for the following: 1) outliers; 2) trends; 3) most appropriate statistical method based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. Power curves were provided with the 2019 screening to demonstrate that the selected statistical methods for the parameters listed above comply with the USEPA Unified Guidance and the Georgia Environmental Protection Division Rules for Solid Waste Management Chapter 391-3-4-.10. The EPA suggests the selected statistical method should provide at least 55% power at 3 standard deviations or at least 80% power at 4 standard deviations.

Summary of Statistical Methods:

Based on the evaluation for state and federal regulatory requirements, the following methods were selected for Appendix III and IV constituents:

- Appendix III: Interwell prediction limits, combined with a 1-of-2 resample plan for boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- Appendix IV: Confidence intervals on downgradient well data compared against Ground Water Protection Standards (GWPS) for each Appendix IV constituent

The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. Parametric prediction limits (or tolerance limits or confidence intervals as applicable) are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are nondetects, a nonparametric test is utilized. While the false positive rate associated with the parametric limits is based on an annual 10% (5% per semi-annual event) as recommended by the EPA Unified Guidance (2009), the false positive rate associated with the nonparametric limits is dependent upon the available background sample size, number of future comparisons, and verification resample plan. The following approaches are used for handling nondetects (USEPA, 2009):

- No statistical analyses are required on wells and analytes containing 100% nondetects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% nondetects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for nondetects is the practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% nondetects, the Kaplan-Meier nondetect 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 reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% nondetects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the interwell case, prediction limits are updated with upgradient well data during each event after careful screening for any new outliers. While this was not required for this report, in some cases, deselecting the earlier portion

of data may be necessary prior to construction of limits so that resulting statistical limits are conservative (lower) from a regulatory perspective and capable of rapidly detecting changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Statistical Analysis of Appendix III Parameters – October 2020

All Appendix III parameters were analyzed using interwell prediction limits. Background (upgradient) well data were re-assessed for potential outliers during this analysis. Values in background which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the graphs. No new values were flagged for Appendix III parameters in upgradient wells and a summary of flagged outliers follows this report (Figure C).

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed using all historical upgradient well data through October 2020 (Figure D). Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are statistically significant increases (SSIs).

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When a resample confirms the initial exceedance, a statistically significant increase is identified and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If the resample falls within the statistical limit, the initial exceedance is considered to be a false positive result and, therefore, no exceedance is noted and no further action is necessary. If no resample is collected, the original result is considered a confirmed exceedance. A summary table of the interwell prediction limits follows this letter and includes a list of exceedances. Exceedances were identified for the following well/constituent pairs:

- Boron: MCM-06, MCM-07, and MCM-17
- Calcium: MCM-06 and MCM-07
- pH: MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, and MCM-17
- TDS: MCM-06, MCM-07, and MCM-14

When prediction limit exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable (Figure E), Upgradient well data are included in the trend analyses for all parameters found to exceed their prediction

limit in downgradient wells to identify whether similar patterns exist upgradient of the site. Upgradient trends are an indication of natural variability in groundwater quality unrelated to practices at the site. A summary of trend test results follows this letter including a list of statistically significant trends. Statistically significant trends were identified for the following well/constituent pairs:

Increasing:

- Boron: MCM-06
- Calcium: MCM-07
- TDS: MCM-06, MCM-07, and MCM-14

Decreasing:

- Calcium: MCM-18 (upgradient)
- pH: MCM-11 (upgradient), MCM-05, MCM-06, MCM-12, and MCM-14
- TDS: MCM-18 (upgradient)

Statistical Analysis of Appendix IV Parameters – October 2020

For Appendix IV parameters, confidence intervals for each downgradient well/constituent pair were compared against corresponding Groundwater Protection Standards (GWPS). GWPS were developed as described below. Well/constituent pairs that have 100% nondetects do not require analysis. Data from all wells for Appendix IV parameters are reassessed for outliers during each analysis. A high value for fluoride in downgradient well MCM-06 was flagged and a summary of flagged outliers follows this report (Figure C).

First, interwell tolerance limits were used to calculate site-specific background limits from all available pooled upgradient well data through October 2020 for Appendix IV constituents (Figure F). Parametric tolerance limits are used when data follow a normal or transformed-normal distribution. When data contained greater than 50% nondetects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were used. The background limits were then used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia EPD Rule 391-3-4-.10(6)(a).

As described in 40 CFR §257.95(h) (1-3), the GWPS is:

- The maximum contaminant level (MCL) established under §141.62 and §141.66 of this title

- Where an MCL has not been established for a constituent, CCR-rule specified level have been specified for cobalt (0.006 mg/L), lead (0.015 mg/L), lithium (0.040 mg/L), and molybdenum (0.100 mg/L)
- The respective background level for a constituent when the background level is higher than the MCL or Federal CCR Rule identified GWPS

On July 30, 2018, USEPA revised the Federal CCR rule updating GWPS for cobalt, lead, lithium, and molybdenum as described above in 40 CFR §257.95(h)(2). Georgia EPD has not incorporated the updated GWPS into the current Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, for sites regulated under Georgia EPD Rules, the GWPS is:

- The MCL or
- The background concentration when an MCL is not established or when the background concentration is higher than the MCL.

Following Georgia EPD Rule requirements and the Federal CCR requirements, Federal and State GWPS were established for statistical comparison of Appendix IV constituents for the October 2020 sample event (Figure G).

To complete the statistical comparison of downgradient well data to GWPS, confidence intervals were constructed for the Appendix IV constituents in each downgradient well. The Sanitas software was used to calculate both the tolerance limits and the confidence intervals. For Federal requirements, confidence intervals were compared to the GWPS prepared according to the CCR Rule (Figure H). For the State requirements, confidence intervals were compared to the GWPS established using the Georgia EPD Rules 391-3-4-.10(6)(a) (Figure I). The background limit for combined radium 226 + 228 is considerably higher than the MCL due to high concentrations in upgradient wells, such as those in upgradient well MCM-20. Additionally, TDS appears to be highly variable across the site, particularly upgradient of the site. These concentrations are assumed to represent natural groundwater quality since the reported measurements are in upgradient wells; however, this determination is beyond the scope of this analysis.

Only when the entire confidence interval is above a GWPS is the downgradient well/constituent pair considered to exceed its respective standard. If there is an exceedance of the GWPS, a statistically significant level (SSL) exceedance is identified. Summaries of both the Federal and State confidence intervals follow this letter and exceedances were identified for the following well/constituent pairs:

Federal and State:

- Arsenic: MCM-06
- Lithium: MCM-06

Addendum Report – January 2021

Additional data were collected in January 2021 for the following constituents at well MCM-05: arsenic, barium, beryllium, boron, calcium, chloride, cobalt, combined radium 226 + 228, fluoride, lead, lithium, pH, selenium, sulfate, and TDS. Time series and box plots were generated for all sampled constituents (Figures J and K, respectively). Interwell prediction limits were constructed for Appendix III parameters, using pooled upgradient well data through October 2020, to compare the January 2021 sample at well MCM-05 (Figure L). An exceedance was identified for pH in this well and complete graphical results of the interwell prediction limits follow this report. A Sen's Slope/Mann-Kendall trend test was used to evaluate the pH exceedance (Figure M). A statistically significant decreasing trend was identified for pH at well MCM-05 and complete graphical results of the trend tests follow this letter.

For arsenic, barium, beryllium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, and selenium, confidence intervals were constructed for well MW-05 to compare all data at this well through January 2021 to the established Federal and State GWPS (Figure G). No exceedances were identified for either federal or state confidence intervals (Figures N and O, respectively).

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Plant McManus Ash Pond. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,



Andrew T. Collins
Project Manager



Kristina L. Rayner
Groundwater Statistician

100% Non-Detects

Analysis Run 12/10/2020 1:11 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Antimony (mg/L)
MCM-04, MCM-05, MCM-07, MCM-12

Beryllium (mg/L)
MCM-06

Cadmium (mg/L)
MCM-04, MCM-05, MCM-06, MCM-07, MCM-12, MCM-14

Lead (mg/L)
MCM-04

Mercury (mg/L)
MCM-06, MCM-12

Molybdenum (mg/L)
MCM-04, MCM-07, MCM-12, MCM-14

Thallium (mg/L)
MCM-04, MCM-05, MCM-07, MCM-12, MCM-14

Appendix III - Interwell Prediction Limits - Significant Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:32 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MCM-06	1.3	n/a	10/14/2020	1.5	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-07	1.3	n/a	10/14/2020	1.8	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-17	1.3	n/a	10/13/2020	1.8	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-06	169	n/a	10/14/2020	245	Yes	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-07	169	n/a	10/14/2020	207	Yes	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-05	5.77	3.72	10/15/2020	6.53	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-06	5.77	3.72	10/14/2020	6.93	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-07	5.77	3.72	10/14/2020	6.32	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-12	5.77	3.72	10/12/2020	6.35	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-14	5.77	3.72	10/13/2020	6.56	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-17	5.77	3.72	10/13/2020	6.34	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-06	14600	n/a	10/14/2020	15200	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-07	14600	n/a	10/14/2020	18400	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-14	14600	n/a	10/13/2020	15600	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2

Appendix III - Interwell Prediction Limits - All Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:32 PM

Constituent	Well	Upper Lim	Lower Lim	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MCM-04	1.3	n/a	10/13/2020	0.25ND	No	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-05	1.3	n/a	10/15/2020	0.61	No	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-06	1.3	n/a	10/14/2020	1.5	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-07	1.3	n/a	10/14/2020	1.8	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-12	1.3	n/a	10/12/2020	1.3	No	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-14	1.3	n/a	10/13/2020	1.1	No	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-17	1.3	n/a	10/13/2020	1.8	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-04	169	n/a	10/13/2020	12.5	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-05	169	n/a	10/15/2020	69.1	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-06	169	n/a	10/14/2020	245	Yes	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-07	169	n/a	10/14/2020	207	Yes	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-12	169	n/a	10/12/2020	6.1	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-14	169	n/a	10/13/2020	40.9	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-17	169	n/a	10/13/2020	86.4	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-04	8130	n/a	10/13/2020	54.4	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-05	8130	n/a	10/15/2020	1660	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-06	8130	n/a	10/14/2020	6630	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-07	8130	n/a	10/14/2020	7910	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-12	8130	n/a	10/12/2020	552	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-14	8130	n/a	10/13/2020	6230	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-17	8130	n/a	10/13/2020	3980	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-04	1.5	n/a	10/13/2020	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-05	1.5	n/a	10/15/2020	0.22	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-06	1.5	n/a	10/14/2020	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-07	1.5	n/a	10/14/2020	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-12	1.5	n/a	10/12/2020	1.2	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-14	1.5	n/a	10/13/2020	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-17	1.5	n/a	10/13/2020	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-04	5.77	3.72	10/13/2020	5.25	No	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-05	5.77	3.72	10/15/2020	6.53	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-06	5.77	3.72	10/14/2020	6.93	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-07	5.77	3.72	10/14/2020	6.32	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-12	5.77	3.72	10/12/2020	6.35	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-14	5.77	3.72	10/13/2020	6.56	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-17	5.77	3.72	10/13/2020	6.34	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-04	1140	n/a	10/13/2020	92.3	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-05	1140	n/a	10/15/2020	147	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-06	1140	n/a	10/14/2020	510	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-07	1140	n/a	10/14/2020	904	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-12	1140	n/a	10/12/2020	0.5ND	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-14	1140	n/a	10/13/2020	695	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-17	1140	n/a	10/13/2020	378	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-04	14600	n/a	10/13/2020	12.5ND	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-05	14600	n/a	10/15/2020	5100	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-06	14600	n/a	10/14/2020	15200	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-07	14600	n/a	10/14/2020	18400	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-12	14600	n/a	10/12/2020	1560	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-14	14600	n/a	10/13/2020	15600	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-17	14600	n/a	10/13/2020	8750	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2

Appendix III Trend Tests - Prediction Limit Exceedances - Significant Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:34 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	MCM-06	0.1871	49	43	Yes	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-07	48.63	59	43	Yes	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-18 (bg)	-27.95	-35	-30	Yes	10	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-05	-0.0923	-62	-48	Yes	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-06	-0.113	-51	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-11 (bg)	-0.08197	-54	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-12	-0.07539	-44	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-14	-0.1382	-72	-48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-06	4156	52	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-07	3571	68	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-14	4524	72	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-18 (bg)	-2315	-37	-30	Yes	10	0	n/a	n/a	0.01	NP

Appendix III Trend Tests - Prediction Limit Exceedances - All Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:34 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	MCM-01 (bg)	0.002021	9	38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-02 (bg)	-0.02869	-20	-38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-06	0.1871	49	43	Yes	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-07	0.1459	43	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-11 (bg)	0.001433	5	38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-15 (bg)	0.007692	21	38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-16 (bg)	-0.0109	-22	-38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-17	-0.09555	-21	-43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-18 (bg)	0	-6	-30	No	10	0	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-19 (bg)	0	0	30	No	10	0	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-20 (bg)	0.1848	3	30	No	10	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-01 (bg)	0.3136	4	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-02 (bg)	-0.2937	-23	-38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-06	59.02	42	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-07	48.63	59	43	Yes	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-11 (bg)	-4.667	-38	-38	No	12	8.333	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-15 (bg)	1.376	15	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-16 (bg)	0	2	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-18 (bg)	-27.95	-35	-30	Yes	10	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-19 (bg)	-36.5	-18	-30	No	10	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-20 (bg)	-63.32	-25	-30	No	10	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-01 (bg)	0.05473	25	48	No	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-02 (bg)	0.02274	25	48	No	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-05	-0.0923	-62	-48	Yes	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-06	-0.113	-51	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-07	-0.08659	-48	-48	No	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-11 (bg)	-0.08197	-54	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-12	-0.07539	-44	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-14	-0.1382	-72	-48	Yes	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-15 (bg)	-0.08406	-20	-43	No	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-16 (bg)	0.005464	2	43	No	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-17	-0.1427	-42	-48	No	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-18 (bg)	0.1725	20	25	No	9	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-19 (bg)	-0.1816	-16	-25	No	9	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-20 (bg)	-0.1225	-15	-25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-01 (bg)	-4.393	-8	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-02 (bg)	-4.101	-18	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-06	4156	52	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-07	3571	68	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-11 (bg)	-43.29	-34	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-14	4524	72	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-15 (bg)	15.28	25	38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-16 (bg)	-0.6384	-2	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-18 (bg)	-2315	-37	-30	Yes	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-19 (bg)	0	0	30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-20 (bg)	-1278	-4	-30	No	10	0	n/a	n/a	0.01	NP

Upper Tolerance Limit Summary Table

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 1:06 PM

Constituent	Upper Lim.	Lower Lim.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	0.003	n/a	n/a	83	n/a	n/a	93.98	n/a	n/a	0.01416	NP Inter(NDs)
Arsenic (mg/L)	0.031	n/a	n/a	94	n/a	n/a	14.89	n/a	n/a	0.008054	NP Inter(normality)
Barium (mg/L)	0.22	n/a	n/a	91	n/a	n/a	0	n/a	n/a	0.009394	NP Inter(normality)
Beryllium (mg/L)	0.021	n/a	n/a	90	n/a	n/a	22.22	n/a	n/a	0.009888	NP Inter(normality)
Cadmium (mg/L)	0.0025	n/a	n/a	77	n/a	n/a	92.21	n/a	n/a	0.01926	NP Inter(NDs)
Chromium (mg/L)	0.011	n/a	n/a	83	n/a	n/a	46.99	n/a	n/a	0.01416	NP Inter(normality)
Cobalt (mg/L)	0.036	n/a	n/a	90	n/a	n/a	74.44	n/a	n/a	0.009888	NP Inter(NDs)
Combined Radium 226 + 228 (pCi/L)	55.8	n/a	n/a	89	n/a	n/a	0	n/a	n/a	0.01041	NP Inter(normality)
Fluoride (mg/L)	1.5	n/a	n/a	95	n/a	n/a	40	n/a	n/a	0.007651	NP Inter(normality)
Lead (mg/L)	0.005	n/a	n/a	90	n/a	n/a	78.89	n/a	n/a	0.009888	NP Inter(NDs)
Lithium (mg/L)	0.03	n/a	n/a	87	n/a	n/a	52.87	n/a	n/a	0.01153	NP Inter(NDs)
Mercury (mg/L)	0.0007	n/a	n/a	77	n/a	n/a	93.51	n/a	n/a	0.01926	NP Inter(NDs)
Molybdenum (mg/L)	0.01	n/a	n/a	82	n/a	n/a	93.9	n/a	n/a	0.01491	NP Inter(NDs)
Selenium (mg/L)	0.15	n/a	n/a	91	n/a	n/a	59.34	n/a	n/a	0.009394	NP Inter(NDs)
Thallium (mg/L)	0.001	n/a	n/a	82	n/a	n/a	91.46	n/a	n/a	0.01491	NP Inter(NDs)

MCMANUS ASH POND GWPS					
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006	0.006
Arsenic, Total (mg/L)	0.01		0.031	0.031	0.031
Barium, Total (mg/L)	2		0.22	2	2
Beryllium, Total (mg/L)	0.004		0.021	0.021	0.021
Cadmium, Total (mg/L)	0.005		0.0025	0.005	0.005
Chromium, Total (mg/L)	0.1		0.011	0.1	0.1
Cobalt, Total (mg/L)		0.006	0.036	0.036	0.036
Combined Radium, Total (pCi/L)	5		55.8	55.8	55.8
Fluoride, Total (mg/L)	4		1.5	4	4
Lead, Total (mg/L)		0.015	0.005	0.015	0.005
Lithium, Total (mg/L)		0.04	0.03	0.04	0.03
Mercury, Total (mg/L)	0.002		0.0007	0.002	0.002
Molybdenum, Total (mg/L)		0.1	0.01	0.1	0.01
Selenium, Total (mg/L)	0.05		0.15	0.15	0.15
Thallium, Total (mg/L)	0.002		0.001	0.002	0.002

**Grey cell indicates Background Limit is higher than MCL or CCR-Rule Specified Level*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

Federal Confidence Intervals - Significant Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:38 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	MCM-06	0.4372	0.2568	0.031	Yes 16	0.347	0.1386	0	None	No	0.01	Param.
Lithium (mg/L)	MCM-06	0.1033	0.05003	0.04	Yes 13	0.07665	0.03579	0	None	No	0.01	Param.

Federal Confidence Intervals - All Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:38 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MCM-04	0.008885	0.00297	0.031	No 13	0.006192	0.004404	0	None	sqrt(x)	0.01	Param.
Arsenic (mg/L)	MCM-05	0.01701	0.003101	0.031	No 14	0.01329	0.01351	14.29	None	ln(x)	0.01	Param.
Arsenic (mg/L)	MCM-06	0.4372	0.2568	0.031	Yes 16	0.347	0.1386	0	None	No	0.01	Param.
Arsenic (mg/L)	MCM-07	0.02247	0.01077	0.031	No 15	0.01662	0.008628	0	None	No	0.01	Param.
Arsenic (mg/L)	MCM-12	0.0057	0.0007	0.031	No 12	0.003133	0.002126	41.67	None	No	0.01	NP (normality)
Arsenic (mg/L)	MCM-14	0.003992	0.000891	0.031	No 12	0.003842	0.002106	41.67	Kaplan-Meier	No	0.01	Param.
Arsenic (mg/L)	MCM-17	0.003985	0.001615	0.031	No 13	0.003569	0.001806	30.77	Kaplan-Meier	No	0.01	Param.
Barium (mg/L)	MCM-04	0.1122	0.02821	2	No 12	0.0765	0.08077	0	None	x^(1/3)	0.01	Param.
Barium (mg/L)	MCM-05	0.0393	0.0085	2	No 12	0.05243	0.1256	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-06	0.16	0.0508	2	No 13	0.09681	0.04945	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-07	0.35	0.0865	2	No 12	0.1585	0.1054	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-12	0.1313	0.1115	2	No 12	0.1214	0.01265	0	None	No	0.01	Param.
Barium (mg/L)	MCM-14	0.1172	0.04197	2	No 12	0.07959	0.04795	0	None	No	0.01	Param.
Barium (mg/L)	MCM-17	0.1207	0.05127	2	No 12	0.08599	0.04425	0	None	No	0.01	Param.
Beryllium (mg/L)	MCM-04	0.003	0.0002	0.021	No 12	0.0009842	0.001226	25	None	No	0.01	NP (normality)
Beryllium (mg/L)	MCM-05	0.003	0.000054	0.021	No 12	0.002755	0.0008504	91.67	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-07	0.003	0.000078	0.021	No 12	0.002273	0.001316	75	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-12	0.001046	0.0004115	0.021	No 12	0.0008067	0.0007217	8.333	None	ln(x)	0.01	Param.
Beryllium (mg/L)	MCM-14	0.003	0.000097	0.021	No 12	0.001796	0.001489	58.33	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-17	0.003	0.00018	0.021	No 12	0.0009367	0.001246	25	None	No	0.01	NP (normality)
Cobalt (mg/L)	MCM-04	0.0085	0.0048	0.036	No 13	0.005808	0.001585	53.85	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-05	0.005	0.0019	0.036	No 12	0.004742	0.0008949	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-06	0.005	0.0009	0.036	No 13	0.004323	0.001657	84.62	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-07	0.005	0.0011	0.036	No 12	0.004675	0.001126	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-12	0.005	0.0005	0.036	No 12	0.003147	0.00229	58.33	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-14	0.005	0.0006	0.036	No 12	0.004633	0.00127	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-17	0.005	0.00052	0.036	No 12	0.003885	0.002018	75	None	No	0.01	NP (NDs)
Combined Radium 226 + 228 (pCi/L)	MCM-04	6.51	3.244	55.8	No 12	4.946	2.295	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-05	2.292	1.408	55.8	No 12	1.85	0.5634	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-06	7.31	2.299	55.8	No 12	4.977	3.404	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-07	9.49	5.019	55.8	No 13	7.255	3.006	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-12	3.221	2.079	55.8	No 12	2.65	0.7272	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-14	7.357	2.466	55.8	No 13	4.911	3.289	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-17	6.245	2.31	55.8	No 13	4.508	2.942	0	None	x^(1/3)	0.01	Param.
Fluoride (mg/L)	MCM-04	0.1852	0.05378	4	No 13	0.1472	0.1369	46.15	Kaplan-Meier	ln(x)	0.01	Param.
Fluoride (mg/L)	MCM-05	0.569	0.3167	4	No 14	0.4629	0.2203	0	None	ln(x)	0.01	Param.
Fluoride (mg/L)	MCM-06	0.3095	0.0941	4	No 13	0.2114	0.156	38.46	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	MCM-07	0.54	0.1	4	No 14	0.319	0.3039	35.71	None	No	0.01	NP (normality)
Fluoride (mg/L)	MCM-12	1.301	0.9339	4	No 13	1.085	0.3385	7.692	None	x^2	0.01	Param.
Fluoride (mg/L)	MCM-14	0.5	0.084	4	No 14	0.2503	0.208	50	None	No	0.01	NP (normality)
Fluoride (mg/L)	MCM-17	1.3	0.1	4	No 14	0.6024	0.5186	28.57	None	No	0.01	NP (normality)
Lead (mg/L)	MCM-05	0.005	0.0002	0.015	No 12	0.0046	0.001386	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-06	0.005	0.00012	0.015	No 13	0.004625	0.001353	92.31	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-07	0.005	0.0001	0.015	No 12	0.003782	0.002204	75	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-12	0.005	0.00009	0.015	No 12	0.003372	0.002405	66.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-14	0.005	0.00008	0.015	No 12	0.00459	0.00142	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-17	0.005	0.0002	0.015	No 12	0.003412	0.002345	66.67	None	No	0.01	NP (NDs)
Lithium (mg/L)	MCM-04	0.015	0.0013	0.04	No 12	0.0074	0.00674	41.67	None	No	0.01	NP (normality)
Lithium (mg/L)	MCM-05	0.0376	0.021	0.04	No 12	0.07259	0.1568	0	None	No	0.01	NP (normality)
Lithium (mg/L)	MCM-06	0.1033	0.05003	0.04	Yes 13	0.07665	0.03579	0	None	No	0.01	Param.
Lithium (mg/L)	MCM-07	0.06471	0.01819	0.04	No 13	0.04518	0.0395	0	None	x^(1/3)	0.01	Param.
Lithium (mg/L)	MCM-12	0.01281	0.01079	0.04	No 12	0.0118	0.001281	8.333	None	No	0.01	Param.
Lithium (mg/L)	MCM-14	0.05107	0.02921	0.04	No 13	0.03529	0.01949	7.692	None	x^3	0.01	Param.
Lithium (mg/L)	MCM-17	0.02511	0.01348	0.04	No 12	0.01929	0.00741	0	None	No	0.01	Param.
Selenium (mg/L)	MCM-04	0.01	0.0025	0.15	No 12	0.009375	0.002165	91.67	None	No	0.01	NP (NDs)
Selenium (mg/L)	MCM-05	0.01	0.002	0.15	No 12	0.007425	0.003809	66.67	None	No	0.01	NP (NDs)
Selenium (mg/L)	MCM-06	0.01	0.0015	0.15	No 13	0.006077	0.003738	38.46	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-07	0.01	0.0021	0.15	No 12	0.005983	0.003667	41.67	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-12	0.01	0.0017	0.15	No 12	0.005267	0.004188	41.67	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-14	0.01	0.0018	0.15	No 12	0.006358	0.003947	50	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-17	0.01	0.0018	0.15	No 12	0.006342	0.003841	41.67	None	No	0.01	NP (normality)

State Confidence Intervals - Significant Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:36 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	MCM-06	0.4372	0.2568	0.031	Yes 16	0.347	0.1386	0	None	No	0.01	Param.
Lithium (mg/L)	MCM-06	0.1033	0.05003	0.03	Yes 13	0.07665	0.03579	0	None	No	0.01	Param.

State Confidence Intervals - All Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:36 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MCM-04	0.008885	0.00297	0.031	No 13	0.006192	0.004404	0	None	sqrt(x)	0.01	Param.
Arsenic (mg/L)	MCM-05	0.01701	0.003101	0.031	No 14	0.01329	0.01351	14.29	None	ln(x)	0.01	Param.
Arsenic (mg/L)	MCM-06	0.4372	0.2568	0.031	Yes 16	0.347	0.1386	0	None	No	0.01	Param.
Arsenic (mg/L)	MCM-07	0.02247	0.01077	0.031	No 15	0.01662	0.008628	0	None	No	0.01	Param.
Arsenic (mg/L)	MCM-12	0.0057	0.0007	0.031	No 12	0.003133	0.002126	41.67	None	No	0.01	NP (normality)
Arsenic (mg/L)	MCM-14	0.003992	0.000891	0.031	No 12	0.003842	0.002106	41.67	Kaplan-Meier	No	0.01	Param.
Arsenic (mg/L)	MCM-17	0.003985	0.001615	0.031	No 13	0.003569	0.001806	30.77	Kaplan-Meier	No	0.01	Param.
Barium (mg/L)	MCM-04	0.1122	0.02821	2	No 12	0.0765	0.08077	0	None	x^(1/3)	0.01	Param.
Barium (mg/L)	MCM-05	0.0393	0.0085	2	No 12	0.05243	0.1256	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-06	0.16	0.0508	2	No 13	0.09681	0.04945	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-07	0.35	0.0865	2	No 12	0.1585	0.1054	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-12	0.1313	0.1115	2	No 12	0.1214	0.01265	0	None	No	0.01	Param.
Barium (mg/L)	MCM-14	0.1172	0.04197	2	No 12	0.07959	0.04795	0	None	No	0.01	Param.
Barium (mg/L)	MCM-17	0.1207	0.05127	2	No 12	0.08599	0.04425	0	None	No	0.01	Param.
Beryllium (mg/L)	MCM-04	0.003	0.0002	0.021	No 12	0.0009842	0.001226	25	None	No	0.01	NP (normality)
Beryllium (mg/L)	MCM-05	0.003	0.000054	0.021	No 12	0.002755	0.0008504	91.67	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-07	0.003	0.000078	0.021	No 12	0.002273	0.001316	75	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-12	0.001046	0.0004115	0.021	No 12	0.0008067	0.0007217	8.333	None	ln(x)	0.01	Param.
Beryllium (mg/L)	MCM-14	0.003	0.000097	0.021	No 12	0.001796	0.001489	58.33	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-17	0.003	0.00018	0.021	No 12	0.0009367	0.001246	25	None	No	0.01	NP (normality)
Cobalt (mg/L)	MCM-04	0.0085	0.0048	0.036	No 13	0.005808	0.001585	53.85	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-05	0.005	0.0019	0.036	No 12	0.004742	0.0008949	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-06	0.005	0.0009	0.036	No 13	0.004323	0.001657	84.62	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-07	0.005	0.0011	0.036	No 12	0.004675	0.001126	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-12	0.005	0.0005	0.036	No 12	0.003147	0.00229	58.33	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-14	0.005	0.0006	0.036	No 12	0.004633	0.00127	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-17	0.005	0.00052	0.036	No 12	0.003885	0.002018	75	None	No	0.01	NP (NDs)
Combined Radium 226 + 228 (pCi/L)	MCM-04	6.51	3.244	55.8	No 12	4.946	2.295	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-05	2.292	1.408	55.8	No 12	1.85	0.5634	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-06	7.31	2.299	55.8	No 12	4.977	3.404	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-07	9.49	5.019	55.8	No 13	7.255	3.006	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-12	3.221	2.079	55.8	No 12	2.65	0.7272	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-14	7.357	2.466	55.8	No 13	4.911	3.289	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-17	6.245	2.31	55.8	No 13	4.508	2.942	0	None	x^(1/3)	0.01	Param.
Fluoride (mg/L)	MCM-04	0.1852	0.05378	4	No 13	0.1472	0.1369	46.15	Kaplan-Meier	ln(x)	0.01	Param.
Fluoride (mg/L)	MCM-05	0.569	0.3167	4	No 14	0.4629	0.2203	0	None	ln(x)	0.01	Param.
Fluoride (mg/L)	MCM-06	0.3095	0.0941	4	No 13	0.2114	0.156	38.46	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	MCM-07	0.54	0.1	4	No 14	0.319	0.3039	35.71	None	No	0.01	NP (normality)
Fluoride (mg/L)	MCM-12	1.301	0.9339	4	No 13	1.085	0.3385	7.692	None	x^2	0.01	Param.
Fluoride (mg/L)	MCM-14	0.5	0.084	4	No 14	0.2503	0.208	50	None	No	0.01	NP (normality)
Fluoride (mg/L)	MCM-17	1.3	0.1	4	No 14	0.6024	0.5186	28.57	None	No	0.01	NP (normality)
Lead (mg/L)	MCM-05	0.005	0.0002	0.005	No 12	0.0046	0.001386	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-06	0.005	0.00012	0.005	No 13	0.004625	0.001353	92.31	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-07	0.005	0.0001	0.005	No 12	0.003782	0.002204	75	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-12	0.005	0.00009	0.005	No 12	0.003372	0.002405	66.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-14	0.005	0.00008	0.005	No 12	0.00459	0.00142	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-17	0.005	0.0002	0.005	No 12	0.003412	0.002345	66.67	None	No	0.01	NP (NDs)
Lithium (mg/L)	MCM-04	0.015	0.0013	0.03	No 12	0.0074	0.00674	41.67	None	No	0.01	NP (normality)
Lithium (mg/L)	MCM-05	0.0376	0.021	0.03	No 12	0.07259	0.1568	0	None	No	0.01	NP (normality)
Lithium (mg/L)	MCM-06	0.1033	0.05003	0.03	Yes 13	0.07665	0.03579	0	None	No	0.01	Param.
Lithium (mg/L)	MCM-07	0.06471	0.01819	0.03	No 13	0.04518	0.0395	0	None	x^(1/3)	0.01	Param.
Lithium (mg/L)	MCM-12	0.01281	0.01079	0.03	No 12	0.0118	0.001281	8.333	None	No	0.01	Param.
Lithium (mg/L)	MCM-14	0.05107	0.02921	0.03	No 13	0.03529	0.01949	7.692	None	x^3	0.01	Param.
Lithium (mg/L)	MCM-17	0.02511	0.01348	0.03	No 12	0.01929	0.00741	0	None	No	0.01	Param.
Selenium (mg/L)	MCM-04	0.01	0.0025	0.15	No 12	0.009375	0.002165	91.67	None	No	0.01	NP (NDs)
Selenium (mg/L)	MCM-05	0.01	0.002	0.15	No 12	0.007425	0.003809	66.67	None	No	0.01	NP (NDs)
Selenium (mg/L)	MCM-06	0.01	0.0015	0.15	No 13	0.006077	0.003738	38.46	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-07	0.01	0.0021	0.15	No 12	0.005983	0.003667	41.67	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-12	0.01	0.0017	0.15	No 12	0.005267	0.004188	41.67	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-14	0.01	0.0018	0.15	No 12	0.006358	0.003947	50	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-17	0.01	0.0018	0.15	No 12	0.006342	0.003841	41.67	None	No	0.01	NP (normality)

Intrawell Prediction Limits - MCM-05 Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 2/16/2021, 3:41 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg.N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MCM-05	1.3	n/a	1/4/2021	0.98	No	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-05	169	n/a	1/4/2021	104	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-05	8130	n/a	1/4/2021	2460	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-05	1.5	n/a	1/4/2021	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-05	5.77	3.72	1/4/2021	6.66	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-05	1140	n/a	1/4/2021	262	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-05	14600	n/a	1/4/2021	7750	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2

Appendix III Trend Tests - Addendum Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 2/16/2021, 3:59 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
pH (S.U.)	MCM-05	-0.08008	-62	-53	Yes	15	0	n/a	n/a	0.01	NP

Confidence Intervals - Addendum Federal Results (No Significant)

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 2/16/2021, 4:06 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDsND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MCM-05	0.0335	0.0019	0.031	No 15	0.01255	0.01336	13.33 None	No	0.01	NP (normality)
Barium (mg/L)	MCM-05	0.051	0.0085	2	No 13	0.05232	0.1202	0 None	No	0.01	NP (normality)
Beryllium (mg/L)	MCM-05	0.003	0.000054	0.021	No 13	0.002773	0.0008171	92.31 None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-05	0.005	0.0019	0.036	No 13	0.004762	0.0008598	92.31 None	No	0.01	NP (NDs)
Combined Radium 226 + 228 (pCi/L)	MCM-05	2.84	1.334	55.8	No 13	2.157	1.231	0 None	x^(1/3)	0.01	Param.
Fluoride (mg/L)	MCM-05	0.5768	0.2622	4	No 15	0.4353	0.2376	6.667 None	sqrt(x)	0.01	Param.
Lead (mg/L)	MCM-05	0.005	0.0002	0.015	No 13	0.004631	0.001331	92.31 None	No	0.01	NP (NDs)
Lithium (mg/L)	MCM-05	0.043	0.021	0.04	No 13	0.07032	0.1504	0 None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-05	0.01	0.0023	0.15	No 13	0.007623	0.003716	69.23 None	No	0.01	NP (NDs)

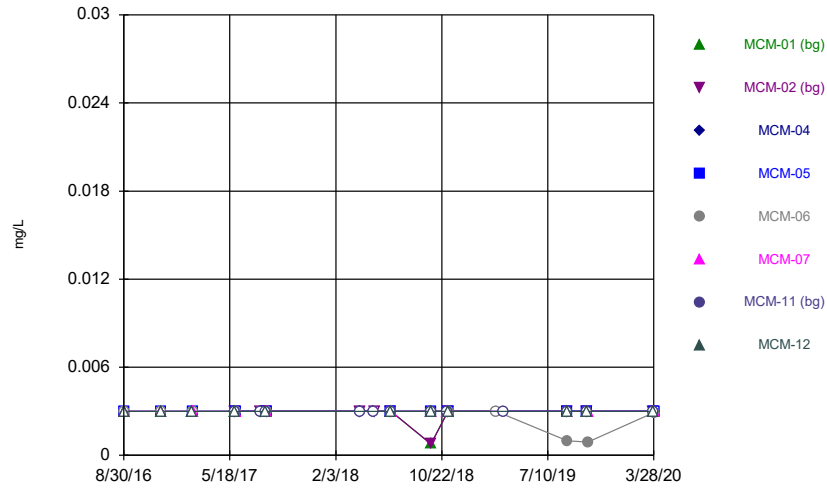
Confidence Intervals - Addendum State Results (No Significant)

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 2/16/2021, 4:14 PM

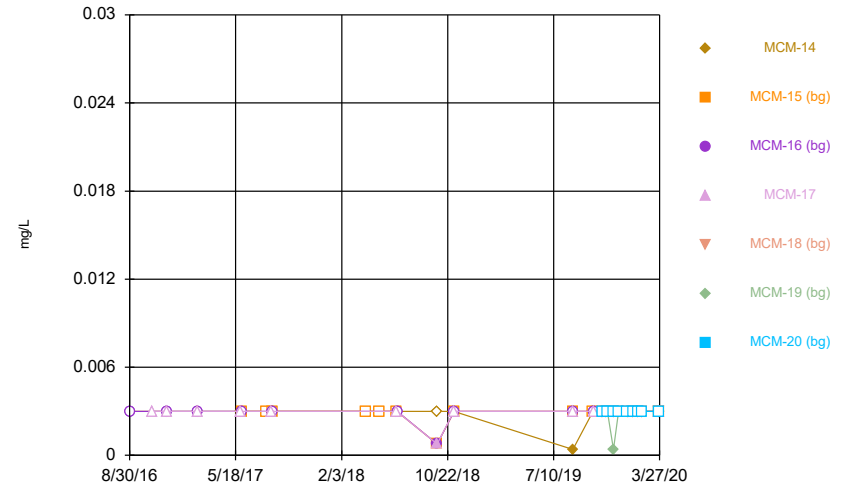
Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDsND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MCM-05	0.0335	0.0019	0.031	No 15	0.01255	0.01336	13.33 None	No	0.01	NP (normality)
Barium (mg/L)	MCM-05	0.051	0.0085	2	No 13	0.05232	0.1202	0 None	No	0.01	NP (normality)
Beryllium (mg/L)	MCM-05	0.003	0.000054	0.021	No 13	0.002773	0.0008171	92.31 None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-05	0.005	0.0019	0.036	No 13	0.004762	0.0008598	92.31 None	No	0.01	NP (NDs)
Combined Radium 226 + 228 (pCi/L)	MCM-05	2.84	1.334	55.8	No 13	2.157	1.231	0 None	x^(1/3)	0.01	Param.
Fluoride (mg/L)	MCM-05	0.5768	0.2622	4	No 15	0.4353	0.2376	6.667 None	sqrt(x)	0.01	Param.
Lead (mg/L)	MCM-05	0.005	0.0002	0.005	No 13	0.004631	0.001331	92.31 None	No	0.01	NP (NDs)
Lithium (mg/L)	MCM-05	0.043	0.021	0.03	No 13	0.07032	0.1504	0 None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-05	0.01	0.0023	0.15	No 13	0.007623	0.003716	69.23 None	No	0.01	NP (NDs)

FIGURE A.

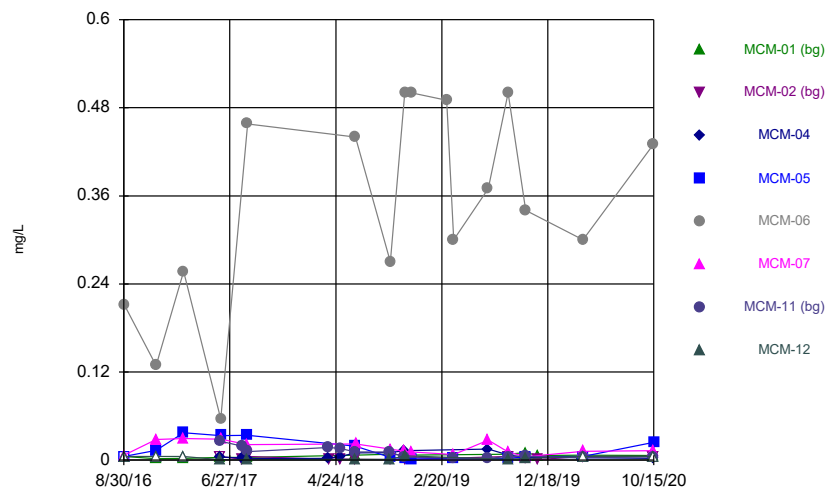
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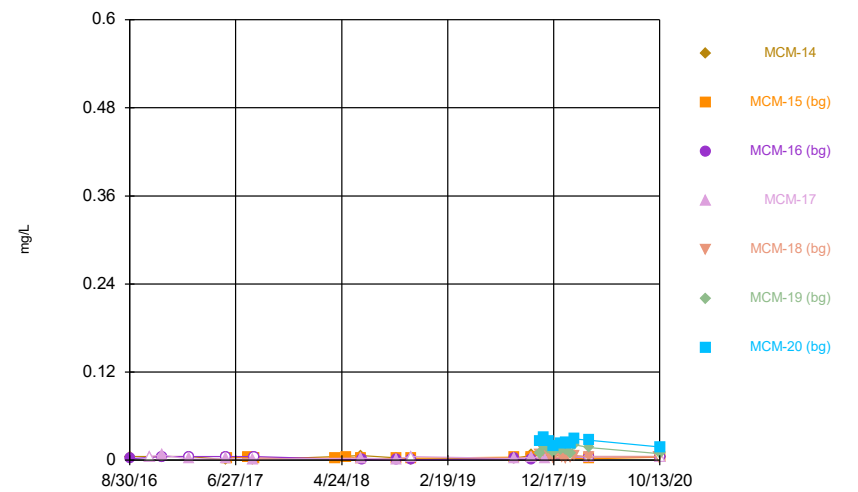
Time Series



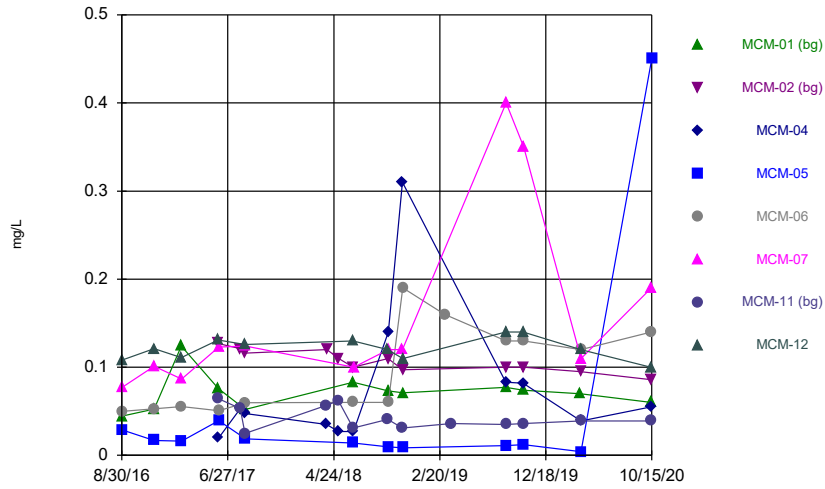
Time Series



Time Series

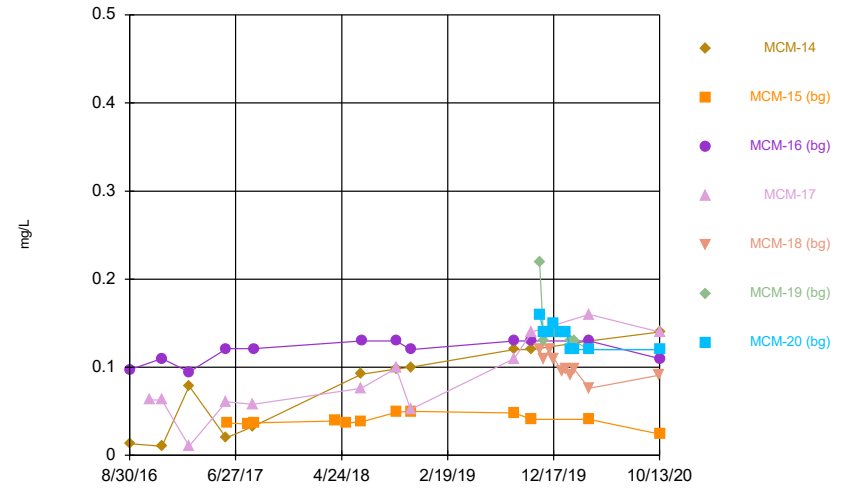


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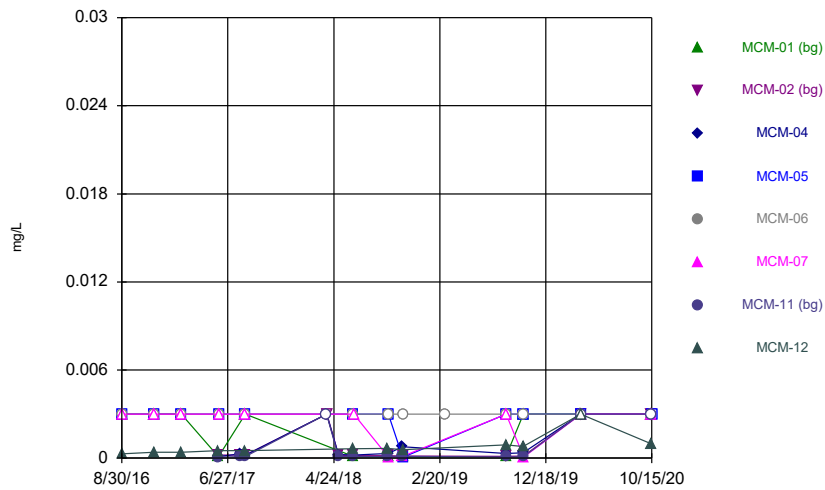
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



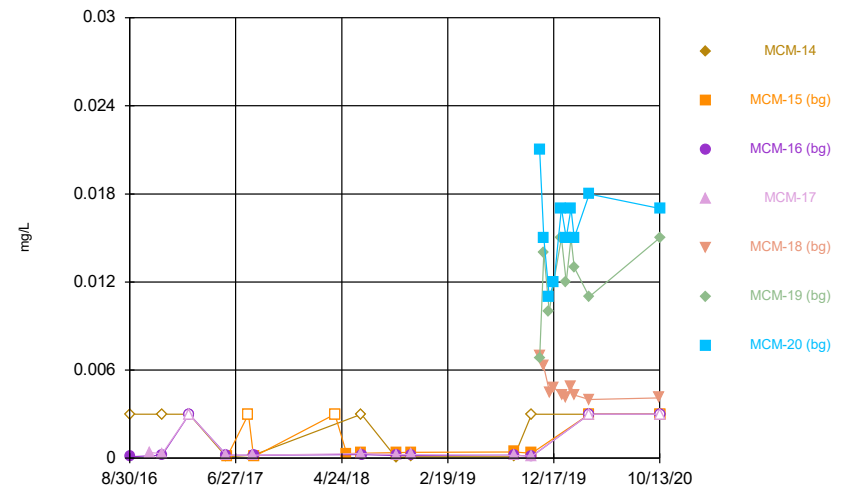
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



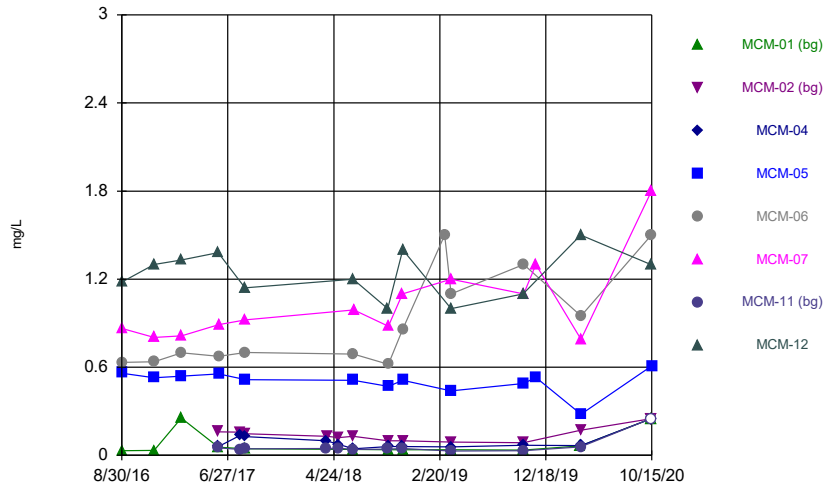
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



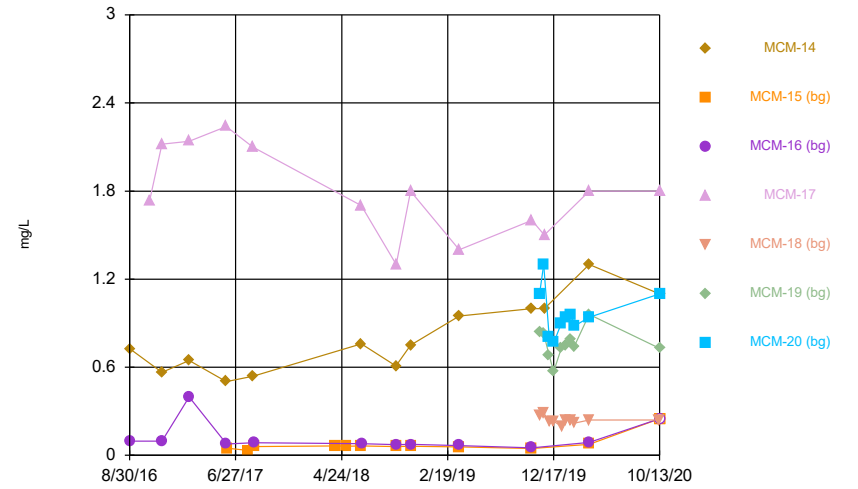
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



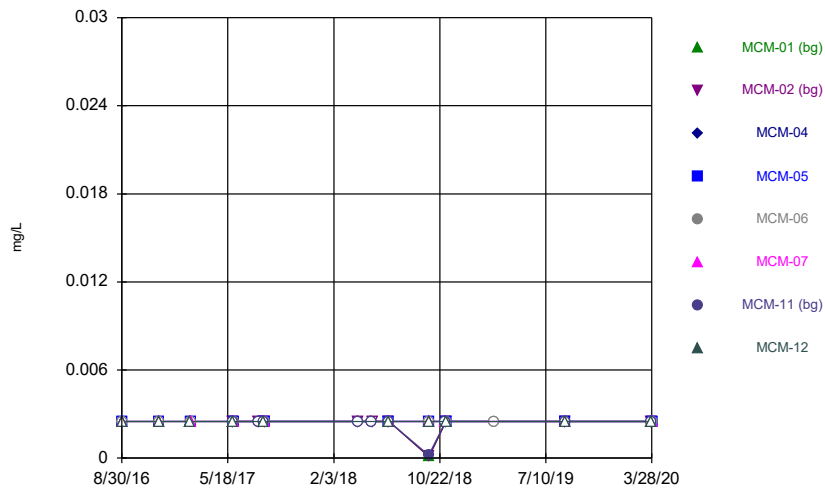
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



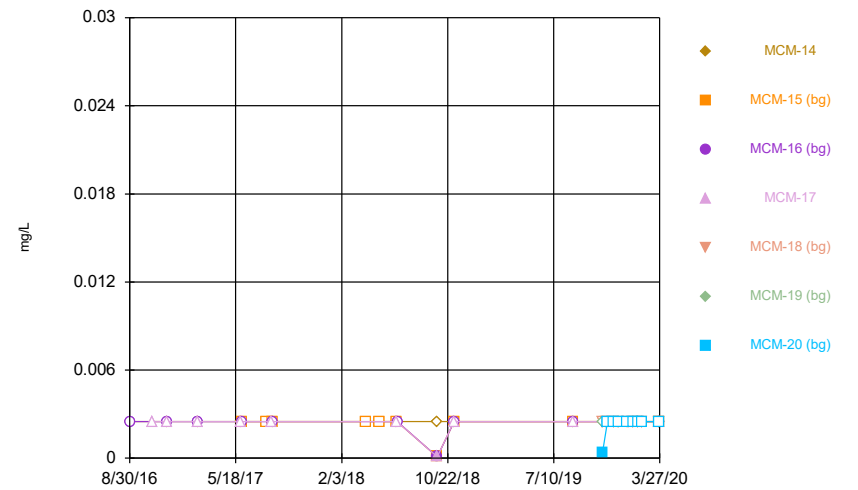
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Time Series



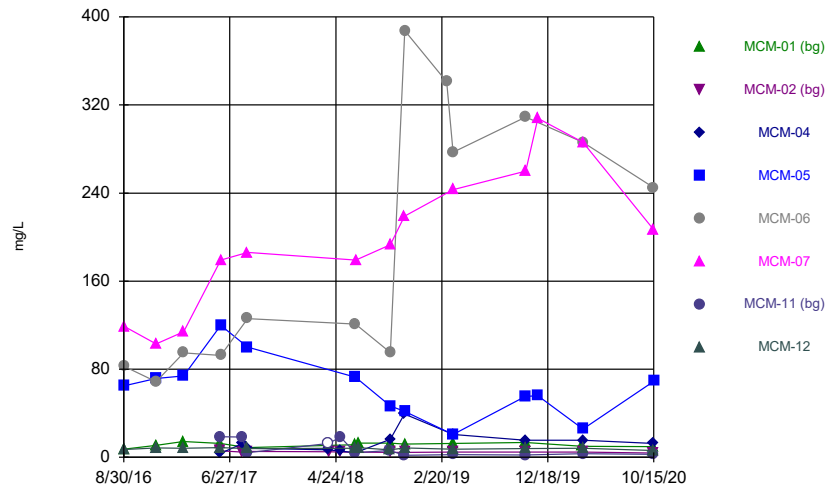
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



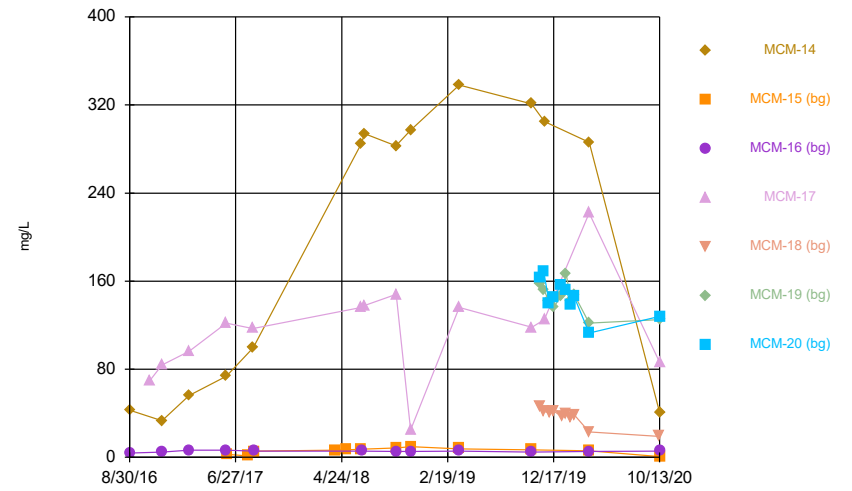
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



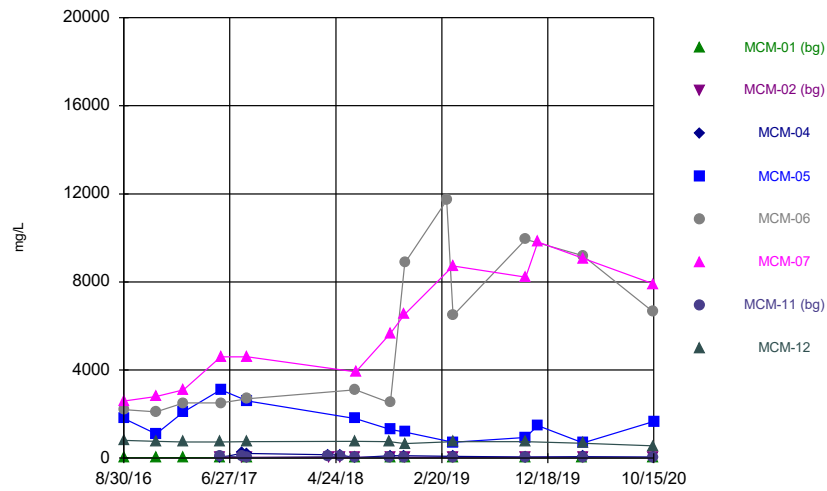
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



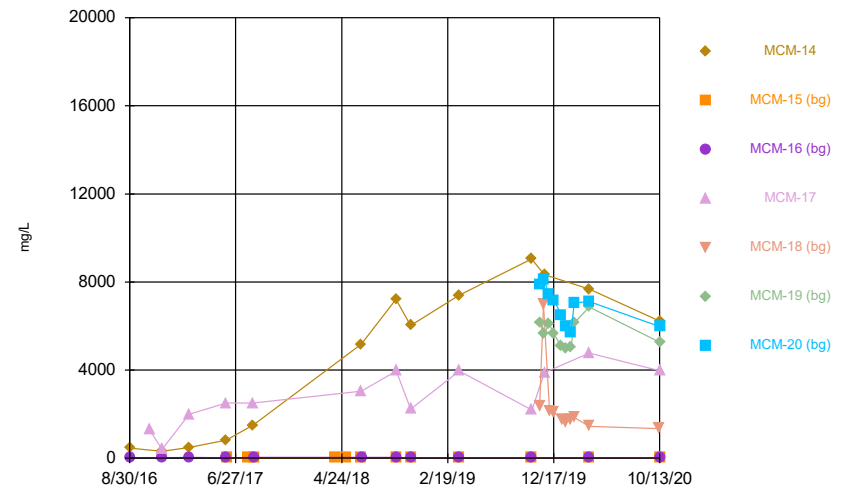
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



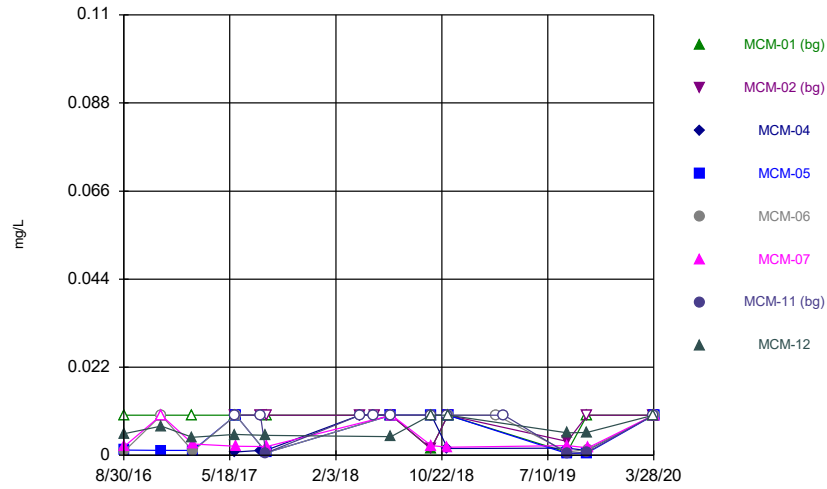
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



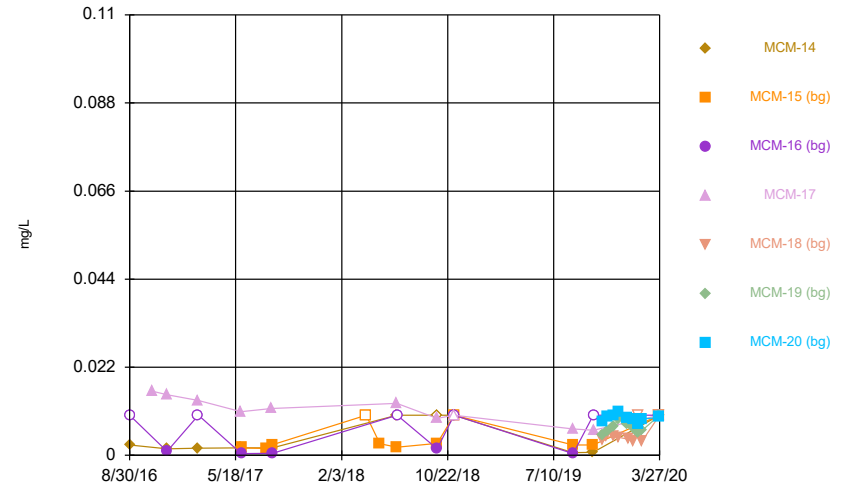
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Time Series



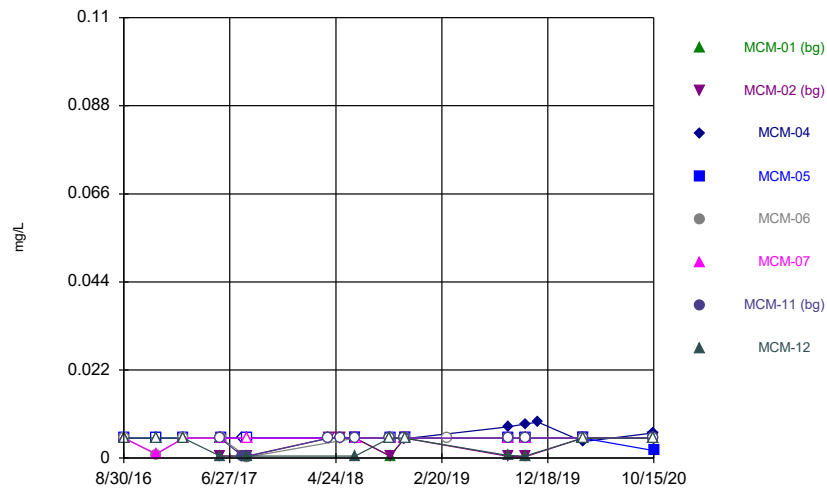
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



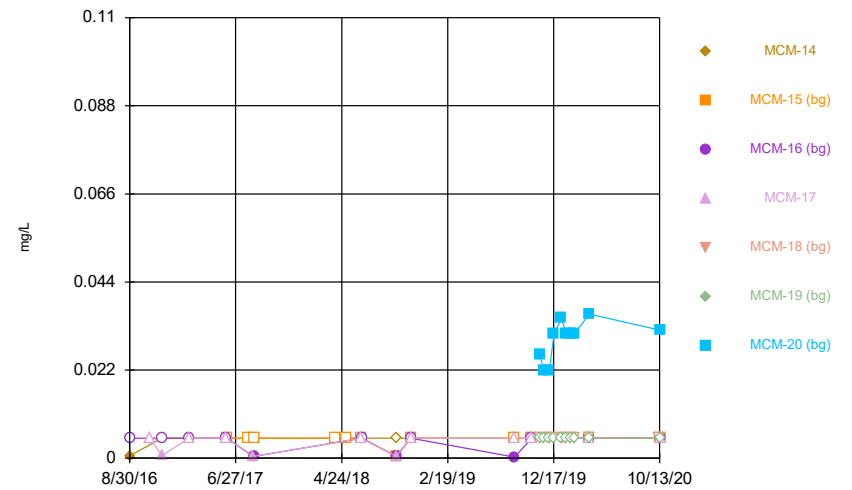
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Time Series



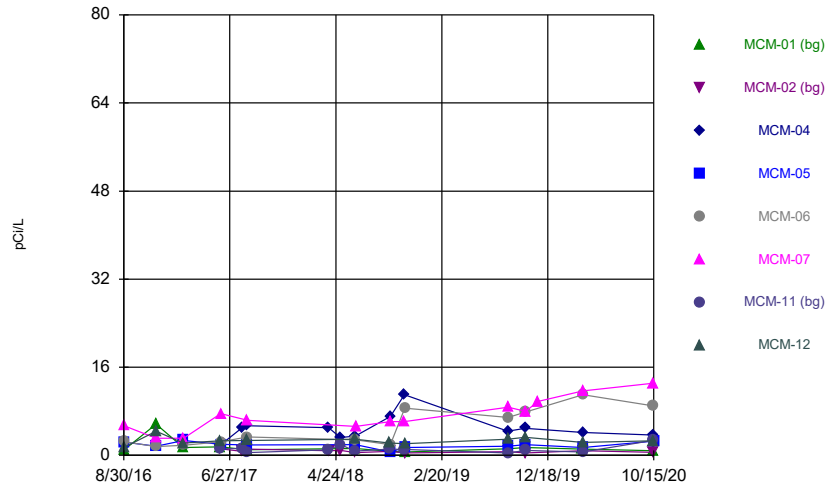
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Time Series

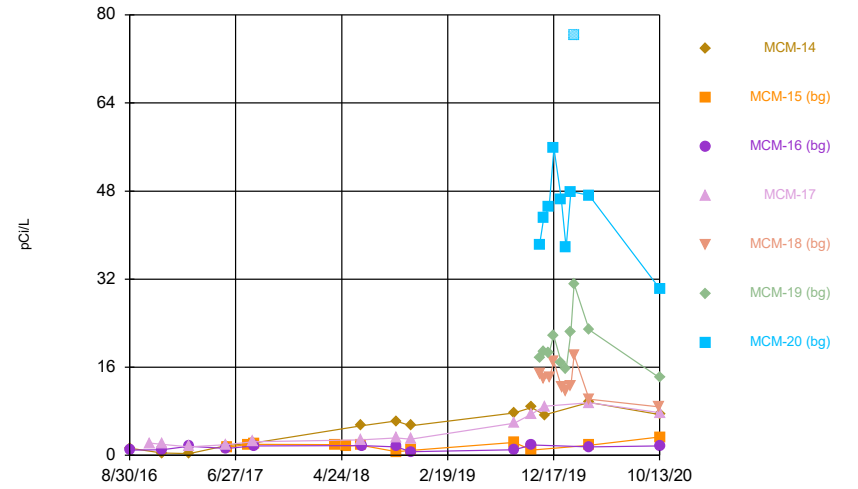


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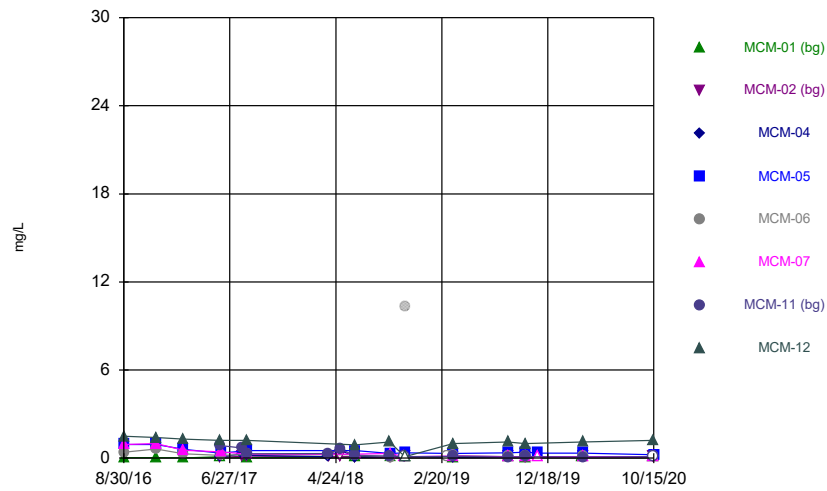
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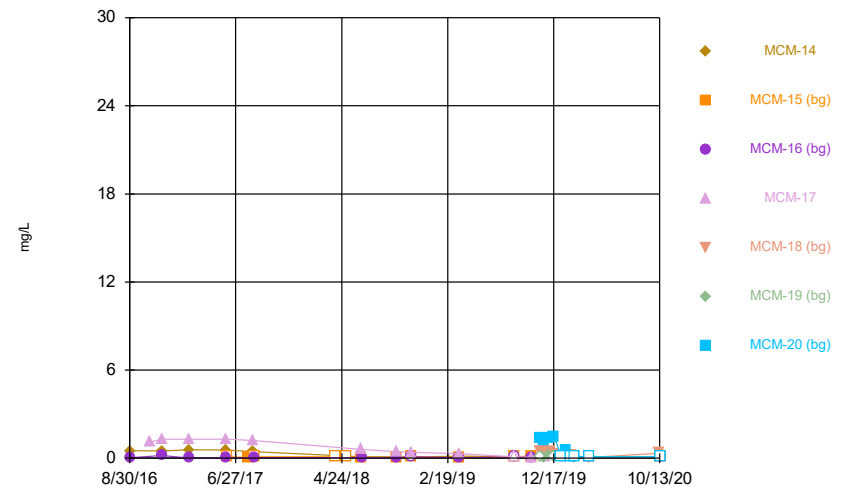
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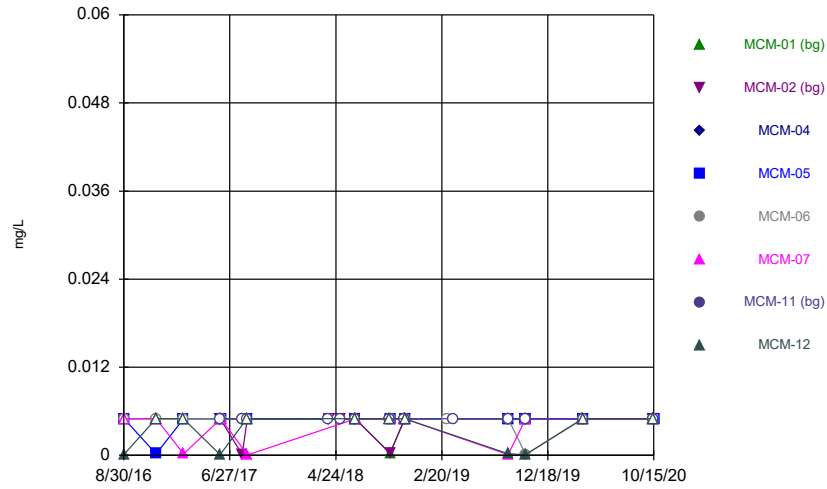
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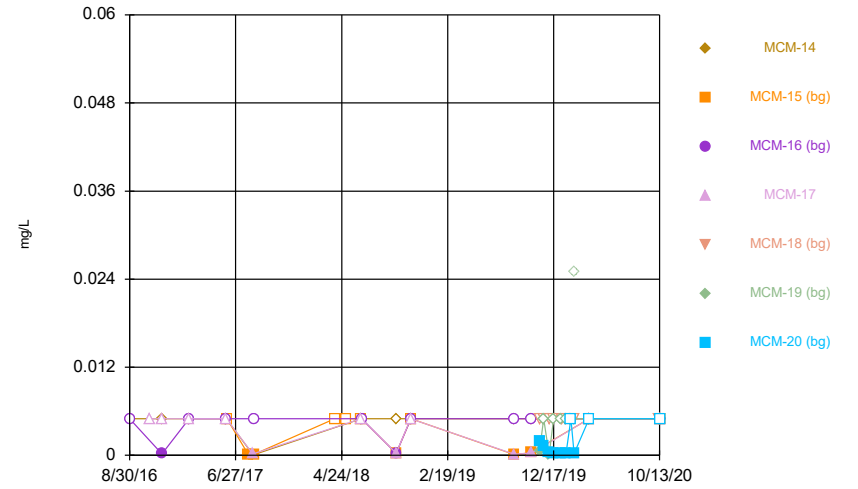


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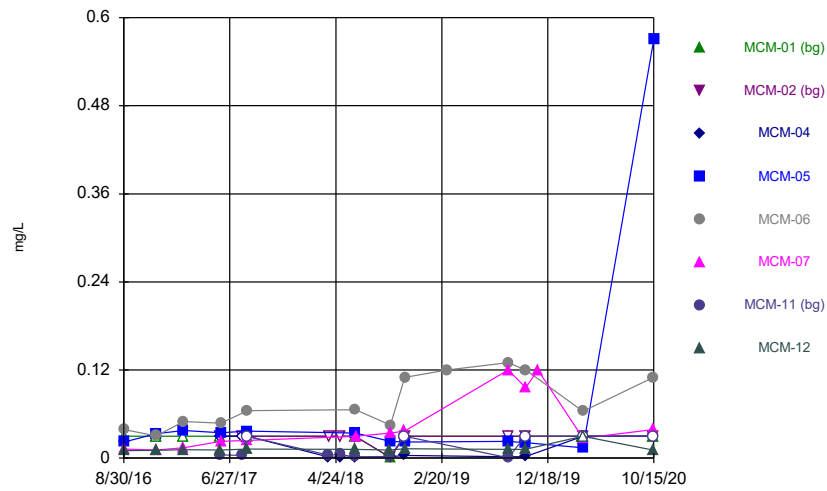
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Time Series



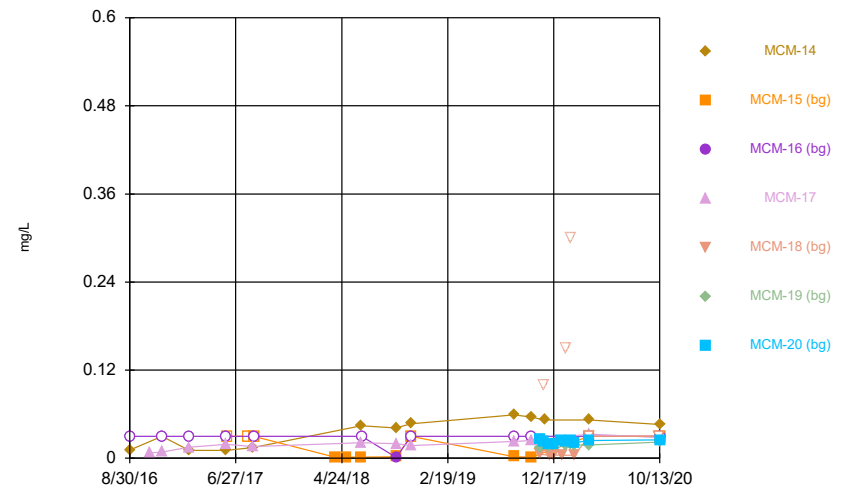
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Time Series



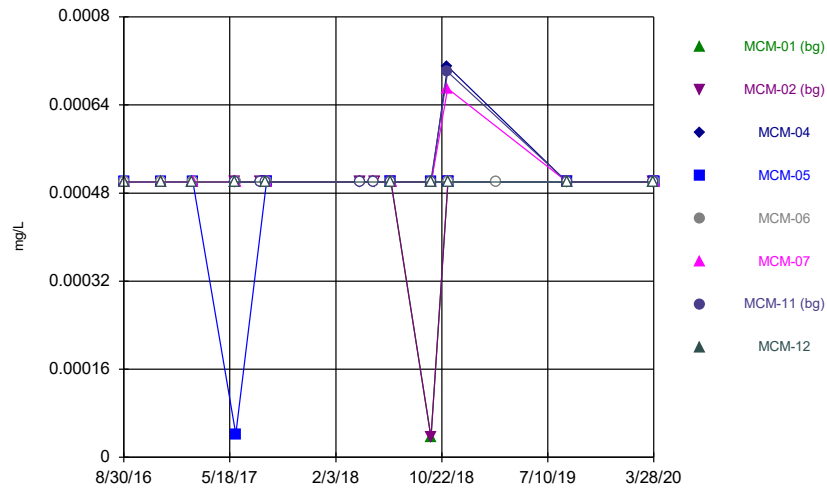
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



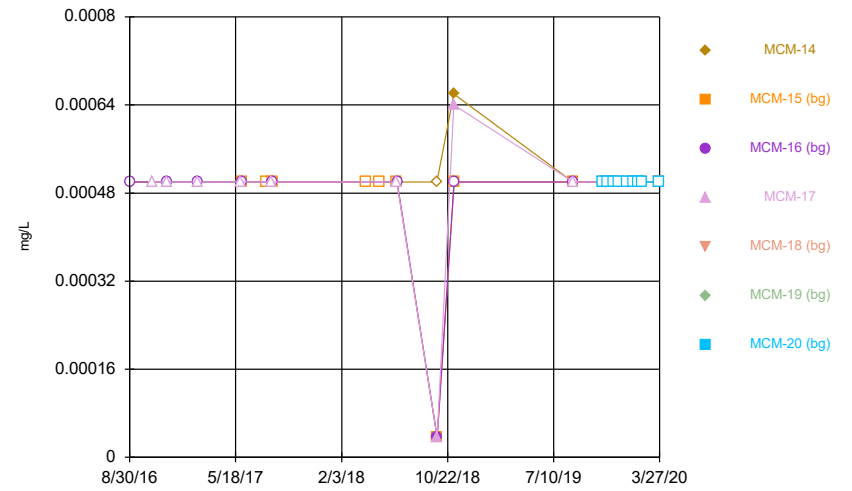
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



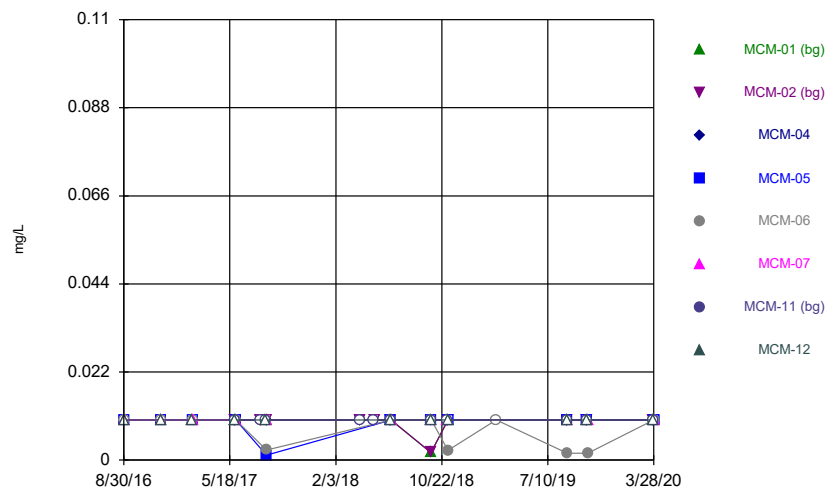
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



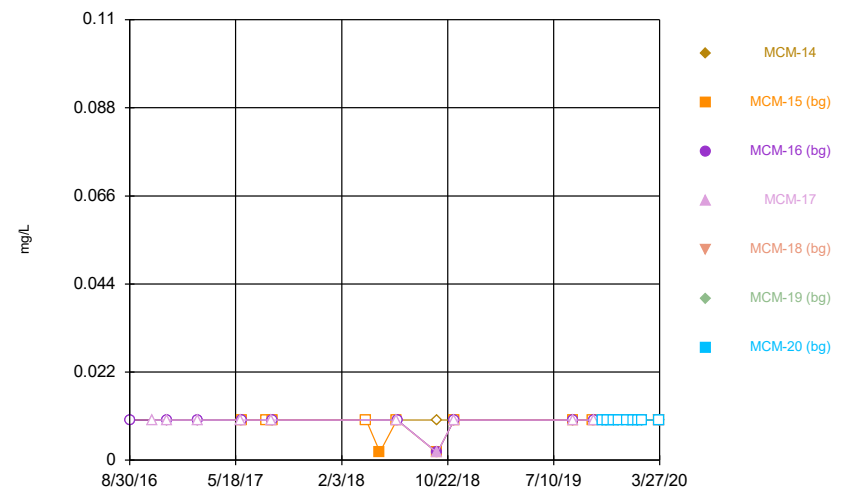
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



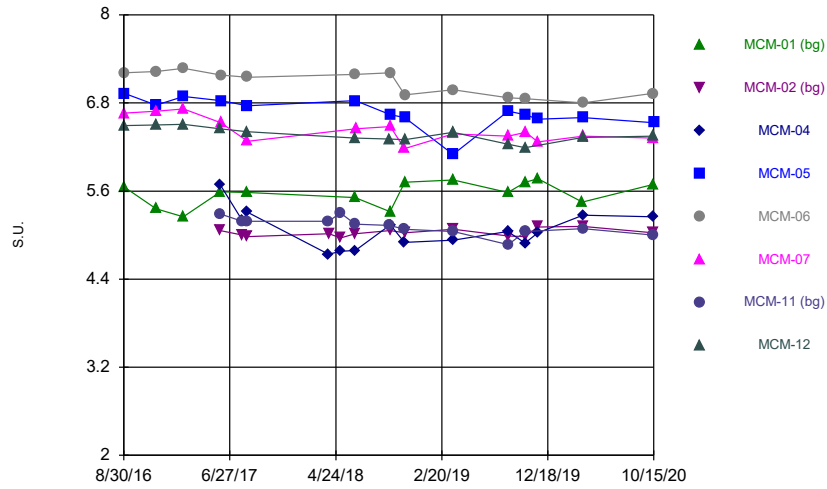
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



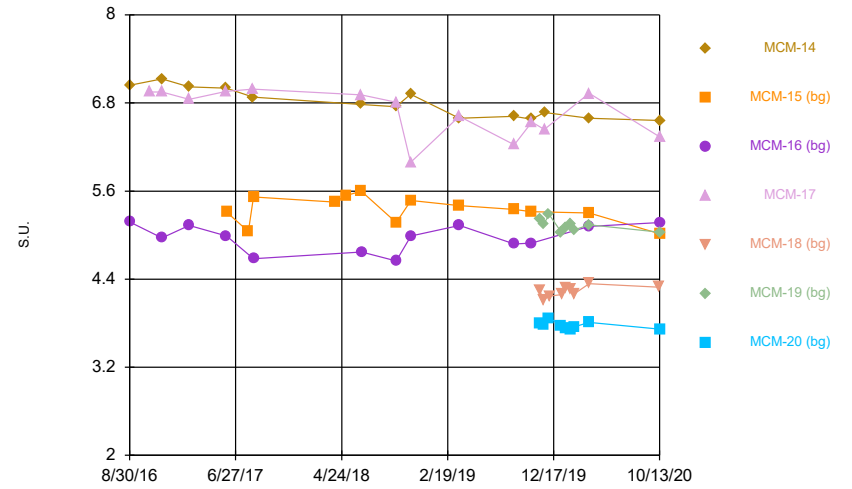
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Time Series



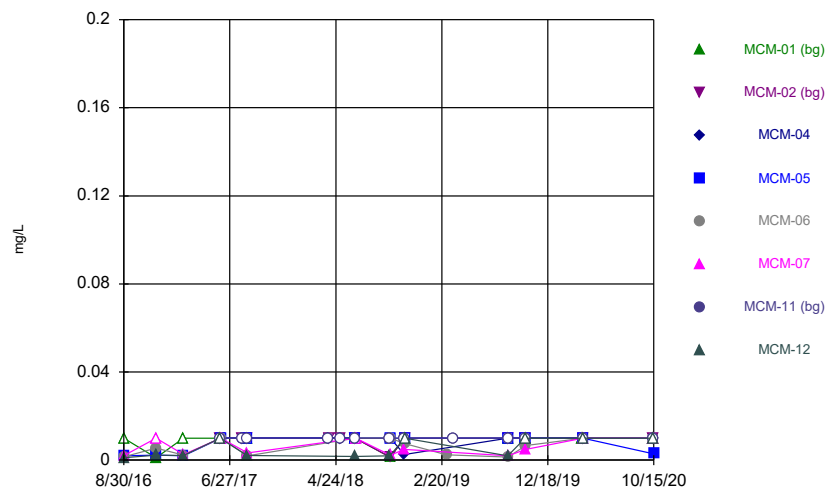
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



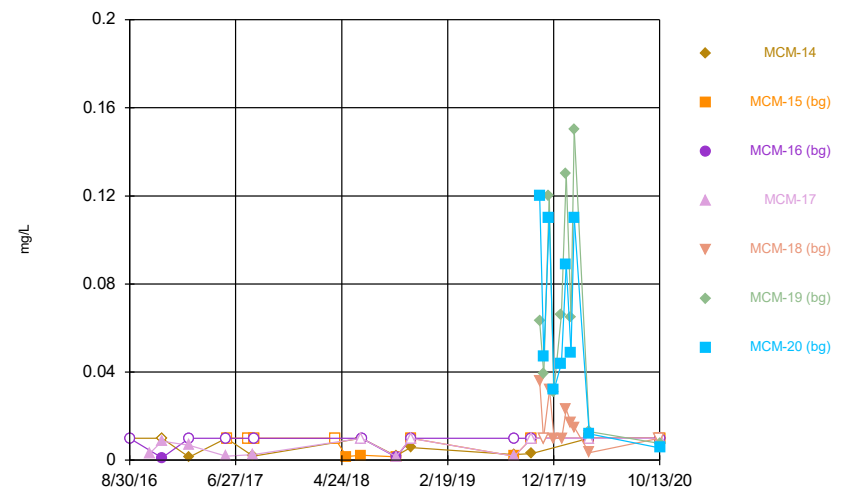
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Time Series



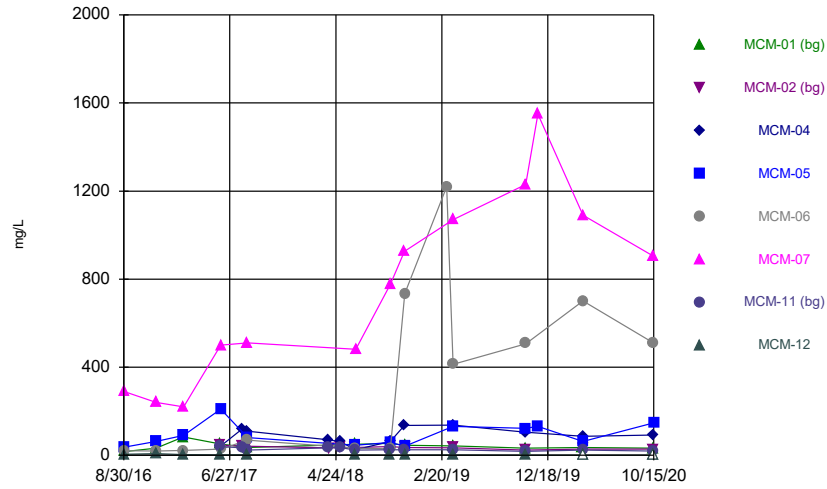
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series

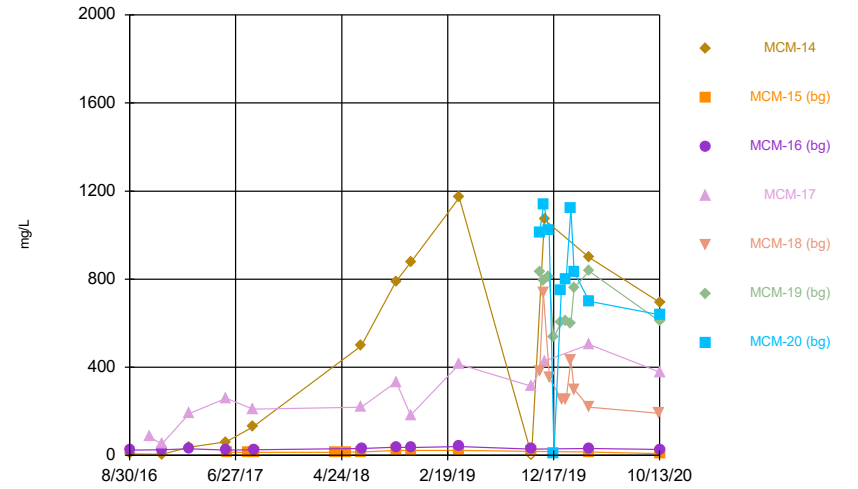


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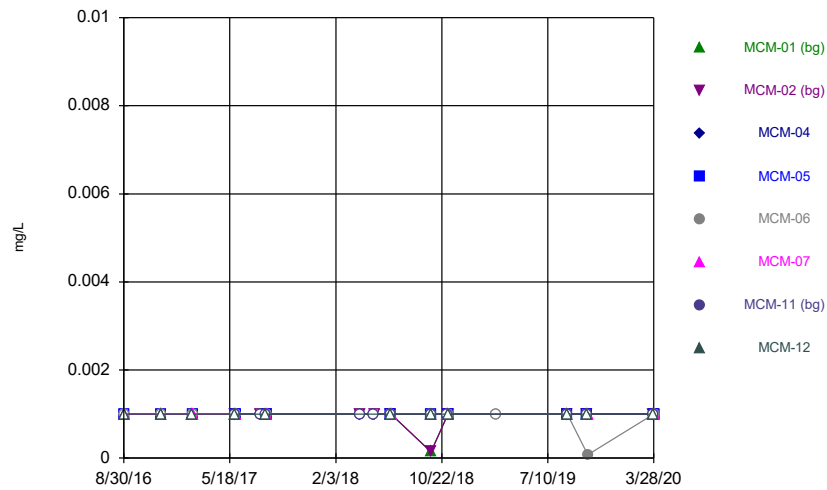
Time Series



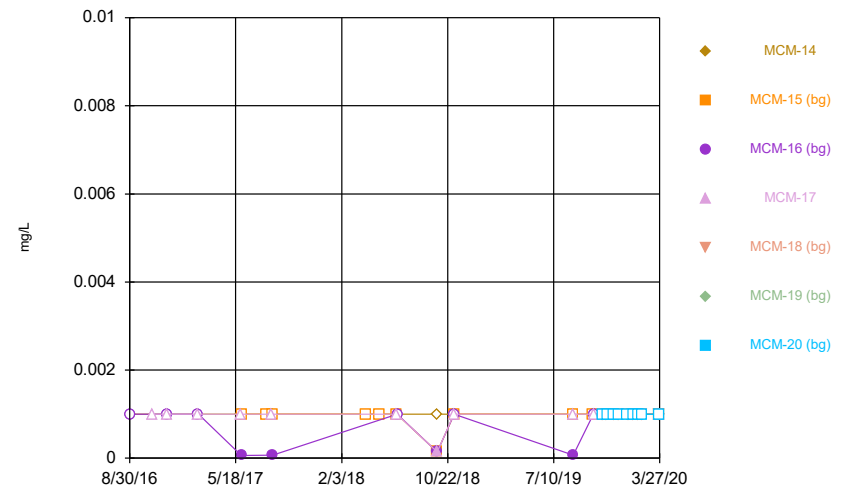
Time Series



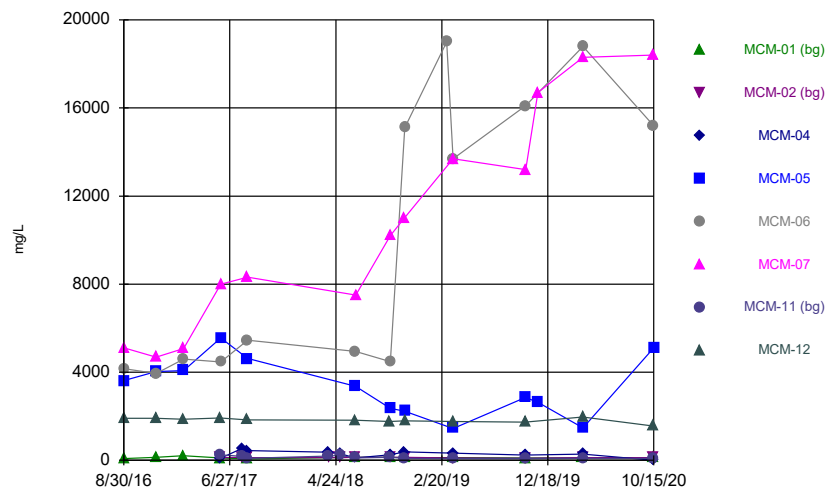
Time Series



Time Series

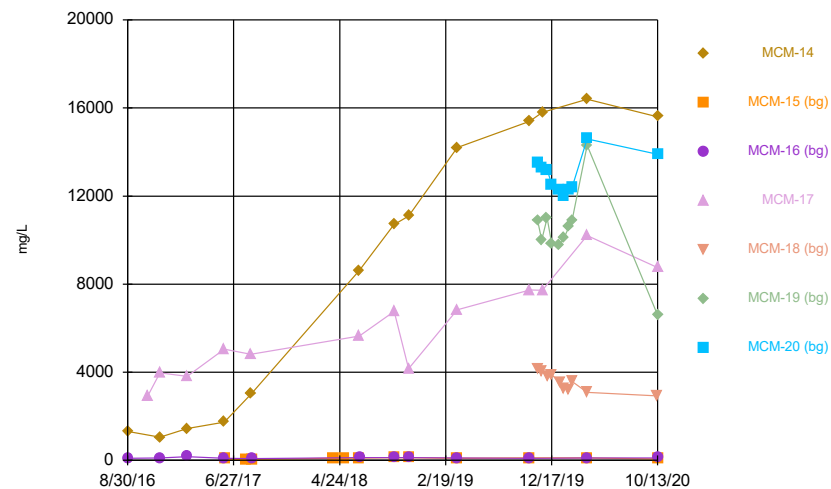


Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:16 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:16 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series

Constituent: Antimony (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.003							<0.003
8/31/2016				<0.003	<0.003	<0.003		
11/30/2016	<0.003			<0.003	<0.003	<0.003		<0.003
2/15/2017	<0.003							<0.003
2/16/2017				<0.003	<0.003	<0.003		
5/31/2017		<0.003					<0.003	<0.003
6/1/2017	<0.003		<0.003					
6/2/2017				<0.003	<0.003	<0.003		
8/2/2017		<0.003	<0.003				<0.003	
8/15/2017							<0.003	<0.003
8/16/2017	<0.003	<0.003						
8/17/2017			<0.003	<0.003	<0.003	<0.003		
4/4/2018			<0.003				<0.003	
4/5/2018		<0.003						
5/8/2018			<0.003				<0.003	
5/9/2018		<0.003						
6/19/2018	<0.003	<0.003					<0.003	<0.003
6/20/2018			<0.003	<0.003	<0.003			
6/21/2018						<0.003		
9/25/2018							<0.003	<0.003
9/26/2018	0.00078	0.00078						
9/27/2018			<0.003	<0.003	<0.003	<0.003		
11/6/2018			<0.003			<0.003	<0.003	
11/7/2018	<0.003	<0.003		<0.003	<0.003			<0.003
3/6/2019					<0.003			
3/25/2019							<0.003	
8/27/2019	<0.003		<0.003					<0.003
8/28/2019		<0.003		<0.003	0.00098 (J)	<0.003	<0.003	
10/15/2019			<0.003					<0.003
10/16/2019	<0.003	<0.003		<0.003			<0.003	
10/17/2019					0.0009 (J)	<0.003		
3/26/2020	<0.003							
3/27/2020		<0.003					<0.003	<0.003
3/28/2020			<0.003	<0.003	0.0029 (J)	<0.003		

Time Series

Constituent: Arsenic (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.005							<0.005
8/31/2016				<0.005	0.212	0.0066		
11/30/2016	0.0018 (J)			0.0132	0.129	0.0281		<0.005
2/15/2017	0.0022 (J)							<0.005
2/16/2017				0.0372	0.257	0.0295		
5/31/2017		<0.005					0.0259	0.0007 (J)
6/1/2017	0.0036 (J)		0.004 (J)					
6/2/2017				0.0335	0.0559	0.0286		
8/2/2017		0.0011 (J)	0.0028 (J)				0.0188	
8/15/2017							0.0117	0.0006 (J)
8/16/2017	0.0038 (J)	<0.005						
8/17/2017			0.0021 (J)	0.0336	0.458	0.0211		
4/4/2018			0.0023 (J)				0.017	
4/5/2018		0.00098 (J)						
5/8/2018			0.0048 (J)				0.016	
5/9/2018		0.0014 (J)						
6/19/2018	0.0069	0.0011 (J)					0.011	0.001 (J)
6/20/2018			0.0099	0.019	0.44			
6/21/2018						0.022 (J)		
9/25/2018							0.011	0.0011 (J)
9/26/2018	0.0081	0.00057						
9/27/2018			0.01	0.0035 (J)	0.27	0.015		
11/6/2018			0.013			0.012	0.0043 (J)	
11/7/2018	0.0069	0.00059 (J)		0.002 (J)	0.5			0.0057
11/27/2018				0.0016 (J)	0.5	0.011		
3/6/2019					0.49			
3/25/2019							0.0029 (J)	
3/26/2019				0.0018 (J)	0.3	0.0078		
7/2/2019			0.015 (J)		0.37	0.027	0.0024 (J)	
8/27/2019	0.0079		0.0072					0.0011 (J)
8/28/2019		<0.005		0.0019 (J)	0.5	0.011	0.005 (J)	
10/15/2019			0.0038 (J)					0.0024 (J)
10/16/2019	0.01	0.003 (J)		0.0047 (J)			0.0054	
10/17/2019					0.34	0.0046 (J)		
11/19/2019		0.00057 (J)						
11/20/2019	0.0064							
3/26/2020	0.0069							
3/27/2020		<0.005					0.0034 (J)	<0.005
3/28/2020			0.0034 (J)	<0.005	0.3	0.012		
10/12/2020							0.0047 (J)	<0.005
10/13/2020	0.0061	<0.005	0.0022 (J)					
10/14/2020					0.43	0.013		
10/15/2020				0.024				

Time Series

Constituent: Arsenic (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	<0.005		0.0018 (J)				
10/25/2016				<0.005			
11/30/2016	<0.005		<0.005	0.0072			
2/15/2017	<0.005		<0.005	0.0017 (J)			
5/31/2017	0.0008 (J)			0.0018 (J)			
6/1/2017			<0.005				
6/2/2017		0.0026 (J)					
8/2/2017		0.0047 (J)					
8/15/2017				0.0015 (J)			
8/16/2017	0.0007 (J)						
8/17/2017		0.0028 (J)	<0.005				
4/4/2018		0.0029 (J)					
5/8/2018		0.0048 (J)					
6/19/2018	0.0062 (J)	0.0019 (J)		0.0029 (J)			
6/20/2018			0.00058 (J)				
9/25/2018	0.0031 (J)						
9/26/2018		0.0023 (J)	0.00057	0.0015 (J)			
11/6/2018	0.0014 (J)			<0.005			
11/7/2018		0.0028	0.00057				
8/26/2019	0.0022 (J)						
8/27/2019		0.0041 (J)	0.0019 (J)	0.0024 (J)			
10/15/2019	0.0067	0.0038 (J)					
10/16/2019			0.001 (J)	0.0043 (J)			
11/7/2019					0.0067	0.0094 (J)	0.026
11/18/2019					0.012 (J)		
11/19/2019						0.019 (J)	0.031 (J)
11/21/2019				0.0031 (J)			
12/4/2019						0.016	0.026
12/5/2019					0.0055		
12/17/2019						0.011 (J)	
12/18/2019					0.0031 (J)		0.019 (J)
1/8/2020						0.015 (J)	0.022 (J)
1/9/2020					0.0034 (J)		
1/21/2020					0.0031 (J)	0.015 (J)	0.024 (J)
2/4/2020					<0.005	0.0092 (J)	0.022 (J)
2/13/2020					0.0066	0.021 (J)	0.029
3/27/2020	<0.005	0.0018 (J)	<0.005	<0.005	0.0043 (J)	0.017	0.027
10/12/2020					<0.005		
10/13/2020	<0.005	0.0042 (J)	<0.005	<0.005		0.0089	0.018

Time Series

Constituent: Barium (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	0.0443							0.108
8/31/2016				0.0289	0.0498	0.0771		
11/30/2016	0.0524			0.0168	0.0528	0.101		0.121
2/15/2017	0.124							0.111
2/16/2017				0.016	0.0555	0.0865		
5/31/2017		0.127					0.0646	0.131
6/1/2017	0.0757		0.0195					
6/2/2017				0.0393 (J)	0.0508	0.123		
8/2/2017		0.121	0.053				0.0533	
8/15/2017							0.0247	0.126
8/16/2017	0.0522	0.116						
8/17/2017			0.0475	0.0188	0.0596	0.124		
4/4/2018			0.035				0.057	
4/5/2018		0.12						
5/8/2018			0.027				0.062	
5/9/2018		0.11						
6/19/2018	0.083	0.1					0.031	0.13
6/20/2018			0.027	0.014	0.06			
6/21/2018						0.1		
9/25/2018							0.041	0.12
9/26/2018	0.073	0.11						
9/27/2018			0.14	0.0097 (J)	0.06	0.12		
11/6/2018			0.31			0.12	0.031	
11/7/2018	0.071	0.097		0.0085 (J)	0.19			0.11
3/6/2019					0.16			
3/25/2019							0.036	
8/27/2019	0.077		0.083					0.14
8/28/2019		0.1		0.011	0.13	0.4	0.035	
10/15/2019			0.082					0.14
10/16/2019	0.074	0.1		0.012			0.036	
10/17/2019					0.13	0.35		
3/26/2020	0.07							
3/27/2020		0.095					0.039	0.12
3/28/2020			0.039	0.0041 (J)	0.12	0.11		
10/12/2020							0.039	0.1
10/13/2020	0.06	0.086	0.055					
10/14/2020					0.14	0.19		
10/15/2020				0.45				

Time Series

Constituent: Barium (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	0.0131		0.0973				
10/25/2016				0.063			
11/30/2016	0.0105		0.11	0.0628			
2/15/2017	0.0786		0.0945	0.0102			
5/31/2017	0.0199			0.061			
6/1/2017			0.121				
6/2/2017		0.0368 (J)					
8/2/2017		0.0355					
8/15/2017				0.0579			
8/16/2017	0.033						
8/17/2017		0.037	0.121				
4/4/2018		0.039					
5/8/2018		0.037					
6/19/2018	0.092	0.038		0.076			
6/20/2018			0.13				
9/25/2018	0.098						
9/26/2018		0.049	0.13	0.099			
11/6/2018	0.1			0.052			
11/7/2018		0.05	0.12				
8/26/2019	0.12						
8/27/2019		0.048	0.13	0.11			
10/15/2019	0.12	0.041					
10/16/2019			0.13	0.14			
11/7/2019					0.12	0.22	0.16
11/18/2019					0.11		
11/19/2019						0.13	0.14
12/4/2019						0.14	0.14
12/5/2019					0.12		
12/17/2019						0.14	
12/18/2019					0.11		0.15
1/8/2020						0.14	0.14
1/9/2020					0.096		
1/21/2020					0.098	0.14	0.14
2/4/2020					0.091	0.13	0.12
2/13/2020					0.098	0.13	0.12
3/27/2020	0.13	0.041	0.13	0.16	0.076	0.12	0.12
10/12/2020					0.091		
10/13/2020	0.14	0.024	0.11	0.14		0.12	0.12

Time Series

Constituent: Beryllium (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.003							0.0003 (J)
8/31/2016				<0.003	<0.003	<0.003		
11/30/2016	<0.003			<0.003	<0.003	<0.003		0.0004 (J)
2/15/2017	<0.003							0.0004 (J)
2/16/2017				<0.003	<0.003	<0.003		
5/31/2017		0.0002 (J)					7E-05 (J)	0.0005 (J)
6/1/2017	9E-05 (J)		0.0001 (J)					
6/2/2017				<0.003	<0.003	<0.003		
8/2/2017		0.0002 (J)	0.0003 (J)				0.0001 (J)	
8/15/2017							9E-05 (J)	0.0005 (J)
8/16/2017	<0.003	0.0002 (J)						
8/17/2017			0.0002 (J)	<0.003	<0.003	<0.003		
4/4/2018			<0.003				<0.003	
4/5/2018		<0.003						
5/8/2018			0.00025 (J)				0.0001 (J)	
5/9/2018		0.00017 (J)						
6/19/2018	0.00011 (J)	0.00017 (J)					0.00011 (J)	0.00065 (J)
6/20/2018			0.00021 (J)	<0.003	<0.003			
6/21/2018						<0.003		
9/25/2018							0.0001 (J)	0.00066 (J)
9/26/2018	9.2E-05 (J)	0.00017 (J)						
9/27/2018			0.00031 (J)	<0.003	<0.003	7.4E-05 (J)		
11/6/2018			0.00077 (J)			0.00012 (J)	0.00012 (J)	
11/7/2018	0.0001 (J)	0.00015 (J)		5.4E-05 (J)	<0.003			0.00058 (J)
3/6/2019					<0.003			
8/27/2019	9E-05 (J)		0.00032 (J)					0.0009 (J)
8/28/2019		0.00011 (J)		<0.003	<0.003	<0.003	8.4E-05 (J)	
10/15/2019			0.00035 (J)					0.00079 (J)
10/16/2019	<0.003	0.00013 (J)		<0.003			9E-05 (J)	
10/17/2019					<0.003	7.8E-05 (J)		
3/26/2020	<0.003							
3/27/2020		<0.003					<0.003	<0.003
3/28/2020			<0.003	<0.003	<0.003	<0.003		
10/12/2020							<0.003	0.001 (J)
10/13/2020	<0.003	<0.003	<0.003					
10/14/2020					<0.003	<0.003		
10/15/2020				<0.003				

Time Series

Constituent: Beryllium (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	<0.003		0.0001 (J)				
10/25/2016				0.0004 (J)			
11/30/2016	<0.003		0.0002 (J)	0.0003 (J)			
2/15/2017	<0.003		<0.003	<0.003			
5/31/2017	0.0001 (J)			0.0002 (J)			
6/1/2017			0.0002 (J)				
6/2/2017		0.0001 (J)					
8/2/2017		<0.003					
8/15/2017				0.0002 (J)			
8/16/2017	0.0002 (J)						
8/17/2017		0.0001 (J)	0.0002 (J)				
4/4/2018		<0.003					
5/8/2018		0.00031 (J)					
6/19/2018	<0.003	0.00034 (J)		0.00032 (J)			
6/20/2018			0.00024 (J)				
9/25/2018	5E-05 (J)						
9/26/2018		0.00039 (J)	0.00019 (J)	0.00024 (J)			
11/6/2018	9.7E-05 (J)			0.00026 (J)			
11/7/2018		0.00041 (J)	0.00019 (J)				
8/26/2019	0.0001 (J)						
8/27/2019		0.00042 (J)	0.00021 (J)	0.00018 (J)			
10/15/2019	<0.003	0.00034 (J)					
10/16/2019			0.00014 (J)	0.00014 (J)			
11/7/2019					0.007	0.0068 (J)	0.021
11/18/2019					0.0063 (J)		
11/19/2019						0.014 (J)	0.015 (J)
12/4/2019						0.01	0.011
12/5/2019					0.0045		
12/17/2019						0.012	
12/18/2019					0.0048		0.012
1/8/2020						0.015 (J)	0.017
1/9/2020					0.0043		
1/21/2020					0.0041 (J)	0.012 (J)	0.015
2/4/2020					0.0049 (J)	0.015 (J)	0.017 (J)
2/13/2020					0.0043	0.013 (J)	0.015 (J)
3/27/2020	<0.003	<0.003	<0.003	<0.003	0.004	0.011	0.018
10/12/2020					0.0041		
10/13/2020	<0.003	<0.003	<0.003	<0.003		0.015	0.017

Time Series

Constituent: Boron (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	0.0325 (J)							1.18
8/31/2016				0.56	0.632	0.863		
11/30/2016	0.0334 (J)			0.529	0.637	0.804		1.3
2/15/2017	0.254							1.33
2/16/2017				0.539	0.698	0.815		
5/31/2017		0.161					0.0521	1.38
6/1/2017	0.0564		0.0608					
6/2/2017				0.555	0.674	0.891		
8/2/2017		0.158	0.137				0.0392 (J)	
8/15/2017							0.0448	1.14
8/16/2017	0.0435	0.148						
8/17/2017			0.128	0.516	0.7	0.922		
4/4/2018			0.1				0.046	
4/5/2018		0.13						
5/8/2018			0.074				0.048	
5/9/2018		0.12						
6/19/2018	0.04 (J)	0.13					0.04	1.2
6/20/2018			0.045	0.51	0.69			
6/21/2018						0.99		
9/25/2018							0.043	1
9/26/2018	0.038 (J)	0.1						
9/27/2018			0.06	0.47	0.62	0.88		
11/6/2018			0.06			1.1	0.046	
11/7/2018	0.037 (J)	0.1		0.51	0.86			1.4
3/6/2019					1.5			
3/24/2019				0.44	1.1	1.2		1
3/25/2019	0.038 (J)	0.091	0.058				0.03 (J)	
10/15/2019			0.068					1.1
10/16/2019	0.036 (J)	0.085		0.49			0.032 (J)	
10/17/2019					1.3	1.1		
11/20/2019				0.53		1.3		
3/26/2020	0.064 (J)							
3/27/2020		0.17 (J)					0.058 (J)	1.5
3/28/2020			0.067 (J)	0.28 (J)	0.95	0.79		
10/12/2020							<0.5	1.3
10/13/2020	<0.5	<0.5	<0.5					
10/14/2020					1.5	1.8		
10/15/2020				0.61				

Time Series

Constituent: Boron (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	0.726		0.0972 (J)				
10/25/2016				1.73			
11/30/2016	0.565		0.0964	2.12			
2/15/2017	0.647		0.398	2.14			
5/31/2017	0.503			2.24			
6/1/2017			0.0776				
6/2/2017		0.0495					
8/2/2017		0.0333 (J)					
8/15/2017				2.1			
8/16/2017	0.539						
8/17/2017		0.0593	0.0853				
4/4/2018		0.065					
5/8/2018		0.062					
6/19/2018	0.76	0.064		1.7			
6/20/2018			0.079				
9/25/2018	0.61						
9/26/2018		0.06	0.072	1.3			
11/6/2018	0.75			1.8			
11/7/2018		0.062 (J)	0.074				
3/24/2019	0.95			1.4			
3/25/2019		0.057	0.067				
10/15/2019	1	0.046					
10/16/2019			0.051	1.6			
11/7/2019					0.27	0.84	1.1
11/18/2019					0.29 (J)		
11/19/2019						0.83	1.3
11/21/2019	1			1.5			
12/4/2019						0.68	0.81
12/5/2019					0.23		
12/17/2019						0.57	
12/18/2019					0.23		0.77
1/8/2020						0.73	0.9
1/9/2020					0.2		
1/21/2020					0.24 (J)	0.75	0.94
2/4/2020					0.24 (J)	0.79 (J)	0.96 (J)
2/13/2020					0.22	0.74	0.88
3/27/2020	1.3	0.076 (J)	0.088 (J)	1.8	0.24 (J)	0.96	0.94
10/12/2020					0.24 (J)		
10/13/2020	1.1	<0.5	<0.5	1.8		0.73	1.1

Time Series

Constituent: Cadmium (mg/L) Analysis Run 12/10/2020 3:17 PM
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.0025							<0.0025
8/31/2016				<0.0025	<0.0025	<0.0025		
11/30/2016	<0.0025			<0.0025	<0.0025	<0.0025		<0.0025
2/15/2017	<0.0025							<0.0025
2/16/2017				<0.0025	<0.0025	<0.0025		
5/31/2017		<0.0025					<0.0025	<0.0025
6/1/2017	<0.0025		<0.0025					
6/2/2017				<0.0025	<0.0025	<0.0025		
8/2/2017		<0.0025	<0.0025				<0.0025	
8/15/2017							<0.0025	<0.0025
8/16/2017	<0.0025	<0.0025						
8/17/2017			<0.0025	<0.0025	<0.0025	<0.0025		
4/4/2018			<0.0025				<0.0025	
4/5/2018		<0.0025						
5/8/2018			<0.0025				<0.0025	
5/9/2018		<0.0025						
6/19/2018	<0.0025	<0.0025					<0.0025	<0.0025
6/20/2018			<0.0025	<0.0025	<0.0025			
6/21/2018						<0.0025		
9/25/2018							0.0002 (J)	<0.0025
9/26/2018	9.3E-05	9.3E-05						
9/27/2018			<0.0025	<0.0025	<0.0025	<0.0025		
11/6/2018			<0.0025			<0.0025	<0.0025	
11/7/2018	<0.0025	<0.0025		<0.0025	<0.0025			<0.0025
3/6/2019					<0.0025			
8/27/2019	<0.0025		<0.0025					<0.0025
8/28/2019		<0.0025		<0.0025	<0.0025	<0.0025	<0.0025	
3/26/2020	<0.0025							
3/27/2020		<0.0025					<0.0025	<0.0025
3/28/2020			<0.0025	<0.0025	<0.0025	<0.0025		

Time Series

Constituent: Calcium (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	7.3							7.05
8/31/2016				65	82.8	119		
11/30/2016	10.8			71.7	68.7	103		8.69
2/15/2017	14.3							8.34
2/16/2017				74	94.8	114		
5/31/2017		5.9					18.6	8.85
6/1/2017	12.7 (J)		3.65					
6/2/2017				120	92.5	179		
8/2/2017		4.69	12.4				18.5	
8/15/2017							4.09	8.05
8/16/2017	8.7	5.25						
8/17/2017			8.17	100	126	186		
4/4/2018			6.8				<25	
4/5/2018		5						
5/8/2018			5.7				18.4 (J)	
5/9/2018		4.7						
6/19/2018	11.6 (J)	4.8					4.3	8.3
6/20/2018			4.3	72.8	121			
6/21/2018						179		
6/28/2018	13							8.9
9/25/2018							6.2 (D)	6.8
9/26/2018	12.8 (J)	4.6						
9/27/2018			16.4 (J)	46.6	95.1	193		
11/6/2018			39.5			219	1.8	
11/7/2018	11.9	4.6		41.8	387.5 (D)			8.5
3/6/2019					341			
3/24/2019				20.9 (J)	277	243		7.4
3/25/2019	12.6 (J)	4.7	20.8 (J)				2.5 (D)	
10/15/2019			15.5					7.9
10/16/2019	13.6	4.9		55.2			2.2	
10/17/2019					309	260		
11/20/2019				55.8		308		
3/26/2020	10.1							
3/27/2020		4.9					3.3	8.3
3/28/2020			15.5	25.8	286	286		
10/12/2020							2.8	6.1
10/13/2020	9.8	3.8	12.5					
10/14/2020					245	207		
10/15/2020				69.1				

Time Series

Constituent: Calcium (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	42.8		4.02				
10/25/2016				69.4			
11/30/2016	33.2		4.87	83.9			
2/15/2017	56.1		6.61	96.3			
5/31/2017	73.6			122			
6/1/2017			6.42				
6/2/2017		2.77					
8/2/2017		1.27					
8/15/2017				117			
8/16/2017	99.6						
8/17/2017		5.53	5.62				
4/4/2018		6.5					
5/8/2018		6.7					
6/19/2018	285	7.4		136			
6/20/2018			5.7				
6/28/2018	294			138			
9/25/2018	283						
9/26/2018		8.5 (J)	5.3	148			
11/6/2018	297			24.7			
11/7/2018		9.8	5.3				
3/24/2019	338			136			
3/25/2019		7.8	5.7				
10/15/2019	321	6.7					
10/16/2019			4.8	118			
11/7/2019					46.2	158	163
11/18/2019					41.8		
11/19/2019						152	169
11/21/2019	305			125			
12/4/2019						142	140
12/5/2019					40.5		
12/17/2019						136	
12/18/2019					42		145
1/8/2020						147	157
1/9/2020					37.1		
1/21/2020					40.1	167	152
2/4/2020					36.2	142	139
2/13/2020					38.9	148	146
3/27/2020	286	5.9	5.4	222	23.2	122	113
10/12/2020					19.1		
10/13/2020	40.9	0.83	5.7	86.4		125	128

Time Series

Constituent: Chloride (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	9.7							800
8/31/2016				1800	2200	2600		
11/30/2016	19			1100	2100	2800		760
2/15/2017	21							740
2/16/2017				2100	2500	3100		
5/31/2017		39					98	740
6/1/2017	12		22					
6/2/2017				3100	2500	4600		
8/2/2017		42	230				57	
8/15/2017							15	750
8/16/2017	14	41						
8/17/2017			210	2600	2700	4600		
4/4/2018			156				69	
4/5/2018		40.2						
5/8/2018			140				72.3	
5/9/2018		40.6						
6/19/2018	24.4	37.7					17.3	760
6/20/2018			27.5	1800	3100			
6/21/2018						3920		
9/25/2018							31.3	752 (D)
9/26/2018	23.4	33.4						
9/27/2018			101	1300	2510 (D)	5660 (D)		
11/6/2018			107			6520	9.8	
11/7/2018	21.8	30.7		1180	8860			665
3/6/2019					11700			
3/24/2019				717	6470	8720		744
3/25/2019	19.4	33.5	78.5				12.9	
10/15/2019			46					744
10/16/2019	21.4	33.1		941 (D)			12.2	
10/17/2019					9930	8210		
11/20/2019				1480		9810		
3/26/2020	23							
3/27/2020		32.9					14.5	675
3/28/2020			71.4	693	9190	9070		
10/12/2020							13.9	552
10/13/2020	13.5	25.7	54.4					
10/14/2020					6630	7910		
10/15/2020				1660				

Time Series

Constituent: Chloride (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	450		26				
10/25/2016				1300			
11/30/2016	310		27	400			
2/15/2017	490		30	2000			
5/31/2017	820			2500			
6/1/2017			27				
6/2/2017		11					
8/2/2017		3.2					
8/15/2017				2500			
8/16/2017	1500						
8/17/2017		12	32				
4/4/2018		13.4					
5/8/2018		13.2					
6/19/2018	5180	13.7		3050			
6/20/2018			30				
9/25/2018	7220						
9/26/2018		18.5	28.4	3965 (D)			
11/6/2018	6020			2230			
11/7/2018		20.2	25.1				
3/24/2019	7400			3960			
3/25/2019		19.7	21.8				
10/15/2019	9050	17.1					
10/16/2019			20	2181.5 (D)			
11/7/2019					2360	6170	7880
11/18/2019					6970		
11/19/2019						5650	8130
11/21/2019	8330			3890			
12/4/2019						6100	7410
12/5/2019					2130		
12/17/2019						5660	
12/18/2019					2090		7170
1/8/2020						5070	6480
1/9/2020					1750		
1/21/2020					1630	5010	6000
2/4/2020					1760	5030	5700
2/13/2020					1850	6140	7060
3/27/2020	7680	14.1	23.6	4770	1450	6870	7110
10/12/2020					1340		
10/13/2020	6230	3.8	23.3	3980		5260	5980

Time Series

Constituent: Chromium (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.01							0.0054 (J)
8/31/2016				0.0013 (J)	0.001 (J)	0.0022 (J)		
11/30/2016	<0.01			0.0012 (J)	<0.01	<0.01		0.0073 (J)
2/15/2017	<0.01							0.0045 (J)
2/16/2017				0.0012 (J)	0.0011 (J)	0.0028 (J)		
5/31/2017		<0.01					<0.01	0.0052 (J)
6/1/2017	<0.01		0.0008 (J)					
6/2/2017				<0.01	<0.01	0.0023 (J)		
8/2/2017		<0.01	0.0012 (J)				<0.01	
8/15/2017							0.0006 (J)	0.005 (J)
8/16/2017	<0.01	<0.01						
8/17/2017			0.0013 (J)	0.0007 (J)	0.0007 (J)	0.0022 (J)		
4/4/2018			<0.01				<0.01	
4/5/2018		<0.01						
5/8/2018			<0.01				<0.01	
5/9/2018		<0.01						
6/19/2018	<0.01	<0.01					<0.01	0.0047 (J)
6/20/2018			<0.01	<0.01	<0.01			
6/21/2018						<0.01		
9/25/2018							<0.01	<0.01
9/26/2018	0.0016	0.0016						
9/27/2018			<0.01	<0.01	<0.01	0.0024 (J)		
11/6/2018			0.0017 (J)			0.002 (J)	<0.01	
11/7/2018	<0.01	<0.01		<0.01	<0.01			<0.01
3/6/2019					<0.01			
3/25/2019							<0.01	
8/27/2019	0.00079 (J)		0.0018 (J)					0.0056 (J)
8/28/2019		0.0035 (J)		0.00047 (J)	0.00085 (J)	0.0024 (J)	0.00053 (J)	
10/15/2019			0.0012 (J)					0.0057 (J)
10/16/2019	<0.01	<0.01		0.00057 (J)			0.00072 (J)	
10/17/2019					0.0015 (J)	0.0019 (J)		
3/26/2020	<0.01							
3/27/2020		<0.01					<0.01	<0.01
3/28/2020			<0.01	<0.01	<0.01	<0.01		

Time Series

Constituent: Cobalt (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.005							<0.005
8/31/2016				<0.005	<0.005	<0.005		
11/30/2016	<0.005			<0.005	0.0009 (J)	0.0011 (J)		<0.005
2/15/2017	<0.005							<0.005
2/16/2017				<0.005	<0.005	<0.005		
5/31/2017		0.0005 (J)					<0.005	0.0005 (J)
6/1/2017	<0.005		<0.005					
6/2/2017				<0.005	<0.005	<0.005		
8/2/2017		0.0005 (J)	<0.005				0.0006 (J)	
8/15/2017							0.0004 (J)	0.0005 (J)
8/16/2017	<0.005	0.0005 (J)						
8/17/2017			<0.005	<0.005	0.0003 (J)	<0.005		
4/4/2018			<0.005				<0.005	
4/5/2018		<0.005						
5/8/2018			<0.005				<0.005	
5/9/2018		<0.005						
6/19/2018	<0.005	<0.005					<0.005	0.00053 (J)
6/20/2018			<0.005	<0.005	<0.005			
6/21/2018						<0.005		
9/25/2018							<0.005	<0.005
9/26/2018	0.00052	0.00052						
9/27/2018			<0.005	<0.005	<0.005	<0.005		
11/6/2018			0.0048 (J)			<0.005	<0.005	
11/7/2018	<0.005	<0.005		<0.005	<0.005			<0.005
3/6/2019					<0.005			
8/27/2019	<0.005		0.0078					0.0007 (J)
8/28/2019		0.00042 (J)		<0.005	<0.005	<0.005	<0.005	
10/15/2019			0.0085					0.00054 (J)
10/16/2019	<0.005	0.00037 (J)		<0.005			<0.005	
10/17/2019					<0.005	<0.005		
11/20/2019			0.009					
3/26/2020	<0.005							
3/27/2020		<0.005					<0.005	<0.005
3/28/2020			0.0041 (J)	<0.005	<0.005	<0.005		
10/12/2020							<0.005	<0.005
10/13/2020	<0.005	<0.005	0.0063					
10/14/2020					<0.005	<0.005		
10/15/2020				0.0019 (J)				

Time Series

Constituent: Cobalt (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	0.0006 (J)		<0.005				
10/25/2016				<0.005			
11/30/2016	<0.005		<0.005	0.0007 (J)			
2/15/2017	<0.005		<0.005	<0.005			
5/31/2017	<0.005			<0.005			
6/1/2017			<0.005				
6/2/2017		<0.005					
8/2/2017		<0.005					
8/15/2017				0.0004 (J)			
8/16/2017	<0.005						
8/17/2017		<0.005	0.0004 (J)				
4/4/2018		<0.005					
5/8/2018		<0.005					
6/19/2018	<0.005	<0.005		<0.005			
6/20/2018			<0.005				
9/25/2018	<0.005						
9/26/2018		0.00052	0.00052	0.00052			
11/6/2018	<0.005			<0.005			
11/7/2018		<0.005	<0.005				
8/26/2019	<0.005						
8/27/2019		<0.005	0.0003 (J)	<0.005			
10/15/2019	<0.005	<0.005					
10/16/2019			<0.005	<0.005			
11/7/2019					<0.005	<0.005	0.026
11/18/2019					<0.005		
11/19/2019						<0.005	0.022 (J)
12/4/2019						<0.005	0.022
12/5/2019					<0.005		
12/17/2019						<0.005	
12/18/2019					<0.005		0.031
1/8/2020						<0.005	0.035
1/9/2020					<0.005		
1/21/2020					<0.005	<0.005	0.031
2/4/2020					<0.005	<0.005	0.031 (J)
2/13/2020					<0.005	<0.005	0.031
3/27/2020	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.036
10/12/2020					<0.005		
10/13/2020	<0.005	<0.005	<0.005	<0.005		<0.005	0.032

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	0.929							1.4
8/31/2016				2.39 (D)	2.47 (D)	5.4 (D)		
11/30/2016	5.64			1.66	1.6	3.13		4.37
2/15/2017	1.41							2.21
2/16/2017				2.71	1.83	3.09		
5/31/2017		1.17 (U)					1.2	2.62
6/1/2017	1.51		1.9					
6/2/2017				1.99	2.45	7.56		
8/2/2017		0.704 (U)	5.01				1.26	
8/15/2017							0.511 (U)	2.69
8/16/2017	1.01 (U)	1.11 (U)						
8/17/2017			5.35	1.87	3.33	6.38		
4/4/2018			5.05				1.04	
4/5/2018		0.868 (U)						
5/8/2018			3.25				1.95	
5/9/2018		0.888						
6/19/2018	1.23	0.483 (U)					0.785 (U)	2.96
6/20/2018			3.53	1.95	2.84			
6/21/2018						5.24		
9/25/2018							1.15 (U)	2.23
9/26/2018	0.72 (U)	0.73 (U)						
9/27/2018			7.07	0.629 (U)	1.94	6.11		
11/6/2018			11			6.1	1.1	
11/7/2018	0.616 (U)	0.429 (U)		1.41 (U)	8.58			2.14
8/27/2019	1.2 (U)		4.4					2.91
8/28/2019		0.679 (U)		1.67	6.86	8.73	0.434 (U)	
10/15/2019			4.92					3.28
10/16/2019	1.4 (U)	0.422 (U)		1.92			0.923 (U)	
10/17/2019					7.85	7.97		
11/20/2019						9.8		
3/26/2020	1.15 (U)							
3/27/2020		0.838 (U)					0.609 (U)	2.33
3/28/2020			4.16	1.44 (U)	11 (U)	11.7		
10/12/2020							2.7	2.66
10/13/2020	0.855 (U)	0.56 (U)	3.71					
10/14/2020					8.97	13.1		
10/15/2020				2.56				

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	1.31		0.977 (U)				
10/25/2016				2.22			
11/30/2016	0.438 (U)		0.994	2.01			
2/15/2017	0.3 (U)		1.65	1.56			
5/31/2017	1.77			1.92			
6/1/2017			1.22				
6/2/2017		1.47					
8/2/2017		1.99					
8/15/2017				2.47			
8/16/2017	2.26						
8/17/2017		2.03	1.71				
4/4/2018		1.96					
5/8/2018		1.69					
6/19/2018	5.39	1.83		2.82			
6/20/2018			1.78				
9/25/2018	6.22						
9/26/2018		0.637 (U)	1.56	3.15 (D)			
11/6/2018	5.38			2.95			
11/7/2018		0.894 (U)	0.651 (U)				
8/26/2019	7.68						
8/27/2019		2.33	1.03 (U)	5.82			
10/15/2019	8.7	0.979 (U)					
10/16/2019			1.86	7.5			
11/7/2019					14.8	17.7	38.2
11/18/2019					13.9		
11/19/2019						18.9	43.1
11/21/2019	7.34			8.89			
12/4/2019						18.6	45.1
12/5/2019					14.2		
12/17/2019						21.8	
12/18/2019					17		55.8
1/8/2020						16.9	46.5
1/9/2020					12.3		
1/21/2020					11.7	15.6	37.7
2/4/2020					12.7	22.38	47.9
2/13/2020					18.2	31.1	76.3 (o)
3/27/2020	9.63	1.84	1.51	9.54	10.2	22.8	47.2
10/12/2020					8.83		
10/13/2020	7.43	3.32	1.71	7.75		14.1	30.3

Time Series

Constituent: Fluoride (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	0.03 (J)							1.5
8/31/2016				0.93	0.41	0.92		
11/30/2016	0.04 (J)			0.93	0.61	0.99		1.4
2/15/2017	0.007 (J)							1.3
2/16/2017				0.6	0.3 (J)	0.54		
5/31/2017		0.01 (J)					0.85	1.2
6/1/2017	<0.1		<0.1					
6/2/2017				0.34	0.19 (J)	0.42		
8/2/2017		0.14 (J)	0.27 (J)				0.69	
8/15/2017							0.29 (J)	1.2
8/16/2017	0.03 (J)	0.13 (J)						
8/17/2017			0.18 (J)	0.52	0.26 (J)	0.27 (J)		
4/4/2018			<0.1				0.32	
4/5/2018		<0.1						
5/8/2018			0.56				0.63	
5/9/2018		<0.1						
6/19/2018	<0.1	0.065 (J)					0.17 (J)	0.91
6/20/2018			0.033 (J)	0.5	0.22 (J)			
6/21/2018						0.28 (J)		
9/25/2018							0.15 (J)	1.1
9/26/2018	0.12 (J)	0.029						
9/27/2018			0.12 (J)	0.32	0.068 (J)	0.32 (D)		
11/6/2018			<0.1			0.086 (J)	<0.1	
11/7/2018	<0.1	<0.1		0.35	10.3 (o)			<0.1
3/6/2019					<0.1			
3/24/2019				0.32	0.19 (J)	0.14 (J)		0.99
3/25/2019	0.038 (J)	0.039 (J)	0.055 (J)				0.12 (J)	
8/27/2019	<0.1		<0.1					1.1
8/28/2019		<0.1		0.36	<0.1	<0.1	0.068 (J)	
10/15/2019			0.095 (J)					1
10/16/2019	0.046 (JD)	0.044 (JD)		0.41			0.1 (J)	
10/17/2019					<0.1	<0.1		
11/20/2019				0.34		<0.1		
3/26/2020	<0.1							
3/27/2020		<0.1					0.066 (J)	1.1
3/28/2020			<0.1	0.34	<0.1	<0.1		
10/12/2020							<0.1	1.2
10/13/2020	<0.1	<0.1	<0.1					
10/14/2020					<0.1	<0.1		
10/15/2020				0.22				

Time Series

Constituent: Fluoride (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	0.5		0.04 (J)				
10/25/2016				1.1			
11/30/2016	0.49		0.18 (J)	1.3			
2/15/2017	0.58		0.02 (J)	1.3			
5/31/2017	0.56			1.3			
6/1/2017			0.005 (J)				
6/2/2017		<0.1					
8/2/2017		0.05 (J)					
8/15/2017				1.2			
8/16/2017	0.45						
8/17/2017		<0.1	0.04 (J)				
4/4/2018		<0.1					
5/8/2018		<0.1					
6/19/2018	<0.1	0.057 (J)		0.6			
6/20/2018			0.038 (J)				
9/25/2018	<0.1						
9/26/2018		0.029	0.029	0.44 (D)			
11/6/2018	0.084 (J)			0.4			
11/7/2018		<0.1	<0.1				
3/24/2019	0.14 (J)			0.31			
3/25/2019		0.036 (J)	0.041 (J)				
8/26/2019	<0.1						
8/27/2019		<0.1	<0.1	<0.1			
10/15/2019	<0.1	0.14 (J)					
10/16/2019			0.044 (J)	0.083 (J)			
11/7/2019					0.49	<0.1	1.4
11/18/2019					0.52		
11/19/2019						0.033 (J)	1.2
11/21/2019	<0.1			<0.1			
12/4/2019						0.22 (J)	1.4
12/5/2019					0.5		
12/17/2019						<0.1	
12/18/2019					0.33		1.5
1/8/2020						<0.1	<0.1
1/9/2020					0.12 (J)		
1/21/2020					0.13 (J)	0.11 (J)	0.53
2/4/2020					0.18 (J)	<0.1	<0.1
2/13/2020					0.077 (J)	<0.1	<0.1
3/27/2020	<0.1	<0.1	<0.1	<0.1	0.06 (J)	<0.1	<0.1
10/12/2020					0.34		
10/13/2020	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1

Time Series

Constituent: Lead (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.005							0.0001 (J)
8/31/2016				<0.005	<0.005	<0.005		
11/30/2016	<0.005			0.0002 (J)	<0.005	<0.005		<0.005
2/15/2017	<0.005							<0.005
2/16/2017				<0.005	<0.005	0.0002 (J)		
5/31/2017		<0.005					<0.005	9E-05 (J)
6/1/2017	<0.005		<0.005					
6/2/2017				<0.005	<0.005	<0.005		
8/2/2017		0.0001 (J)	<0.005				<0.005	
8/15/2017							<0.005	<0.005
8/16/2017	<0.005	<0.005						
8/17/2017			<0.005	<0.005	<0.005	8E-05 (J)		
4/4/2018			<0.005				<0.005	
4/5/2018		<0.005						
5/8/2018			<0.005				<0.005	
5/9/2018		<0.005						
6/19/2018	<0.005	<0.005					<0.005	<0.005
6/20/2018			<0.005	<0.005	<0.005			
6/21/2018						<0.005		
9/25/2018							<0.005	<0.005
9/26/2018	0.00027	0.00027						
9/27/2018			<0.005	<0.005	<0.005	<0.005		
11/6/2018			<0.005			<0.005	<0.005	
11/7/2018	<0.005	<0.005		<0.005	<0.005			<0.005
3/6/2019					<0.005			
3/25/2019							<0.005	
8/27/2019	<0.005		<0.005					0.00022 (J)
8/28/2019		<0.005		<0.005	<0.005	0.0001 (J)	<0.005	
10/15/2019			<0.005					5.6E-05 (J)
10/16/2019	<0.005	<0.005		<0.005			<0.005	
10/17/2019					0.00012 (J)	<0.005		
3/26/2020	<0.005							
3/27/2020		<0.005					<0.005	<0.005
3/28/2020			<0.005	<0.005	<0.005	<0.005		
10/12/2020							<0.005	<0.005
10/13/2020	<0.005	<0.005	<0.005					
10/14/2020					<0.005	<0.005		
10/15/2020				<0.005				

Time Series

Constituent: Lead (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	<0.005		<0.005				
10/25/2016				<0.005			
11/30/2016	<0.005		0.0002 (J)	<0.005			
2/15/2017	<0.005		<0.005	<0.005			
5/31/2017	<0.005			<0.005			
6/1/2017			<0.005				
6/2/2017		<0.005					
8/2/2017		0.0001 (J)					
8/15/2017				0.0002 (J)			
8/16/2017	8E-05 (J)						
8/17/2017		0.0001 (J)	<0.005				
4/4/2018		<0.005					
5/8/2018		<0.005					
6/19/2018	<0.005	<0.005		<0.005			
6/20/2018			<0.005				
9/25/2018	<0.005						
9/26/2018		0.00027	0.00027	0.00027			
11/6/2018	<0.005			<0.005			
11/7/2018		<0.005	<0.005				
8/26/2019	<0.005						
8/27/2019		0.00011 (J)	<0.005	0.00014 (J)			
10/15/2019	<0.005	0.00038 (J)					
10/16/2019			<0.005	0.00034 (J)			
11/7/2019					<0.005	0.00063 (J)	0.0019 (J)
11/18/2019					<0.005		
11/19/2019						<0.005	0.0013 (J)
12/4/2019						5.3E-05 (J)	0.00045 (J)
12/5/2019					<0.005		
12/17/2019						<0.005	
12/18/2019					<0.005		0.00023 (J)
1/8/2020						<0.005	0.00029 (J)
1/9/2020					<0.005		
1/21/2020					<0.005	<0.005	0.00033 (J)
2/4/2020					<0.005	<0.005	<0.005
2/13/2020					<0.005	<0.025 (o)	0.00023 (J)
3/27/2020	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
10/12/2020					<0.005		
10/13/2020	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005

Time Series

Constituent: Lithium (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.03							0.0102 (J)
8/31/2016				0.0219 (J)	0.0389 (J)	0.0122 (J)		
11/30/2016	<0.03			0.0333 (J)	0.0303 (J)	0.011 (J)		0.0106 (J)
2/15/2017	<0.03							0.0115 (J)
2/16/2017				0.0376 (J)	0.05 (J)	0.0142 (J)		
5/31/2017		<0.03					0.0047 (J)	0.011 (J)
6/1/2017	<0.03		<0.03					
6/2/2017				0.0346 (J)	0.0477 (J)	0.0229 (J)		
8/2/2017		<0.03	<0.03				0.0036 (J)	
8/15/2017							<0.03	0.0123 (J)
8/16/2017	<0.03	<0.03						
8/17/2017			<0.03	0.0367 (J)	0.0645	0.0241 (J)		
4/4/2018			0.0013 (J)				0.0041 (J)	
4/5/2018		<0.03						
5/8/2018			0.0012 (J)				0.0052 (J)	
5/9/2018		<0.03						
6/19/2018	<0.03	<0.03					0.0017 (J)	0.012 (J)
6/20/2018			0.0015 (J)	0.034 (J)	0.066 (J)			
6/21/2018						0.03 (J)		
9/25/2018							0.0018 (J)	0.011 (J)
9/26/2018	0.00097	0.00097						
9/27/2018			0.0021 (J)	0.023 (J)	0.045 (J)	0.034 (J)		
11/6/2018			0.0038 (J)			0.037 (J)	<0.03	
11/7/2018	<0.03	<0.03		0.022 (J)	0.11			0.013 (J)
3/6/2019					0.12			
8/27/2019	<0.03		0.002 (J)					0.012 (J)
8/28/2019		<0.03		0.023 (J)	0.13	0.12	0.00082 (J)	
10/15/2019			0.0019 (J)					0.012 (J)
10/16/2019	<0.03	<0.03		0.021 (J)			<0.03	
10/17/2019					0.12	0.096		
11/20/2019						0.12		
3/26/2020	<0.03							
3/27/2020		<0.03					<0.03	<0.03
3/28/2020			<0.03	0.014 (J)	0.064	0.027 (J)		
10/12/2020							<0.03	0.011 (J)
10/13/2020	<0.03	<0.03	<0.03					
10/14/2020					0.11	0.039 (J)		
10/15/2020				0.57				

Time Series

Constituent: Lithium (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	0.0112 (J)		<0.03				
10/25/2016				0.007 (J)			
11/30/2016	<0.03		<0.03	0.0086 (J)			
2/15/2017	0.0105 (J)		<0.03	0.0149 (J)			
5/31/2017	0.0106 (J)			0.019 (J)			
6/1/2017			<0.03				
6/2/2017		<0.03					
8/2/2017		<0.03					
8/15/2017				0.016 (J)			
8/16/2017	0.0145 (J)						
8/17/2017		<0.03	<0.03				
4/4/2018		0.0015 (J)					
5/8/2018		0.0014 (J)					
6/19/2018	0.044 (J)	0.0016 (J)		0.021 (J)			
6/20/2018			<0.03				
9/25/2018	0.041 (J)						
9/26/2018		0.0018 (J)	0.00097	0.02 (J)			
11/6/2018	0.047 (J)			0.017 (J)			
11/7/2018		<0.03	<0.03				
8/26/2019	0.059						
8/27/2019		0.002 (J)	<0.03	0.023 (J)			
10/15/2019	0.056 (J)	0.0016 (J)					
10/16/2019			<0.03	0.024 (J)			
11/7/2019					0.0055 (J)	0.015 (J)	0.026 (J)
11/18/2019					<0.1 (o)		
11/19/2019						0.02 (J)	0.023 (J)
11/21/2019	0.052						
12/4/2019						0.016 (J)	0.019 (J)
12/5/2019					0.0042 (J)		
12/17/2019						0.018 (J)	
12/18/2019					0.0045 (J)		0.02 (J)
1/8/2020						0.022 (J)	0.024 (J)
1/9/2020					0.0041 (J)		
1/21/2020					<0.15 (o)	0.018 (J)	0.022 (J)
2/4/2020					<0.3 (o)	0.02 (J)	0.024 (J)
2/13/2020					0.004 (J)	0.018 (J)	0.021 (J)
3/27/2020	0.052	<0.03	<0.03	0.033 (J)	<0.03	0.018 (J)	0.024 (J)
10/12/2020					<0.03		
10/13/2020	0.046 (J)	<0.03	<0.03	0.028 (J)		0.022 (J)	0.025 (J)

Time Series

Constituent: Mercury (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.0005							<0.0005
8/31/2016				<0.0005	<0.0005	<0.0005		
11/30/2016	<0.0005			<0.0005	<0.0005	<0.0005		<0.0005
2/15/2017	<0.0005							<0.0005
2/16/2017				<0.0005	<0.0005	<0.0005		
5/31/2017		<0.0005					<0.0005	<0.0005
6/1/2017	<0.0005		<0.0005					
6/2/2017				4.2E-05 (J)	<0.0005	<0.0005		
8/2/2017		<0.0005	<0.0005				<0.0005	
8/15/2017							<0.0005	<0.0005
8/16/2017	<0.0005	<0.0005						
8/17/2017			<0.0005	<0.0005	<0.0005	<0.0005		
4/4/2018			<0.0005				<0.0005	
4/5/2018		<0.0005						
5/8/2018			<0.0005				<0.0005	
5/9/2018		<0.0005						
6/19/2018	<0.0005	<0.0005					<0.0005	<0.0005
6/20/2018			<0.0005	<0.0005	<0.0005			
6/21/2018						<0.0005		
9/25/2018							<0.0005	<0.0005
9/26/2018	3.6E-05	3.6E-05						
9/27/2018			<0.0005	<0.0005	<0.0005	<0.0005		
11/6/2018			0.00071			0.00067	0.0007	
11/7/2018	<0.0005	<0.0005		<0.0005	<0.0005			<0.0005
3/6/2019					<0.0005			
8/27/2019	<0.0005		<0.0005					<0.0005
8/28/2019		<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	
3/26/2020	<0.0005							
3/27/2020		<0.0005					<0.0005	<0.0005
3/28/2020			<0.0005	<0.0005	<0.0005	<0.0005		

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.01							<0.01
8/31/2016				<0.01	<0.01	<0.01		
11/30/2016	<0.01			<0.01	<0.01	<0.01		<0.01
2/15/2017	<0.01							<0.01
2/16/2017				<0.01	<0.01	<0.01		
5/31/2017		<0.01					<0.01	<0.01
6/1/2017	<0.01		<0.01					
6/2/2017				<0.01	<0.01	<0.01		
8/2/2017		<0.01	<0.01				<0.01	
8/15/2017							<0.01	<0.01
8/16/2017	<0.01	<0.01						
8/17/2017			<0.01	0.0012 (J)	0.0025 (J)	<0.01		
4/4/2018			<0.01				<0.01	
4/5/2018		<0.01						
5/8/2018			<0.01				<0.01	
5/9/2018		<0.01						
6/19/2018	<0.01	<0.01					<0.01	<0.01
6/20/2018			<0.01	<0.01	<0.01			
6/21/2018						<0.01		
9/25/2018							<0.01	<0.01
9/26/2018	0.0019	0.0019						
9/27/2018			<0.01	<0.01	<0.01	<0.01		
11/6/2018			<0.01			<0.01	<0.01	
11/7/2018	<0.01	<0.01		<0.01	0.0024 (J)			<0.01 (D)
3/6/2019					<0.01			
8/27/2019	<0.01		<0.01					<0.01
8/28/2019		<0.01		<0.01	0.0017 (J)	<0.01	<0.01	
10/15/2019			<0.01					<0.01
10/16/2019	<0.01	<0.01		<0.01			<0.01	
10/17/2019					0.0017 (J)	<0.01		
3/26/2020	<0.01							
3/27/2020		<0.01					<0.01	<0.01
3/28/2020			<0.01	<0.01	<0.01	<0.01		

Time Series

Constituent: pH (S.U.) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	5.66							6.49
8/31/2016				6.93	7.21	6.66		
11/30/2016	5.36			6.77	7.23	6.69		6.5
2/15/2017	5.25							6.51
2/16/2017				6.89	7.27	6.72		
5/31/2017		5.06					5.29	6.45
6/1/2017	5.59		5.68					
6/2/2017				6.83	7.18	6.53		
8/2/2017		5	5.2				5.19	
8/15/2017							5.19	6.41
8/16/2017	5.58	4.98						
8/17/2017			5.31	6.76	7.15	6.28		
4/4/2018			4.74				5.19	
4/5/2018		5.02						
5/8/2018			4.78				5.3	
5/9/2018		4.96						
6/19/2018	5.51	5.02					5.15	6.32
6/20/2018			4.79	6.83	7.19			
6/21/2018						6.45		
9/25/2018							5.13	6.31
9/26/2018	5.32	5.06						
9/27/2018			5.14	6.64	7.21	6.48		
11/6/2018			4.9			6.18	5.08	
11/7/2018	5.72	5.03		6.6	6.91			6.3
3/24/2019				6.1	6.98	6.38		6.4
3/25/2019	5.75	5.08	4.93				5.05	
8/27/2019	5.58		5.05					6.24
8/28/2019		4.99		6.69	6.87	6.35	4.87	
10/15/2019			4.89					6.19
10/16/2019	5.72	4.98		6.64			5.05	
10/17/2019					6.86	6.4		
11/19/2019		5.11						
11/20/2019	5.77		5.03	6.58		6.27		
3/26/2020	5.45							
3/27/2020		5.12					5.09	6.33
3/28/2020			5.27	6.6	6.8	6.35		
10/12/2020							5	6.35
10/13/2020	5.69	5.03	5.25					
10/14/2020					6.93	6.32		
10/15/2020				6.53				

Time Series

Constituent: pH (S.U.) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	7.04		5.18				
10/25/2016				6.95			
11/30/2016	7.13		4.96	6.95			
2/15/2017	7.02		5.13	6.85			
5/31/2017	7			6.96			
6/1/2017			4.99				
6/2/2017		5.31					
8/2/2017		5.05					
8/15/2017				6.99			
8/16/2017	6.88						
8/17/2017		5.52	4.68				
4/4/2018		5.45					
5/8/2018		5.54					
6/19/2018	6.78	5.6		6.91			
6/20/2018			4.77				
9/25/2018	6.75						
9/26/2018		5.17	4.65	6.81			
11/6/2018	6.92			5.99			
11/7/2018		5.47	4.99				
3/24/2019	6.59	5.4		6.62			
3/25/2019			5.13				
8/26/2019	6.62						
8/27/2019		5.35	4.88	6.23			
10/15/2019	6.58	5.32					
10/16/2019			4.89	6.54			
11/7/2019					4.25	5.21	3.79
11/18/2019					4.12		
11/19/2019						5.15	3.78
11/21/2019	6.67			6.44			
12/4/2019						5.28 (D)	3.87 (D)
12/5/2019					4.17 (D)		
1/8/2020						5.04	3.77
1/9/2020					4.19		
1/21/2020					4.28	5.1	3.73
2/4/2020					4.26	5.15	3.72
2/13/2020					4.2	5.07	3.75
3/27/2020	6.59	5.3	5.12	6.93	4.34	5.14	3.81
10/12/2020					4.29		
10/13/2020	6.56	5.02	5.17	6.34		5.04	3.72

Time Series

Constituent: Selenium (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.01							0.0011 (J)
8/31/2016				0.002 (J)	0.0015 (J)	0.0021 (J)		
11/30/2016	0.0011 (J)			0.0023 (J)	0.0054 (J)	<0.01		0.0023 (J)
2/15/2017	<0.01							0.0021 (J)
2/16/2017				0.002 (J)	0.0022 (J)	0.0025 (J)		
5/31/2017		<0.01					<0.01	<0.01
6/1/2017	<0.01		<0.01					
6/2/2017				<0.01	<0.01	<0.01		
8/2/2017		<0.01	<0.01				<0.01	
8/15/2017							<0.01	0.0021 (J)
8/16/2017	<0.01	<0.01						
8/17/2017			<0.01	<0.01	0.002 (J)	0.0033 (J)		
4/4/2018			<0.01				<0.01	
4/5/2018		<0.01						
5/8/2018			<0.01				<0.01	
5/9/2018		<0.01						
6/19/2018	<0.01	<0.01					<0.01	0.0017 (J)
6/20/2018			<0.01	<0.01	<0.01			
6/21/2018						<0.01		
9/25/2018							<0.01	0.002 (J)
9/26/2018	0.0014	0.0014						
9/27/2018			<0.01	<0.01	<0.01	0.0023 (J)		
11/6/2018			0.0025 (J)			0.0048 (J)	<0.01	
11/7/2018	<0.01	<0.01		<0.01	0.0075 (J)			<0.01
3/6/2019					0.0024 (J)			
3/25/2019							<0.01	
8/27/2019	<0.01		<0.01					0.0019 (J)
8/28/2019		<0.01		<0.01	0.0014 (J)	0.0019 (J)	<0.01	
10/15/2019			<0.01					<0.01
10/16/2019	<0.01	<0.01		<0.01			<0.01	
10/17/2019					0.0066 (J)	0.0049 (J)		
3/26/2020	<0.01							
3/27/2020		<0.01					<0.01	<0.01
3/28/2020			<0.01	<0.01	<0.01	<0.01		
10/12/2020							<0.01	<0.01
10/13/2020	<0.01	<0.01	<0.01					
10/14/2020					<0.01	<0.01		
10/15/2020				0.0028 (J)				

Time Series

Constituent: Selenium (mg/L) Analysis Run 12/10/2020 3:17 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	<0.01		<0.01				
10/25/2016				0.003 (J)			
11/30/2016	<0.01		0.0011 (J)	0.0087 (J)			
2/15/2017	0.0014 (J)		<0.01	0.0067 (J)			
5/31/2017	<0.01			0.0018 (J)			
6/1/2017			<0.01				
6/2/2017		<0.01					
8/2/2017		<0.01					
8/15/2017				0.0025 (J)			
8/16/2017	0.0018 (J)						
8/17/2017		<0.01	<0.01				
4/4/2018		<0.01					
5/8/2018		0.0016 (J)					
6/19/2018	<0.01	0.0022 (J)		<0.01			
6/20/2018			<0.01				
9/25/2018	0.0019 (J)						
9/26/2018		0.0015 (J)	0.0014	0.0016 (J)			
11/6/2018	0.0057 (J)			<0.01			
11/7/2018		<0.01	<0.01				
8/26/2019	0.0025 (J)						
8/27/2019		0.0018 (J)	<0.01	0.0018 (J)			
10/15/2019	0.003 (J)	<0.01					
10/16/2019			<0.01	<0.01			
11/7/2019					0.036	0.063	0.12
11/18/2019					<0.01		
11/19/2019						0.039 (J)	0.047 (J)
12/4/2019						0.12	0.11
12/5/2019					0.032		
12/17/2019						0.031 (J)	
12/18/2019					0.01		0.032 (J)
1/8/2020						0.066	0.044 (J)
1/9/2020					0.01		
1/21/2020					0.023 (J)	0.13	0.089
2/4/2020					0.017 (J)	0.065 (J)	0.049 (J)
2/13/2020					0.015	0.15	0.11
3/27/2020	<0.01	<0.01	<0.01	<0.01	0.0034 (J)	0.013	0.012
10/12/2020					<0.01		
10/13/2020	<0.01	<0.01	<0.01	<0.01		0.0076 (J)	0.0056 (J)

Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	17							4.3
8/31/2016				37	21	290		
11/30/2016	33			63	19	240		7.6
2/15/2017	83							3
2/16/2017				90	22	220		
5/31/2017		46					40	2.5
6/1/2017	51		42					
6/2/2017				210	28	500		
8/2/2017		43	120				34	
8/15/2017							24	3.2
8/16/2017	36	41						
8/17/2017			110	80	69	510		
4/4/2018			70.6				33.9	
4/5/2018		33.4						
5/8/2018			61.4				35.7	
5/9/2018		36						
6/19/2018	50.3	35.5					23.7	1.6
6/20/2018			25.3	46 (J)	33			
6/21/2018						481		
9/25/2018							25.6	1
9/26/2018	54.1	39.6						
9/27/2018			63.4	58.5 (J)	29.4 (D)	777 (D)		
11/6/2018			136			926	25.2	
11/7/2018	45.6	35.8		41.3 (J)	734			0.41 (J)
3/6/2019					1220 (J)			
3/24/2019				131	413	1070		1.5
3/25/2019	43	34.2	137				24.9	
10/15/2019			105					0.54 (J)
10/16/2019	31.9	24.4		122.5 (D)			17.4	
10/17/2019					507	1230		
11/20/2019				132		1550		
3/26/2020	36.2							
3/27/2020		28.6					23.4	<1
3/28/2020			86.6	63.8	701	1090		
10/12/2020							19.3	<1
10/13/2020	32.3	27.6	92.3					
10/14/2020					510	904		
10/15/2020				147				

Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	6.4		24				
10/25/2016				84			
11/30/2016	4.5		26	52			
2/15/2017	37		30	190			
5/31/2017	61			260			
6/1/2017			24				
6/2/2017		13					
8/2/2017		14					
8/15/2017				210			
8/16/2017	130						
8/17/2017		14	26				
4/4/2018		13.4					
5/8/2018		14.8					
6/19/2018	498	15.5		218			
6/20/2018			31.2				
9/25/2018	790						
9/26/2018		23	36.8	333 (D)			
11/6/2018	875			182			
11/7/2018		22.2	35				
3/24/2019	1170			413			
3/25/2019		22.4	40.1				
10/15/2019	<1	17.9					
10/16/2019			28.5	312.5 (D)			
11/7/2019					379	832	1010
11/18/2019					737		
11/19/2019						795	1140
11/21/2019	1070			428			
12/4/2019						810	1020
12/5/2019					351		
12/17/2019						535	
12/18/2019							8.1
1/8/2020						603	747
1/9/2020					254		
1/21/2020					254	611	798
2/4/2020					432	599	1120
2/13/2020					300	761	833
3/27/2020	899	14.6	31.2	504	219	836	700
10/12/2020					191		
10/13/2020	695	7.6	26.8	378		609	638

Time Series

Constituent: Thallium (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	<0.001							<0.001
8/31/2016				<0.001	<0.001	<0.001		
11/30/2016	<0.001			<0.001	<0.001	<0.001		<0.001
2/15/2017	<0.001							<0.001
2/16/2017				<0.001	<0.001	<0.001		
5/31/2017		<0.001					<0.001	<0.001
6/1/2017	<0.001		<0.001					
6/2/2017				<0.001	<0.001	<0.001		
8/2/2017		<0.001	<0.001				<0.001	
8/15/2017							<0.001	<0.001
8/16/2017	<0.001	<0.001						
8/17/2017			<0.001	<0.001	<0.001	<0.001		
4/4/2018			<0.001				<0.001	
4/5/2018		<0.001						
5/8/2018			<0.001				<0.001	
5/9/2018		<0.001						
6/19/2018	<0.001	<0.001					<0.001	<0.001
6/20/2018			<0.001	<0.001	<0.001			
6/21/2018						<0.001		
9/25/2018							<0.001	<0.001
9/26/2018	0.00014	0.00014						
9/27/2018			<0.001	<0.001	<0.001	<0.001		
11/6/2018			<0.001			<0.001	<0.001	
11/7/2018	<0.001	<0.001		<0.001	<0.001			<0.001
3/6/2019					<0.001			
8/27/2019	<0.001		<0.001					<0.001
8/28/2019		<0.001		<0.001	<0.001	<0.001	<0.001	
10/15/2019			<0.001					<0.001
10/16/2019	<0.001	<0.001		<0.001			<0.001	
10/17/2019					7.6E-05 (J)	<0.001		
3/26/2020	<0.001							
3/27/2020		<0.001					<0.001	<0.001
3/28/2020			<0.001	<0.001	<0.001	<0.001		

Time Series

Constituent: Total Dissolved Solids [TDS] (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-11 (bg)	MCM-12
8/30/2016	86							1910
8/31/2016				3620	4160	5100		
11/30/2016	131			4030	3950	4680		1910
2/15/2017	212							1870
2/16/2017				4080	4600	5080		
5/31/2017		123					257	1920
6/1/2017	103		97					
6/2/2017				5560	4470	8000		
8/2/2017		136	538				183	
8/15/2017							90	1840
8/16/2017	65	124						
8/17/2017			445	4620	5450	8320		
4/4/2018			365				197	
4/5/2018		128						
5/8/2018			304				225	
5/9/2018		127						
6/19/2018	142	143					112	1820
6/20/2018			114	3370	4940			
6/21/2018						7500		
9/25/2018							137	1760
9/26/2018	133	132						
9/27/2018			255	2360	4480	10200		
11/6/2018			388			11000	89	
11/7/2018	121	134		2230	15100			1800
3/6/2019					19000			
3/24/2019				1450	13700	13700		1770
3/25/2019	116	111	327				74	
10/15/2019			237					1730
10/16/2019	104	96		2860			82	
10/17/2019					16100	13200		
11/20/2019				2640		16700		
3/26/2020	114							
3/27/2020		119					87	1970
3/28/2020			284	1470	18800	18300		
10/12/2020							94	1560
10/13/2020	113	118	<25					
10/14/2020					15200	18400		
10/15/2020				5100				

Time Series

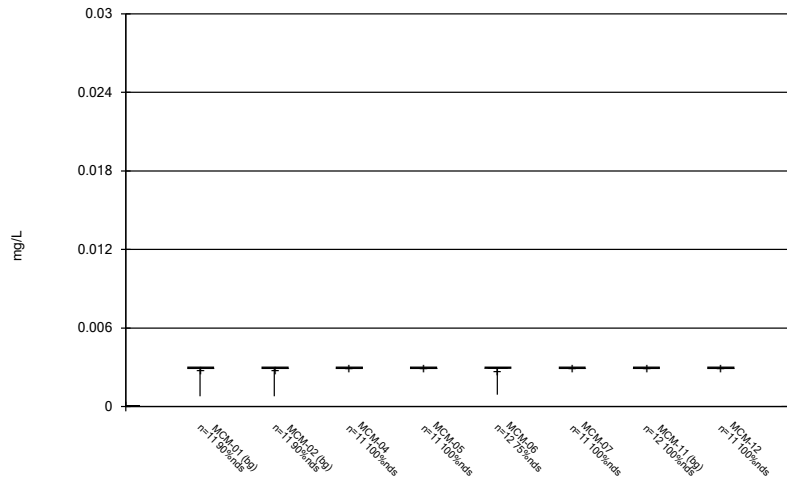
Constituent: Total Dissolved Solids [TDS] (mg/L) Analysis Run 12/10/2020 3:17 PM

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	1310		99				
10/25/2016				2900			
11/30/2016	1050		111	3970			
2/15/2017	1440		170	3820			
5/31/2017	1740			5050			
6/1/2017			98				
6/2/2017		69					
8/2/2017		35					
8/15/2017				4820			
8/16/2017	3010						
8/17/2017		51	84				
4/4/2018		90					
5/8/2018		89					
6/19/2018	8630	110		5640			
6/20/2018			123				
9/25/2018	10700						
9/26/2018		124	117	6770 (D)			
11/6/2018	11100			4160			
11/7/2018		125	120				
3/24/2019	14200			6840			
3/25/2019		98	101				
10/15/2019	15400	107					
10/16/2019			95	7740			
11/7/2019					4140	10900	13500
11/18/2019					4030		
11/19/2019						10000	13300
11/21/2019	15800			7720			
12/4/2019						11000	13200
12/5/2019					3840		
12/17/2019						9860	
12/18/2019					3880		12500
1/8/2020						9760	12300
1/9/2020					3520		
1/21/2020					3280	10100	12000
2/4/2020					3220	10600	12300
2/13/2020					3580	10900	12400
3/27/2020	16400	110	110	10200	3090	14300	14600
10/12/2020					2920		
10/13/2020	15600	63	115	8750		6600	13900

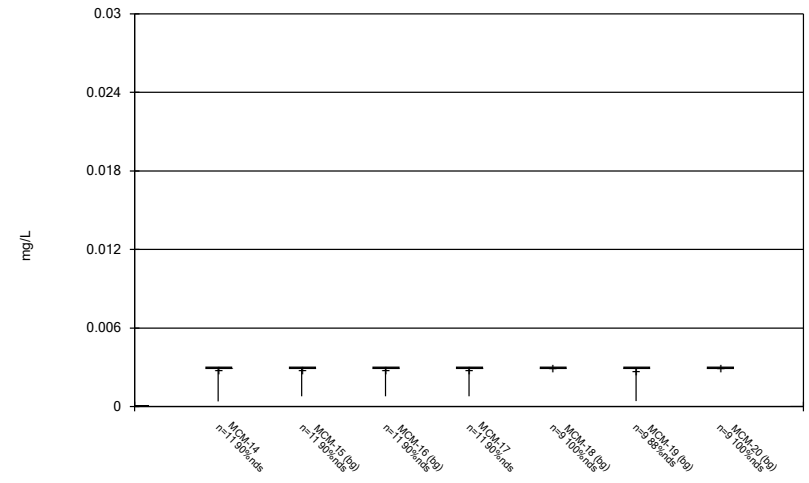
FIGURE B.

Box & Whiskers Plot



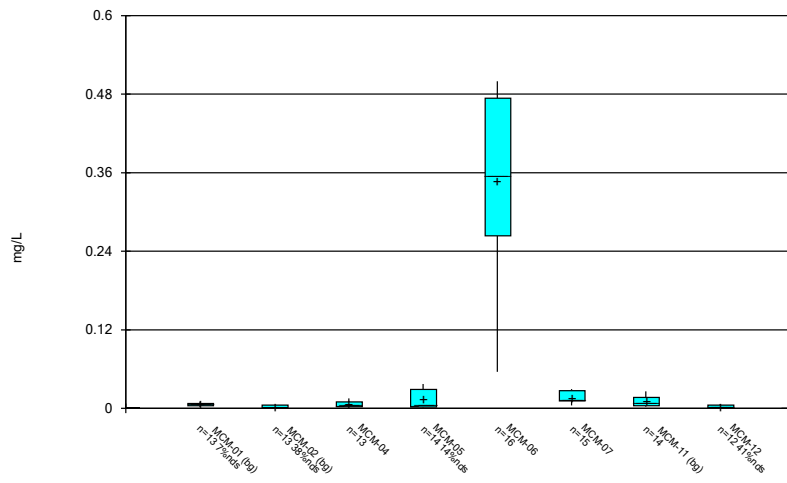
Constituent: Antimony Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



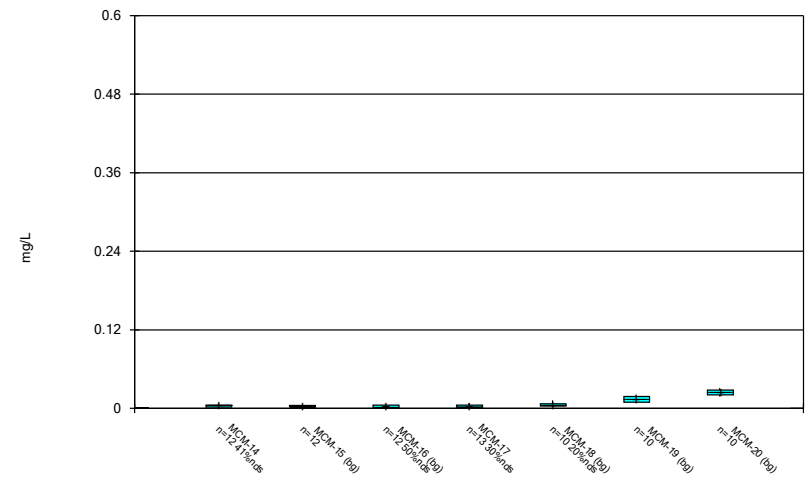
Constituent: Antimony Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



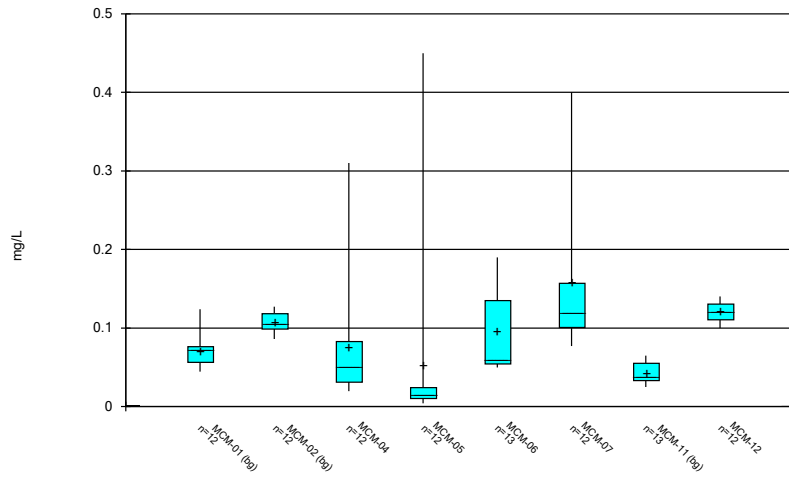
Constituent: Arsenic Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



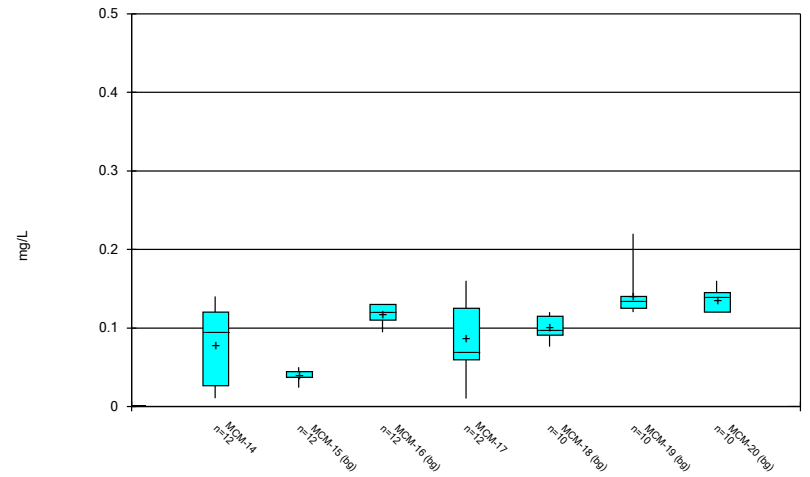
Constituent: Arsenic Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



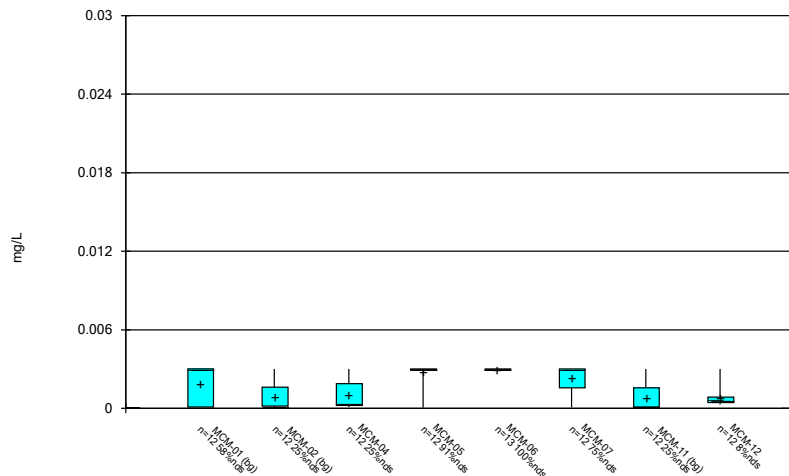
Constituent: Barium Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



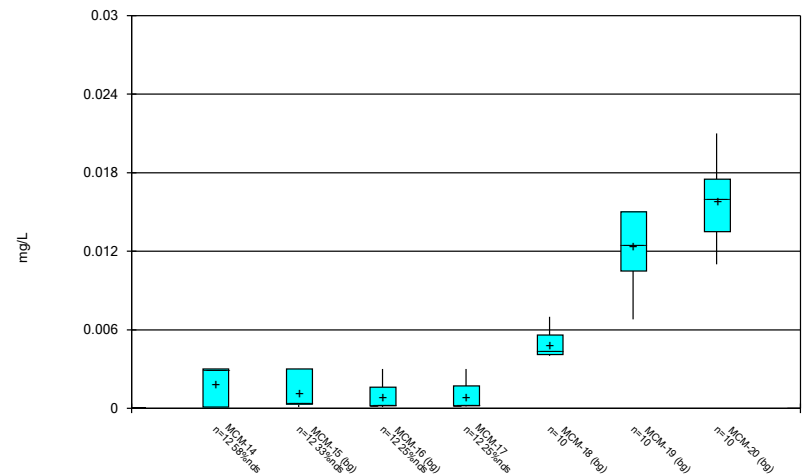
Constituent: Barium Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



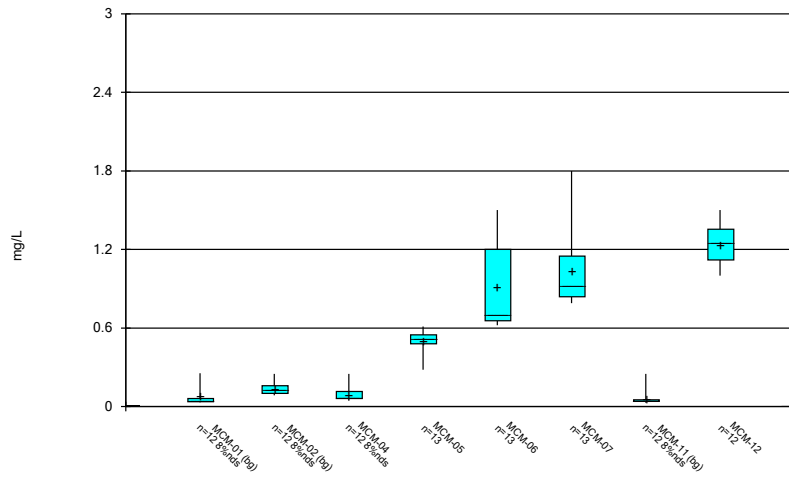
Constituent: Beryllium Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



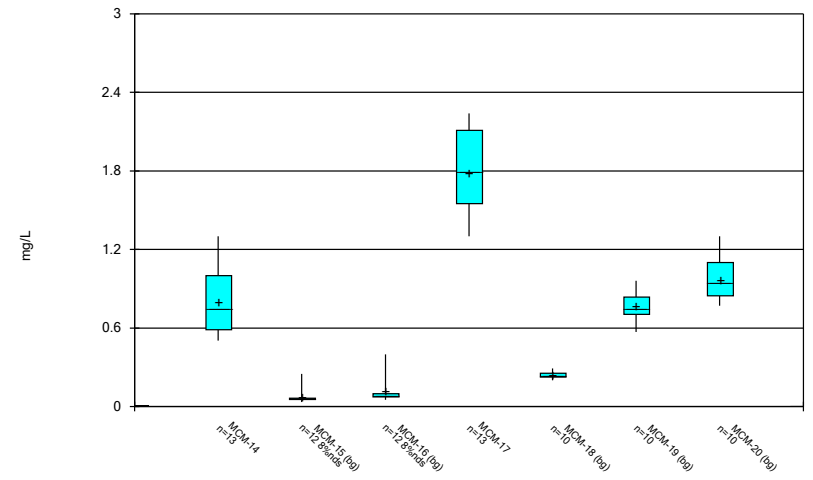
Constituent: Beryllium Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



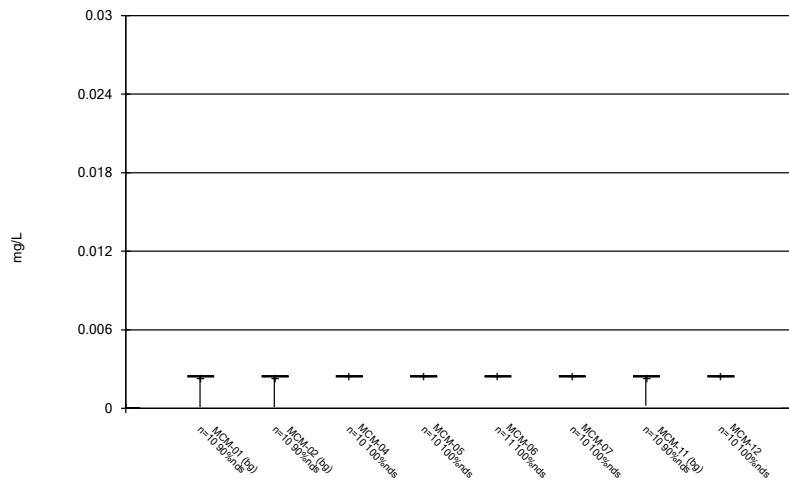
Constituent: Boron Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



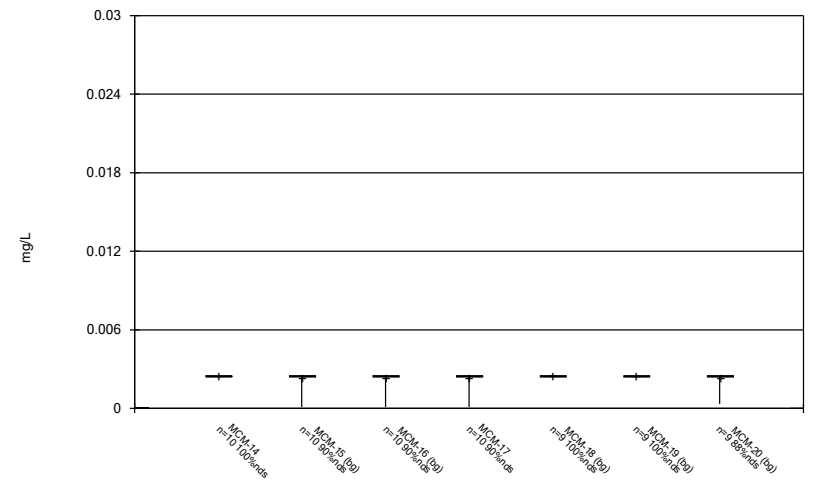
Constituent: Boron Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



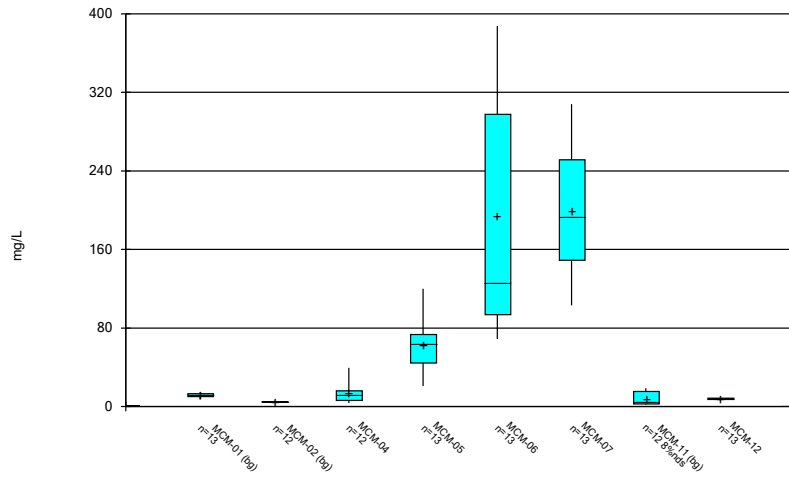
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



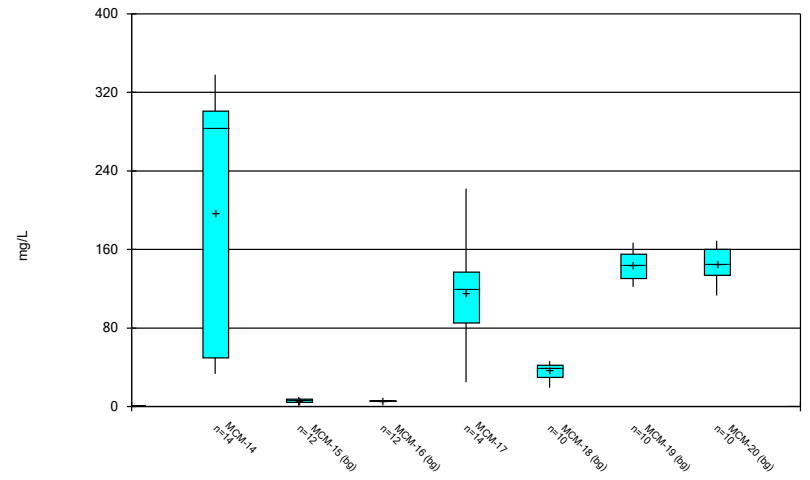
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



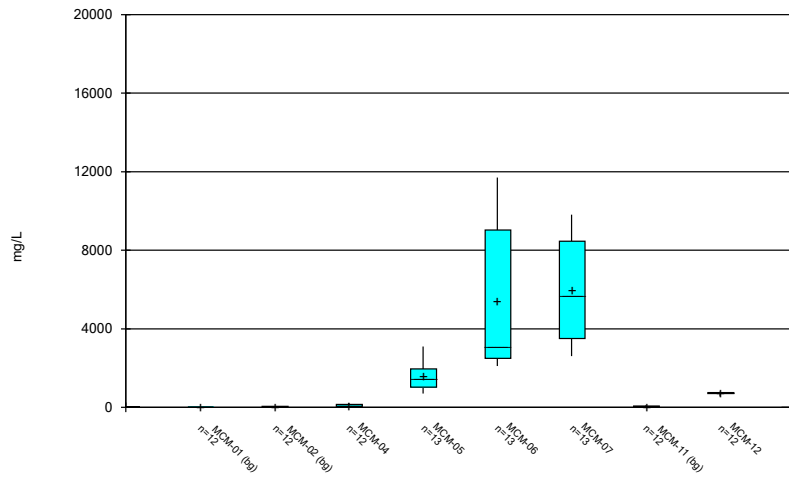
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



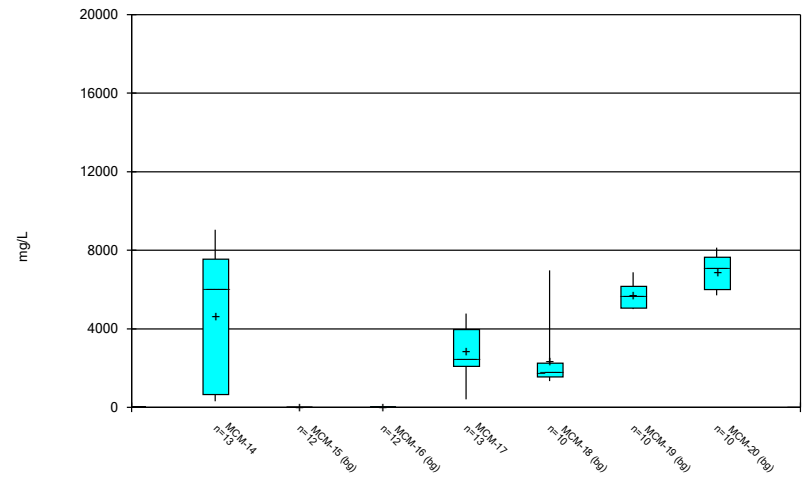
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



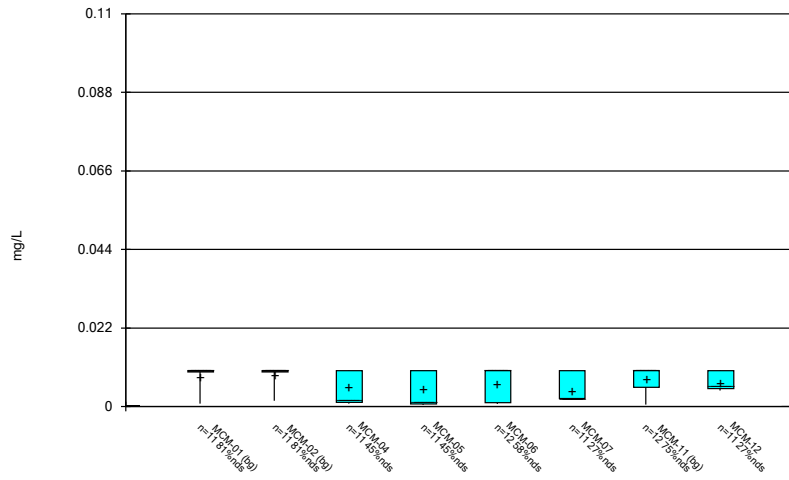
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



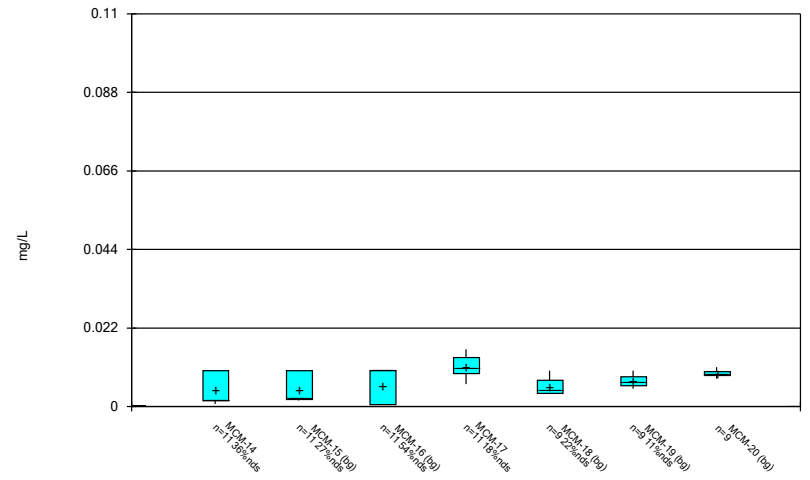
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Box & Whiskers Plot



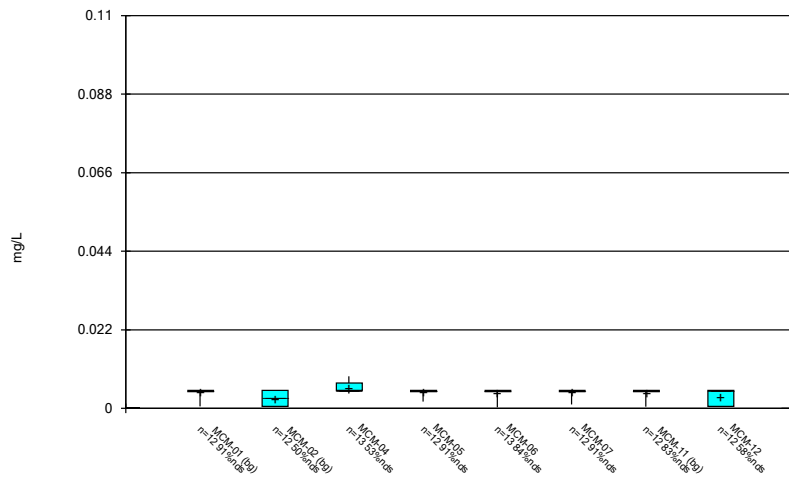
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



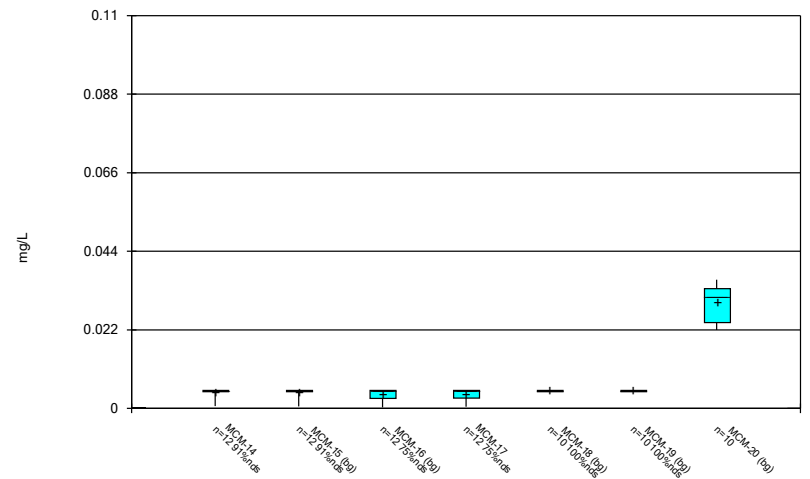
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



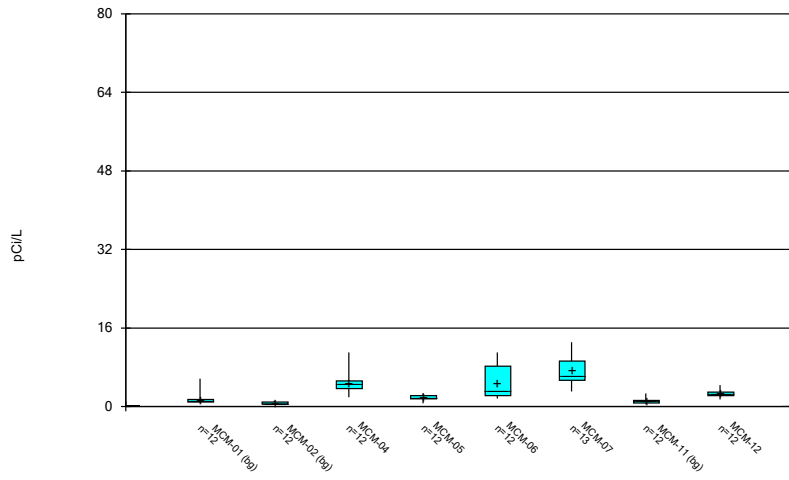
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



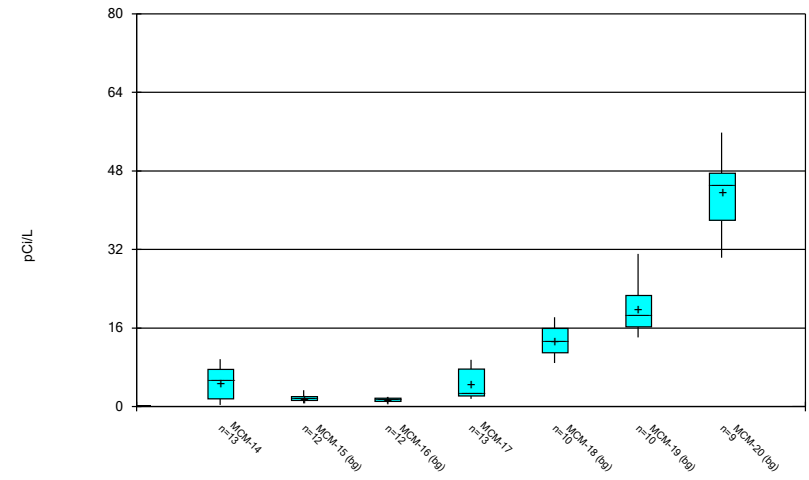
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



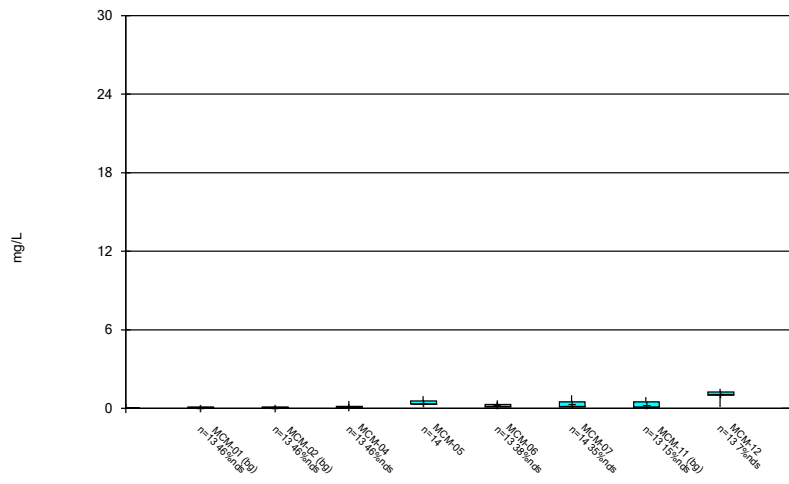
Constituent: Combined Radium 226 + 228 Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



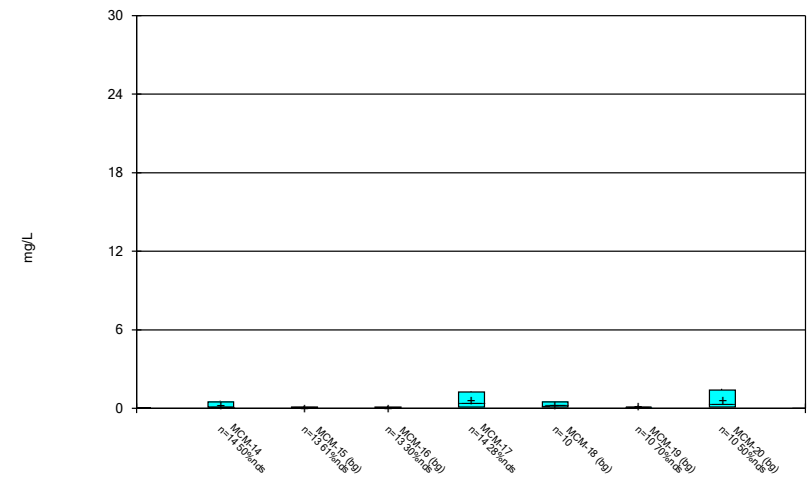
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



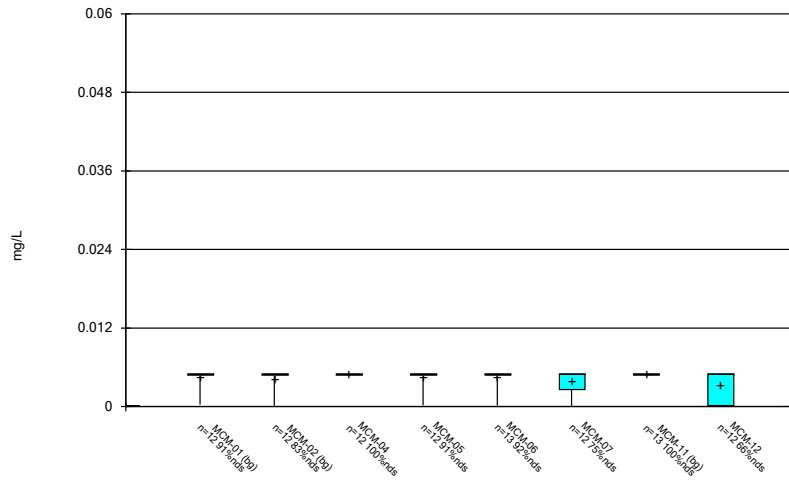
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



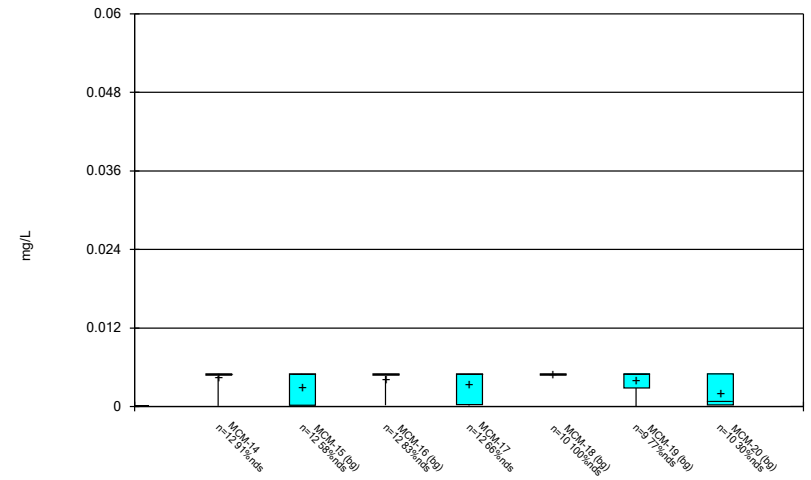
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



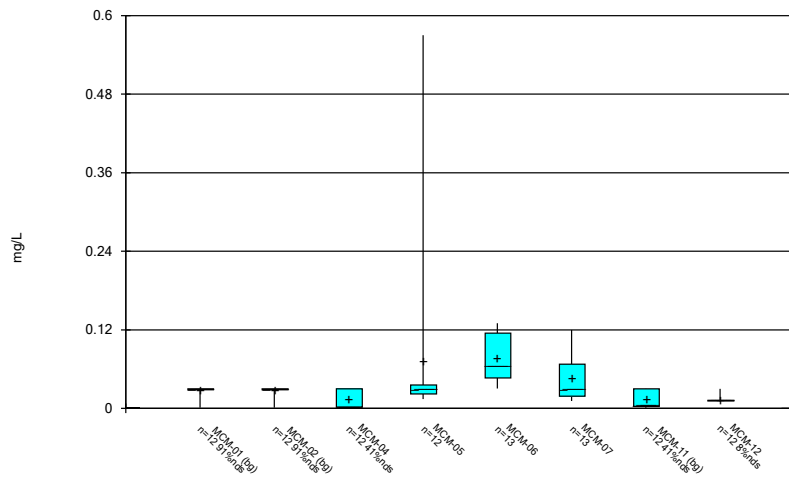
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



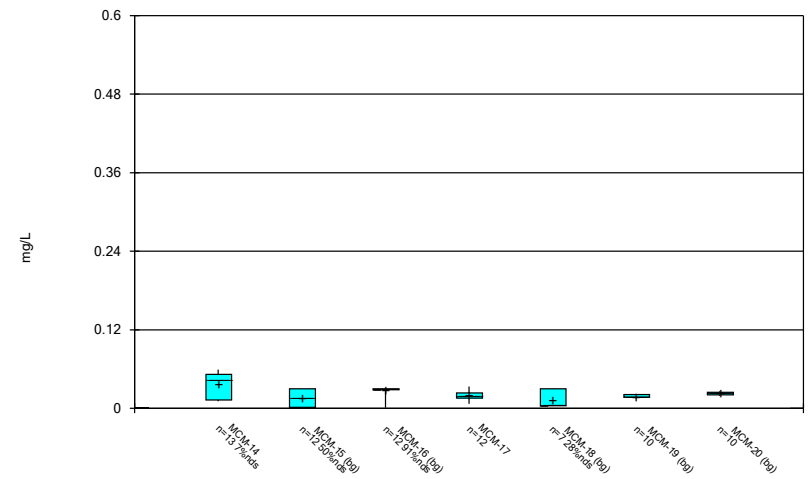
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



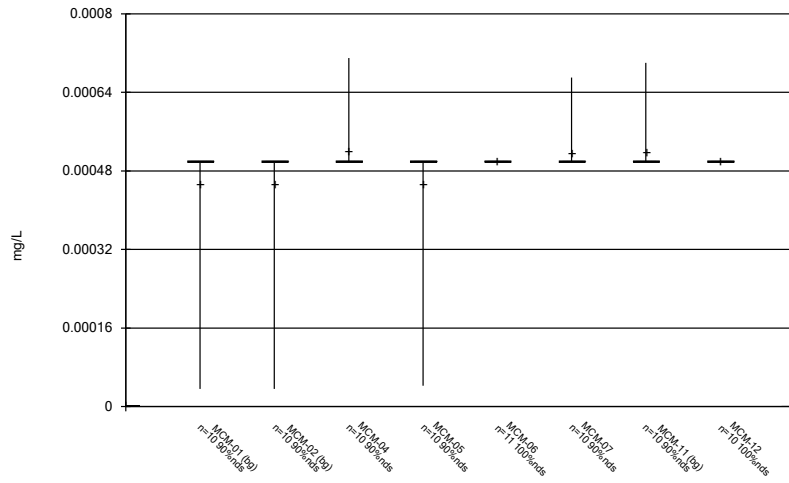
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



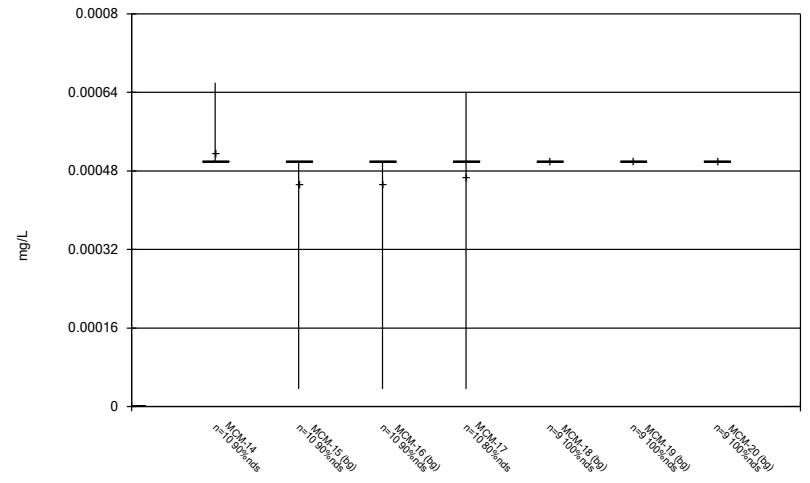
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



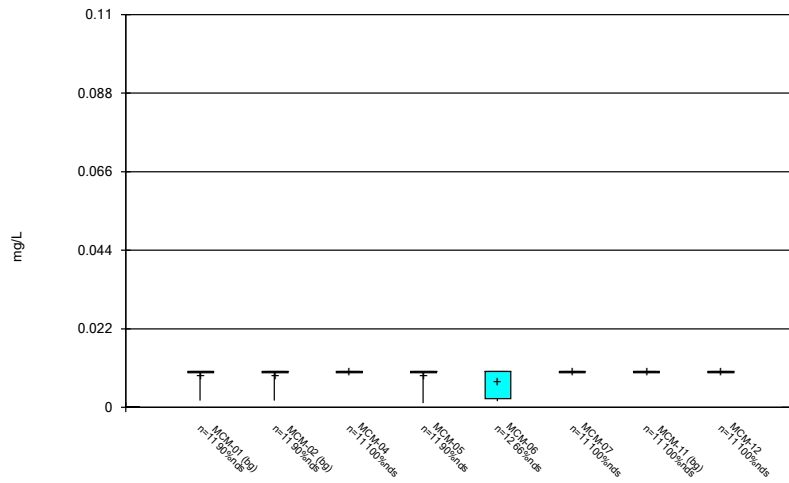
Constituent: Mercury Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



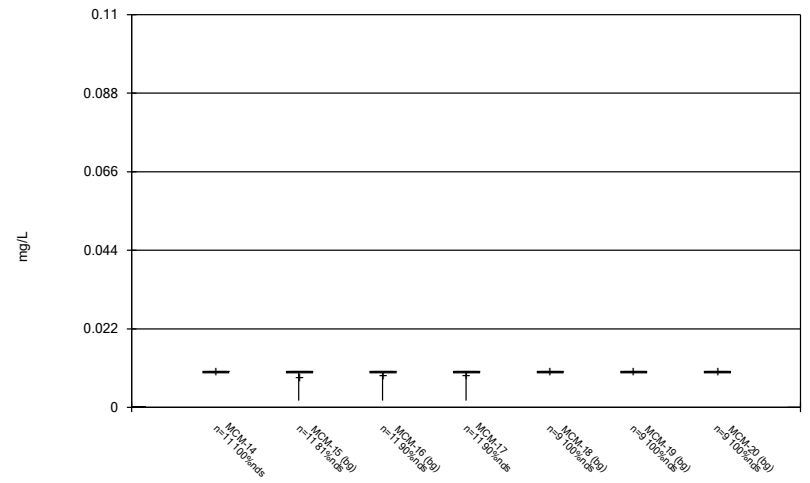
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



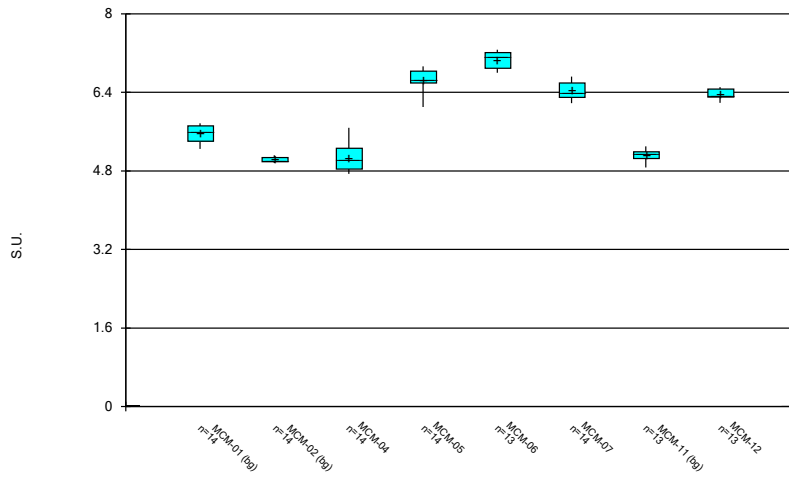
Constituent: Molybdenum Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



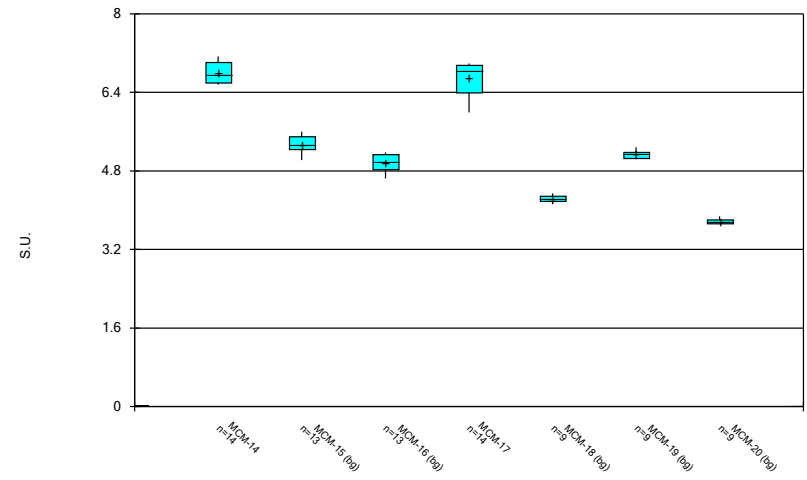
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



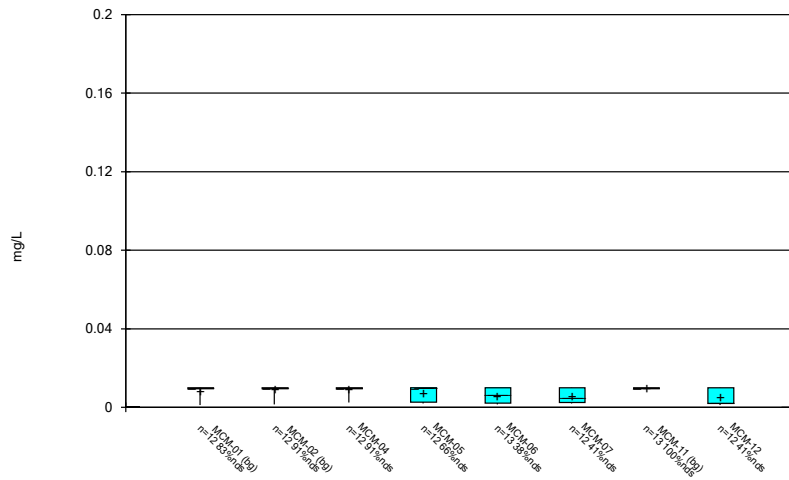
Constituent: pH Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



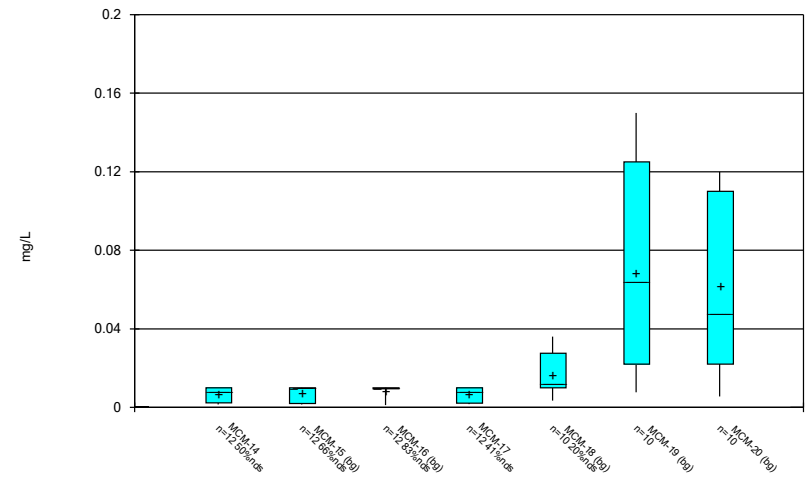
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



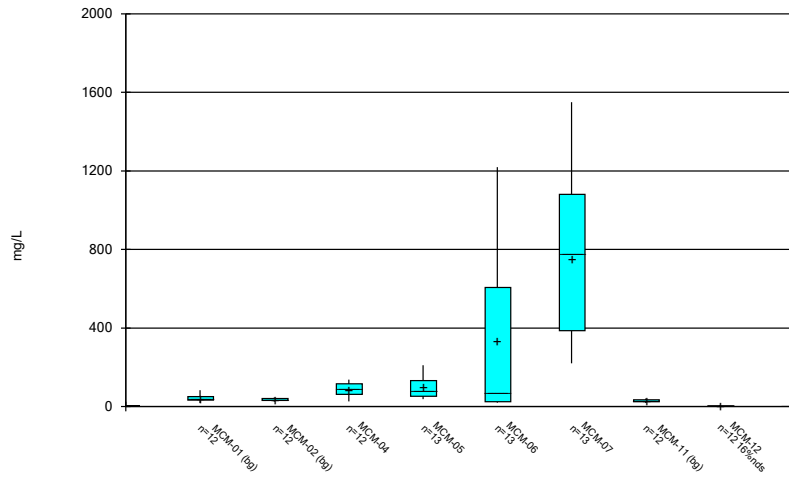
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



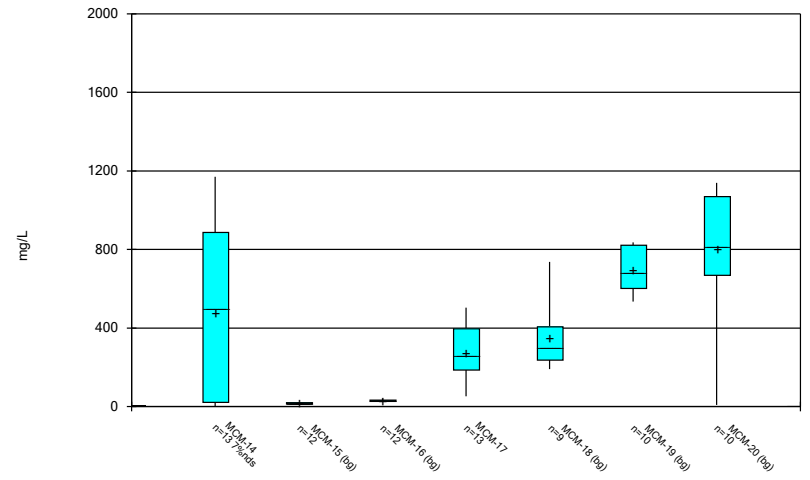
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



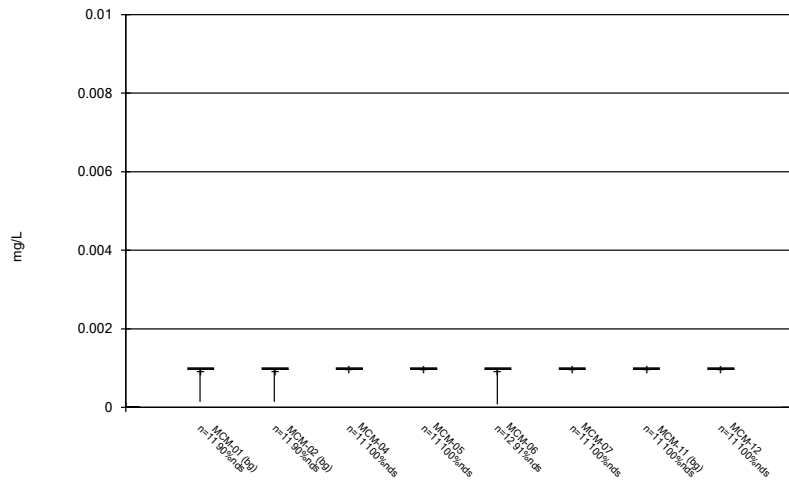
Constituent: Sulfate Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



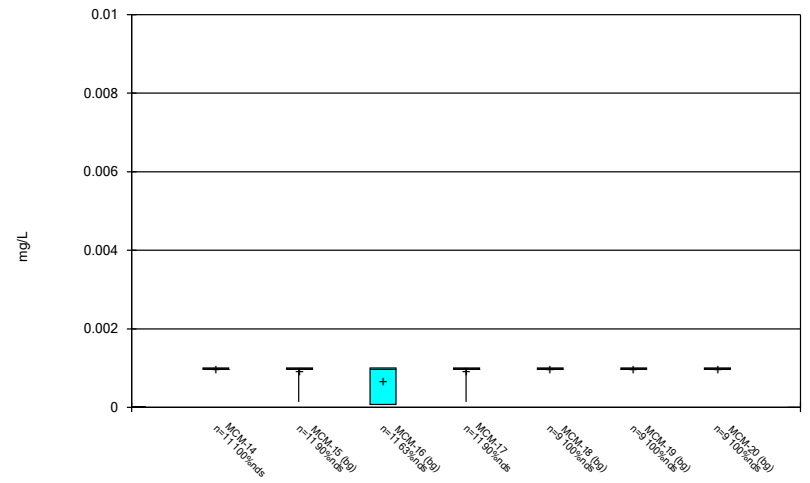
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



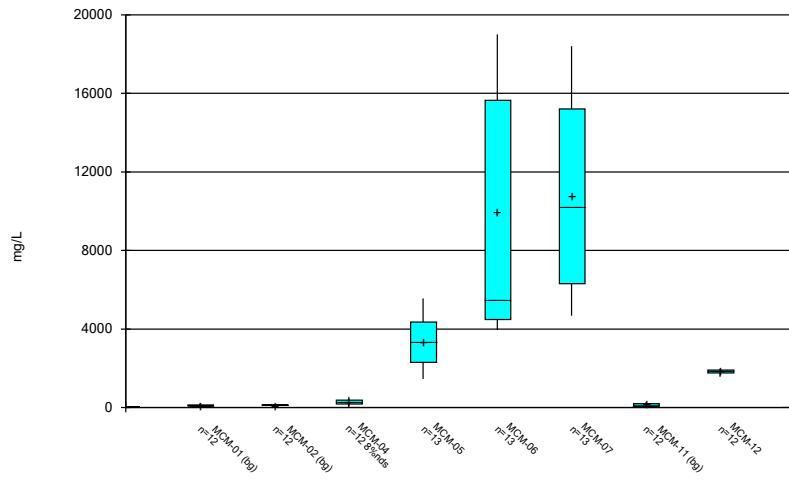
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



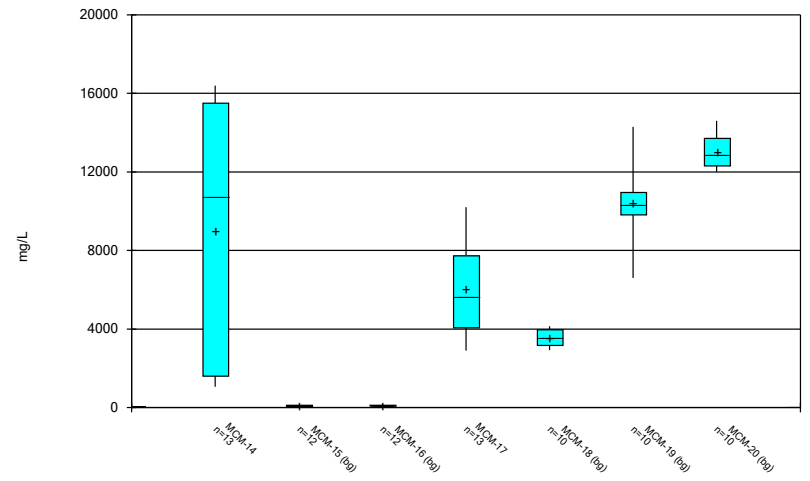
Constituent: Thallium Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:23 PM
 Plant McManus Client: Southern Company Data: McManus Ash Pond

FIGURE C.

Outlier Summary

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:26 PM

	MCM-20 Combined Radium 226 + 228 (pCi/L)	MCM-06 Fluoride (mg/L)	MCM-19 Lead (mg/L)	MCM-18 Lithium (mg/L)
11/7/2018		10.3 (o)		
11/18/2019			<0.1 (o)	
1/21/2020			<0.15 (o)	
2/4/2020			<0.3 (o)	
2/13/2020	76.3 (o)		<0.025 (o)	

FIGURE D.

Appendix III - Interwell Prediction Limits - Significant Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:32 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MCM-06	1.3	n/a	10/14/2020	1.5	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-07	1.3	n/a	10/14/2020	1.8	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-17	1.3	n/a	10/13/2020	1.8	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-06	169	n/a	10/14/2020	245	Yes	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-07	169	n/a	10/14/2020	207	Yes	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-05	5.77	3.72	10/15/2020	6.53	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-06	5.77	3.72	10/14/2020	6.93	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-07	5.77	3.72	10/14/2020	6.32	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-12	5.77	3.72	10/12/2020	6.35	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-14	5.77	3.72	10/13/2020	6.56	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-17	5.77	3.72	10/13/2020	6.34	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-06	14600	n/a	10/14/2020	15200	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-07	14600	n/a	10/14/2020	18400	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-14	14600	n/a	10/13/2020	15600	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2

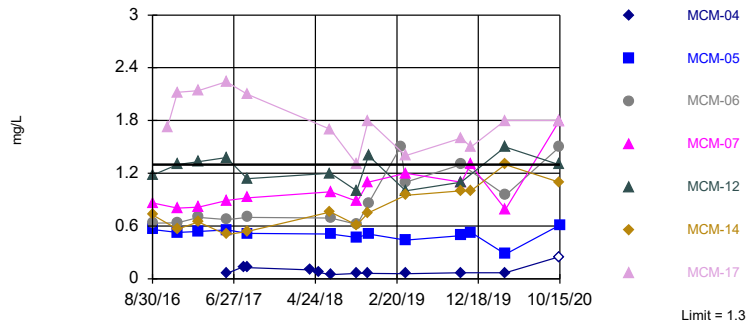
Appendix III - Interwell Prediction Limits - All Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:32 PM

Constituent	Well	Upper Lim	Lower Lim	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MCM-04	1.3	n/a	10/13/2020	0.25ND	No	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-05	1.3	n/a	10/15/2020	0.61	No	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-06	1.3	n/a	10/14/2020	1.5	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-07	1.3	n/a	10/14/2020	1.8	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-12	1.3	n/a	10/12/2020	1.3	No	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-14	1.3	n/a	10/13/2020	1.1	No	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-17	1.3	n/a	10/13/2020	1.8	Yes	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-04	169	n/a	10/13/2020	12.5	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-05	169	n/a	10/15/2020	69.1	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-06	169	n/a	10/14/2020	245	Yes	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-07	169	n/a	10/14/2020	207	Yes	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-12	169	n/a	10/12/2020	6.1	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-14	169	n/a	10/13/2020	40.9	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-17	169	n/a	10/13/2020	86.4	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-04	8130	n/a	10/13/2020	54.4	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-05	8130	n/a	10/15/2020	1660	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-06	8130	n/a	10/14/2020	6630	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-07	8130	n/a	10/14/2020	7910	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-12	8130	n/a	10/12/2020	552	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-14	8130	n/a	10/13/2020	6230	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-17	8130	n/a	10/13/2020	3980	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-04	1.5	n/a	10/13/2020	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-05	1.5	n/a	10/15/2020	0.22	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-06	1.5	n/a	10/14/2020	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-07	1.5	n/a	10/14/2020	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-12	1.5	n/a	10/12/2020	1.2	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-14	1.5	n/a	10/13/2020	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-17	1.5	n/a	10/13/2020	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-04	5.77	3.72	10/13/2020	5.25	No	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-05	5.77	3.72	10/15/2020	6.53	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-06	5.77	3.72	10/14/2020	6.93	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-07	5.77	3.72	10/14/2020	6.32	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-12	5.77	3.72	10/12/2020	6.35	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-14	5.77	3.72	10/13/2020	6.56	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-17	5.77	3.72	10/13/2020	6.34	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-04	1140	n/a	10/13/2020	92.3	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-05	1140	n/a	10/15/2020	147	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-06	1140	n/a	10/14/2020	510	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-07	1140	n/a	10/14/2020	904	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-12	1140	n/a	10/12/2020	0.5ND	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-14	1140	n/a	10/13/2020	695	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-17	1140	n/a	10/13/2020	378	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-04	14600	n/a	10/13/2020	12.5ND	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-05	14600	n/a	10/15/2020	5100	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-06	14600	n/a	10/14/2020	15200	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-07	14600	n/a	10/14/2020	18400	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-12	14600	n/a	10/12/2020	1560	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-14	14600	n/a	10/13/2020	15600	Yes	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-17	14600	n/a	10/13/2020	8750	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2

Exceeds Limit: MCM-06, MCM-07, MCM-17

Prediction Limit
Interwell Non-parametric

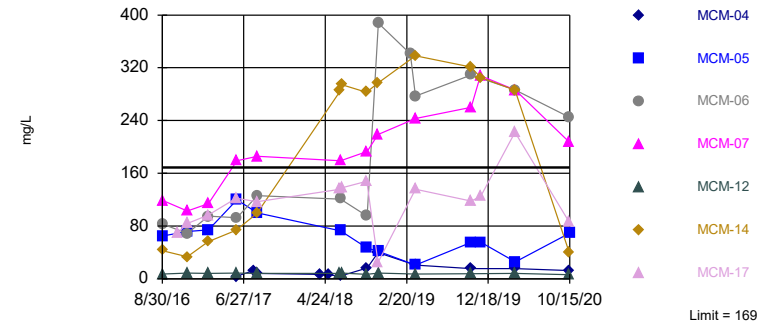


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 90 background values. 5.556% NDs. Annual per-constituent alpha = 0.003314. Individual comparison alpha = 0.0002371 (1 of 2). Comparing 7 points to limit.

Constituent: Boron Analysis Run 12/10/2020 3:27 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

Exceeds Limit: MCM-06, MCM-07

Prediction Limit
Interwell Non-parametric

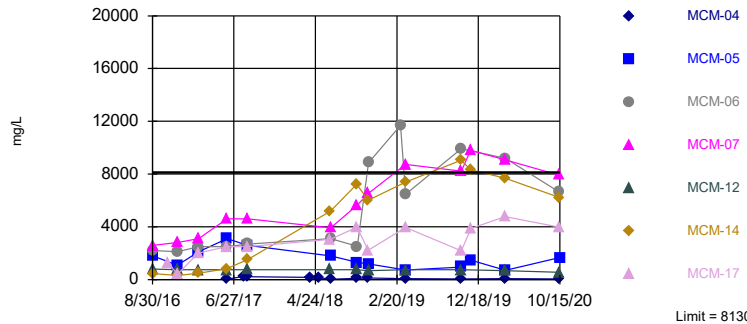


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 91 background values. 1.099% NDs. Annual per-constituent alpha = 0.003253. Individual comparison alpha = 0.0002327 (1 of 2). Comparing 7 points to limit.

Constituent: Calcium Analysis Run 12/10/2020 3:27 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

Within Limit

Prediction Limit
Interwell Non-parametric

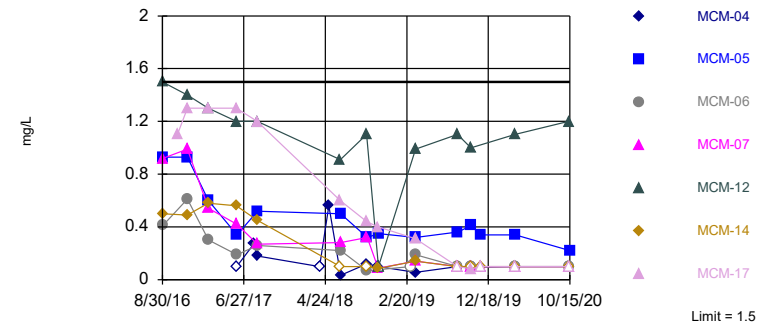


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 90 background values. Annual per-constituent alpha = 0.003314. Individual comparison alpha = 0.0002371 (1 of 2). Comparing 7 points to limit.

Constituent: Chloride Analysis Run 12/10/2020 3:27 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

Within Limit

Prediction Limit
Interwell Non-parametric

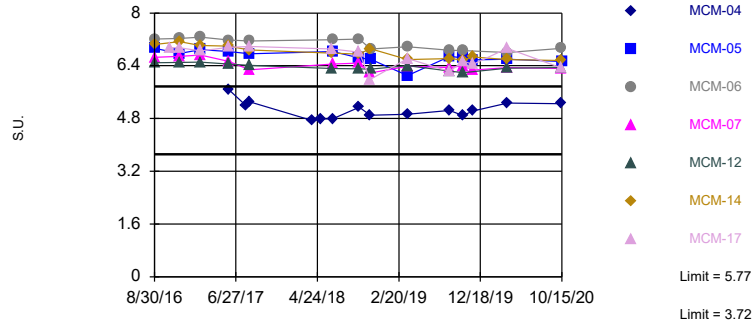


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 95 background values. 40% NDs. Annual per-constituent alpha = 0.003006. Individual comparison alpha = 0.000215 (1 of 2). Comparing 7 points to limit.

Constituent: Fluoride Analysis Run 12/10/2020 3:27 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

Exceeds Limits: MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, MCM-17

Prediction Limit
Interwell Non-parametric



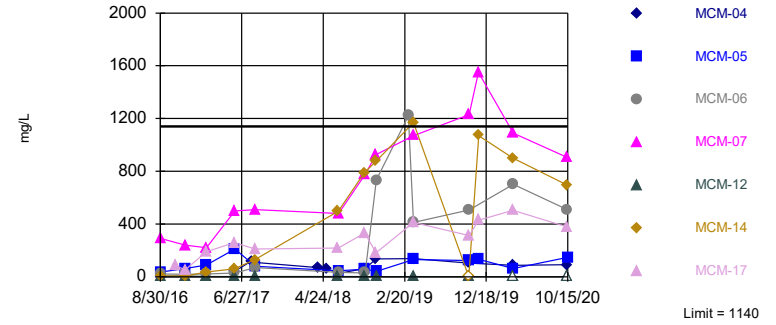
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 94 background values. Annual per-constituent alpha = 0.006135. Individual comparison alpha = 0.0004389 (1 of 2). Comparing 7 points to limit.

Constituent: pH Analysis Run 12/10/2020 3:27 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

Hollow symbols indicate censored values.

Within Limit

Prediction Limit
Interwell Non-parametric



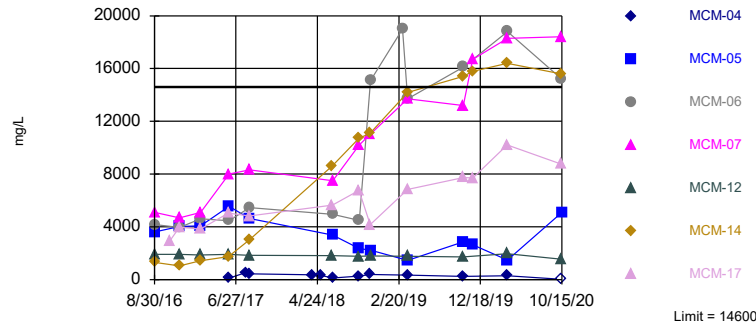
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 89 background values. Annual per-constituent alpha = 0.0034. Individual comparison alpha = 0.0002432 (1 of 2). Comparing 7 points to limit.

Constituent: Sulfate Analysis Run 12/10/2020 3:27 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

Hollow symbols indicate censored values.

Exceeds Limit: MCM-06, MCM-07, MCM-14

Prediction Limit
Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 90 background values. Annual per-constituent alpha = 0.003314. Individual comparison alpha = 0.0002371 (1 of 2). Comparing 7 points to limit.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:27 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-12	MCM-14	MCM-16 (bg)	MCM-06	MCM-07	MCM-05	MCM-17	MCM-02 (bg)
8/30/2016	0.0325 (J)	1.18	0.726	0.0972 (J)					
8/31/2016					0.632	0.863	0.56		
10/25/2016								1.73	
11/30/2016	0.0334 (J)	1.3	0.565	0.0964	0.637	0.804	0.529	2.12	
2/15/2017	0.254	1.33	0.647	0.398				2.14	
2/16/2017					0.698	0.815	0.539		
5/31/2017		1.38	0.503					2.24	0.161
6/1/2017	0.0564			0.0776					
6/2/2017					0.674	0.891	0.555		
8/2/2017									0.158
8/15/2017		1.14						2.1	
8/16/2017	0.0435		0.539						0.148
8/17/2017				0.0853	0.7	0.922	0.516		
4/4/2018									
4/5/2018									0.13
5/8/2018									
5/9/2018									0.12
6/19/2018	0.04 (J)	1.2	0.76					1.7	0.13
6/20/2018				0.079	0.69		0.51		
6/21/2018						0.99			
9/25/2018		1	0.61						
9/26/2018	0.038 (J)			0.072				1.3	0.1
9/27/2018					0.62	0.88	0.47		
11/6/2018			0.75			1.1		1.8	
11/7/2018	0.037 (J)	1.4		0.074	0.86		0.51		0.1
3/6/2019					1.5				
3/24/2019		1	0.95		1.1	1.2	0.44	1.4	
3/25/2019	0.038 (J)			0.067					0.091
10/15/2019		1.1	1						
10/16/2019	0.036 (J)			0.051			0.49	1.6	0.085
10/17/2019					1.3	1.1			
11/7/2019									
11/18/2019									
11/19/2019									
11/20/2019						1.3	0.53		
11/21/2019			1					1.5	
12/4/2019									
12/5/2019									
12/17/2019									
12/18/2019									
1/8/2020									
1/9/2020									
1/21/2020									
2/4/2020									
2/13/2020									
3/26/2020	0.064 (J)								
3/27/2020		1.5	1.3	0.088 (J)				1.8	0.17 (J)
3/28/2020					0.95	0.79	0.28 (J)		
10/12/2020		1.3							
10/13/2020	<0.5		1.1	<0.5				1.8	<0.5
10/14/2020					1.5	1.8			
10/15/2020							0.61		

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-11 (bg)	MCM-04	MCM-15 (bg)	MCM-20 (bg)	MCM-18 (bg)	MCM-19 (bg)
8/30/2016						
8/31/2016						
10/25/2016						
11/30/2016						
2/15/2017						
2/16/2017						
5/31/2017	0.0521					
6/1/2017		0.0608				
6/2/2017			0.0495			
8/2/2017	0.0392 (J)	0.137	0.0333 (J)			
8/15/2017	0.0448					
8/16/2017						
8/17/2017		0.128	0.0593			
4/4/2018	0.046	0.1	0.065			
4/5/2018						
5/8/2018	0.048	0.074	0.062			
5/9/2018						
6/19/2018	0.04		0.064			
6/20/2018		0.045				
6/21/2018						
9/25/2018	0.043					
9/26/2018			0.06			
9/27/2018		0.06				
11/6/2018	0.046	0.06				
11/7/2018			0.062 (J)			
3/6/2019						
3/24/2019						
3/25/2019	0.03 (J)	0.058	0.057			
10/15/2019		0.068	0.046			
10/16/2019	0.032 (J)					
10/17/2019						
11/7/2019				1.1	0.27	0.84
11/18/2019					0.29 (J)	
11/19/2019				1.3		0.83
11/20/2019						
11/21/2019						
12/4/2019				0.81		0.68
12/5/2019					0.23	
12/17/2019						0.57
12/18/2019				0.77	0.23	
1/8/2020				0.9		0.73
1/9/2020					0.2	
1/21/2020				0.94	0.24 (J)	0.75
2/4/2020				0.96 (J)	0.24 (J)	0.79 (J)
2/13/2020				0.88	0.22	0.74
3/26/2020						
3/27/2020	0.058 (J)		0.076 (J)	0.94	0.24 (J)	0.96
3/28/2020		0.067 (J)				
10/12/2020	<0.5				0.24 (J)	
10/13/2020		<0.5	<0.5	1.1		0.73
10/14/2020						
10/15/2020						

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-12	MCM-16 (bg)	MCM-14	MCM-05	MCM-06	MCM-07	MCM-17	MCM-11 (bg)
8/30/2016	7.3	7.05	4.02	42.8					
8/31/2016					65	82.8	119		
10/25/2016								69.4	
11/30/2016	10.8	8.69	4.87	33.2	71.7	68.7	103	83.9	
2/15/2017	14.3	8.34	6.61	56.1				96.3	
2/16/2017					74	94.8	114		
5/31/2017		8.85		73.6				122	18.6
6/1/2017	12.7 (J)		6.42						
6/2/2017					120	92.5	179		
8/2/2017									18.5
8/15/2017		8.05						117	4.09
8/16/2017	8.7			99.6					
8/17/2017			5.62		100	126	186		
4/4/2018									<25
4/5/2018									
5/8/2018									18.4 (J)
5/9/2018									
6/19/2018	11.6 (J)	8.3		285				136	4.3
6/20/2018			5.7		72.8	121			
6/21/2018							179		
6/28/2018	13	8.9		294				138	
9/25/2018		6.8		283					6.2 (D)
9/26/2018	12.8 (J)		5.3					148	
9/27/2018					46.6	95.1	193		
11/6/2018				297			219	24.7	1.8
11/7/2018	11.9	8.5	5.3		41.8	387.5 (D)			
3/6/2019						341			
3/24/2019		7.4		338	20.9 (J)	277	243	136	
3/25/2019	12.6 (J)		5.7						2.5 (D)
10/15/2019		7.9		321					
10/16/2019	13.6		4.8		55.2			118	2.2
10/17/2019						309	260		
11/7/2019									
11/18/2019									
11/19/2019									
11/20/2019					55.8		308		
11/21/2019				305				125	
12/4/2019									
12/5/2019									
12/17/2019									
12/18/2019									
1/8/2020									
1/9/2020									
1/21/2020									
2/4/2020									
2/13/2020									
3/26/2020	10.1								
3/27/2020		8.3	5.4	286				222	3.3
3/28/2020					25.8	286	286		
10/12/2020		6.1							2.8
10/13/2020	9.8		5.7	40.9				86.4	
10/14/2020						245	207		

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

10/15/2020	MCM-01 (bg)	MCM-12	MCM-16 (bg)	MCM-14	MCM-05	MCM-06	MCM-07	MCM-17	MCM-11 (bg)
					69.1				

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-02 (bg)	MCM-04	MCM-15 (bg)	MCM-20 (bg)	MCM-18 (bg)	MCM-19 (bg)
8/30/2016						
8/31/2016						
10/25/2016						
11/30/2016						
2/15/2017						
2/16/2017						
5/31/2017	5.9					
6/1/2017		3.65				
6/2/2017			2.77			
8/2/2017	4.69	12.4	1.27			
8/15/2017						
8/16/2017	5.25					
8/17/2017		8.17	5.53			
4/4/2018		6.8	6.5			
4/5/2018	5					
5/8/2018		5.7	6.7			
5/9/2018	4.7					
6/19/2018	4.8		7.4			
6/20/2018		4.3				
6/21/2018						
6/28/2018						
9/25/2018						
9/26/2018	4.6		8.5 (J)			
9/27/2018		16.4 (J)				
11/6/2018		39.5				
11/7/2018	4.6		9.8			
3/6/2019						
3/24/2019						
3/25/2019	4.7	20.8 (J)	7.8			
10/15/2019		15.5	6.7			
10/16/2019	4.9					
10/17/2019						
11/7/2019				163	46.2	158
11/18/2019					41.8	
11/19/2019				169		152
11/20/2019						
11/21/2019						
12/4/2019				140		142
12/5/2019					40.5	
12/17/2019						136
12/18/2019				145	42	
1/8/2020				157		147
1/9/2020					37.1	
1/21/2020				152	40.1	167
2/4/2020				139	36.2	142
2/13/2020				146	38.9	148
3/26/2020						
3/27/2020	4.9		5.9	113	23.2	122
3/28/2020		15.5				
10/12/2020					19.1	
10/13/2020	3.8	12.5	0.83	128		125
10/14/2020						

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

MCM-02 (bg)

MCM-04

MCM-15 (bg)

MCM-20 (bg)

MCM-18 (bg)

MCM-19 (bg)

10/15/2020

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-12	MCM-14	MCM-16 (bg)	MCM-06	MCM-07	MCM-05	MCM-17	MCM-02 (bg)
8/30/2016	9.7	800	450	26					
8/31/2016					2200	2600	1800		
10/25/2016								1300	
11/30/2016	19	760	310	27	2100	2800	1100	400	
2/15/2017	21	740	490	30				2000	
2/16/2017					2500	3100	2100		
5/31/2017		740	820					2500	39
6/1/2017	12			27					
6/2/2017					2500	4600	3100		
8/2/2017									42
8/15/2017		750						2500	
8/16/2017	14		1500						41
8/17/2017				32	2700	4600	2600		
4/4/2018									
4/5/2018									40.2
5/8/2018									
5/9/2018									40.6
6/19/2018	24.4	760	5180					3050	37.7
6/20/2018				30	3100		1800		
6/21/2018						3920			
9/25/2018		752 (D)	7220						
9/26/2018	23.4			28.4				3965 (D)	33.4
9/27/2018					2510 (D)	5660 (D)	1300		
11/6/2018			6020			6520		2230	
11/7/2018	21.8	665		25.1	8860		1180		30.7
3/6/2019					11700				
3/24/2019		744	7400		6470	8720	717	3960	
3/25/2019	19.4			21.8					33.5
10/15/2019		744	9050						
10/16/2019	21.4			20			941 (D)	2181.5 (D)	33.1
10/17/2019					9930	8210			
11/7/2019									
11/18/2019									
11/19/2019									
11/20/2019						9810	1480		
11/21/2019			8330					3890	
12/4/2019									
12/5/2019									
12/17/2019									
12/18/2019									
1/8/2020									
1/9/2020									
1/21/2020									
2/4/2020									
2/13/2020									
3/26/2020	23								
3/27/2020		675	7680	23.6				4770	32.9
3/28/2020					9190	9070	693		
10/12/2020		552							
10/13/2020	13.5		6230	23.3				3980	25.7
10/14/2020					6630	7910			
10/15/2020							1660		

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-11 (bg)	MCM-04	MCM-15 (bg)	MCM-20 (bg)	MCM-18 (bg)	MCM-19 (bg)
8/30/2016						
8/31/2016						
10/25/2016						
11/30/2016						
2/15/2017						
2/16/2017						
5/31/2017	98					
6/1/2017		22				
6/2/2017			11			
8/2/2017	57	230	3.2			
8/15/2017	15					
8/16/2017						
8/17/2017		210	12			
4/4/2018	69	156	13.4			
4/5/2018						
5/8/2018	72.3	140	13.2			
5/9/2018						
6/19/2018	17.3		13.7			
6/20/2018		27.5				
6/21/2018						
9/25/2018	31.3					
9/26/2018			18.5			
9/27/2018		101				
11/6/2018	9.8	107				
11/7/2018			20.2			
3/6/2019						
3/24/2019						
3/25/2019	12.9	78.5	19.7			
10/15/2019		46	17.1			
10/16/2019	12.2					
10/17/2019						
11/7/2019				7880	2360	6170
11/18/2019					6970	
11/19/2019				8130		5650
11/20/2019						
11/21/2019						
12/4/2019				7410		6100
12/5/2019					2130	
12/17/2019						5660
12/18/2019				7170	2090	
1/8/2020				6480		5070
1/9/2020					1750	
1/21/2020				6000	1630	5010
2/4/2020				5700	1760	5030
2/13/2020				7060	1850	6140
3/26/2020						
3/27/2020	14.5		14.1	7110	1450	6870
3/28/2020		71.4				
10/12/2020	13.9				1340	
10/13/2020		54.4	3.8	5980		5260
10/14/2020						
10/15/2020						

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-14	MCM-12	MCM-07	MCM-06	MCM-05	MCM-17	MCM-02 (bg)
8/30/2016	0.03 (J)	0.04 (J)	0.5	1.5					
8/31/2016					0.92	0.41	0.93		
10/25/2016								1.1	
11/30/2016	0.04 (J)	0.18 (J)	0.49	1.4	0.99	0.61	0.93	1.3	
2/15/2017	0.007 (J)	0.02 (J)	0.58	1.3				1.3	
2/16/2017					0.54	0.3 (J)	0.6		
5/31/2017			0.56	1.2				1.3	0.01 (J)
6/1/2017	<0.1	0.005 (J)							
6/2/2017					0.42	0.19 (J)	0.34		
8/2/2017									0.14 (J)
8/15/2017				1.2				1.2	
8/16/2017	0.03 (J)		0.45						0.13 (J)
8/17/2017		0.04 (J)			0.27 (J)	0.26 (J)	0.52		
4/4/2018									
4/5/2018									<0.1
5/8/2018									
5/9/2018									<0.1
6/19/2018	<0.1		<0.1	0.91				0.6	0.065 (J)
6/20/2018		0.038 (J)				0.22 (J)	0.5		
6/21/2018					0.28 (J)				
9/25/2018			<0.1	1.1					
9/26/2018	0.12 (J)	0.029						0.44 (D)	0.029
9/27/2018					0.32 (D)	0.068 (J)	0.32		
11/6/2018			0.084 (J)		0.086 (J)			0.4	
11/7/2018	<0.1	<0.1		<0.1		10.3 (o)	0.35		<0.1
3/6/2019						<0.1			
3/24/2019			0.14 (J)	0.99	0.14 (J)	0.19 (J)	0.32	0.31	
3/25/2019	0.038 (J)	0.041 (J)							0.039 (J)
8/26/2019			<0.1						
8/27/2019	<0.1	<0.1		1.1				<0.1	
8/28/2019					<0.1	<0.1	0.36		<0.1
10/15/2019			<0.1	1					
10/16/2019	0.046 (JD)	0.044 (J)					0.41	0.083 (J)	0.044 (JD)
10/17/2019					<0.1	<0.1			
11/7/2019									
11/18/2019									
11/19/2019									
11/20/2019					<0.1		0.34		
11/21/2019			<0.1					<0.1	
12/4/2019									
12/5/2019									
12/17/2019									
12/18/2019									
1/8/2020									
1/9/2020									
1/21/2020									
2/4/2020									
2/13/2020									
3/26/2020	<0.1								
3/27/2020		<0.1	<0.1	1.1				<0.1	<0.1
3/28/2020					<0.1	<0.1	0.34		
10/12/2020				1.2					

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-14	MCM-12	MCM-07	MCM-06	MCM-05	MCM-17	MCM-02 (bg)
10/13/2020	<0.1	<0.1	<0.1					<0.1	<0.1
10/14/2020					<0.1	<0.1			
10/15/2020							0.22		

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-11 (bg)	MCM-04	MCM-15 (bg)	MCM-20 (bg)	MCM-18 (bg)	MCM-19 (bg)
8/30/2016						
8/31/2016						
10/25/2016						
11/30/2016						
2/15/2017						
2/16/2017						
5/31/2017	0.85					
6/1/2017		<0.1				
6/2/2017			<0.1			
8/2/2017	0.69	0.27 (J)	0.05 (J)			
8/15/2017	0.29 (J)					
8/16/2017						
8/17/2017		0.18 (J)	<0.1			
4/4/2018	0.32	<0.1	<0.1			
4/5/2018						
5/8/2018	0.63	0.56	<0.1			
5/9/2018						
6/19/2018	0.17 (J)		0.057 (J)			
6/20/2018		0.033 (J)				
6/21/2018						
9/25/2018	0.15 (J)					
9/26/2018			0.029			
9/27/2018		0.12 (J)				
11/6/2018	<0.1	<0.1				
11/7/2018			<0.1			
3/6/2019						
3/24/2019						
3/25/2019	0.12 (J)	0.055 (J)	0.036 (J)			
8/26/2019						
8/27/2019		<0.1	<0.1			
8/28/2019	0.068 (J)					
10/15/2019		0.095 (J)	0.14 (J)			
10/16/2019	0.1 (J)					
10/17/2019						
11/7/2019				1.4	0.49	<0.1
11/18/2019					0.52	
11/19/2019				1.2		0.033 (J)
11/20/2019						
11/21/2019						
12/4/2019				1.4		0.22 (J)
12/5/2019					0.5	
12/17/2019						<0.1
12/18/2019				1.5	0.33	
1/8/2020				<0.1		<0.1
1/9/2020					0.12 (J)	
1/21/2020				0.53	0.13 (J)	0.11 (J)
2/4/2020				<0.1	0.18 (J)	<0.1
2/13/2020				<0.1	0.077 (J)	<0.1
3/26/2020						
3/27/2020	0.066 (J)		<0.1	<0.1	0.06 (J)	<0.1
3/28/2020		<0.1				
10/12/2020	<0.1				0.34	

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-11 (bg)	MCM-04	MCM-15 (bg)	MCM-20 (bg)	MCM-18 (bg)	MCM-19 (bg)
10/13/2020		<0.1	<0.1	<0.1		<0.1
10/14/2020						
10/15/2020						

Prediction Limit

Constituent: pH (S.U.) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-14	MCM-12	MCM-16 (bg)	MCM-07	MCM-06	MCM-05	MCM-17	MCM-02 (bg)
8/30/2016	5.66	7.04	6.49	5.18					
8/31/2016					6.66	7.21	6.93		
10/25/2016								6.95	
11/30/2016	5.36	7.13	6.5	4.96	6.69	7.23	6.77	6.95	
2/15/2017	5.25	7.02	6.51	5.13				6.85	
2/16/2017					6.72	7.27	6.89		
5/31/2017		7	6.45					6.96	5.06
6/1/2017	5.59			4.99					
6/2/2017					6.53	7.18	6.83		
8/2/2017									5
8/15/2017			6.41					6.99	
8/16/2017	5.58	6.88							4.98
8/17/2017				4.68	6.28	7.15	6.76		
4/4/2018									
4/5/2018									5.02
5/8/2018									
5/9/2018									4.96
6/19/2018	5.51	6.78	6.32					6.91	5.02
6/20/2018				4.77		7.19	6.83		
6/21/2018					6.45				
9/25/2018		6.75	6.31						
9/26/2018	5.32			4.65				6.81	5.06
9/27/2018					6.48	7.21	6.64		
11/6/2018		6.92			6.18			5.99	
11/7/2018	5.72		6.3	4.99		6.91	6.6		5.03
3/24/2019		6.59	6.4		6.38	6.98	6.1	6.62	
3/25/2019	5.75			5.13					5.08
8/26/2019		6.62							
8/27/2019	5.58		6.24	4.88				6.23	
8/28/2019					6.35	6.87	6.69		4.99
10/15/2019		6.58	6.19						
10/16/2019	5.72			4.89			6.64	6.54	4.98
10/17/2019					6.4	6.86			
11/7/2019									
11/18/2019									
11/19/2019									5.11
11/20/2019	5.77				6.27		6.58		
11/21/2019		6.67						6.44	
12/4/2019									
12/5/2019									
1/8/2020									
1/9/2020									
1/21/2020									
2/4/2020									
2/13/2020									
3/26/2020	5.45								
3/27/2020		6.59	6.33	5.12				6.93	5.12
3/28/2020					6.35	6.8	6.6		
10/12/2020			6.35						
10/13/2020	5.69	6.56		5.17				6.34	5.03
10/14/2020					6.32	6.93			
10/15/2020							6.53		

Prediction Limit

Constituent: pH (S.U.) Analysis Run 12/10/2020 3:32 PM View: Appendix III
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-11 (bg)	MCM-04	MCM-15 (bg)	MCM-18 (bg)	MCM-20 (bg)	MCM-19 (bg)
8/30/2016						
8/31/2016						
10/25/2016						
11/30/2016						
2/15/2017						
2/16/2017						
5/31/2017	5.29					
6/1/2017		5.68				
6/2/2017			5.31			
8/2/2017	5.19	5.2	5.05			
8/15/2017	5.19					
8/16/2017						
8/17/2017		5.31	5.52			
4/4/2018	5.19	4.74	5.45			
4/5/2018						
5/8/2018	5.3	4.78	5.54			
5/9/2018						
6/19/2018	5.15		5.6			
6/20/2018		4.79				
6/21/2018						
9/25/2018	5.13					
9/26/2018			5.17			
9/27/2018		5.14				
11/6/2018	5.08	4.9				
11/7/2018			5.47			
3/24/2019			5.4			
3/25/2019	5.05	4.93				
8/26/2019						
8/27/2019		5.05	5.35			
8/28/2019	4.87					
10/15/2019		4.89	5.32			
10/16/2019	5.05					
10/17/2019						
11/7/2019				4.25	3.79	5.21
11/18/2019				4.12		
11/19/2019					3.78	5.15
11/20/2019		5.03				
11/21/2019						
12/4/2019					3.87 (D)	5.28 (D)
12/5/2019				4.17 (D)		
1/8/2020					3.77	5.04
1/9/2020				4.19		
1/21/2020				4.28	3.73	5.1
2/4/2020				4.26	3.72	5.15
2/13/2020				4.2	3.75	5.07
3/26/2020						
3/27/2020	5.09		5.3	4.34	3.81	5.14
3/28/2020		5.27				
10/12/2020	5			4.29		
10/13/2020		5.25	5.02		3.72	5.04
10/14/2020						
10/15/2020						

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-14	MCM-12	MCM-07	MCM-06	MCM-05	MCM-17	MCM-11 (bg)
8/30/2016	17	24	6.4	4.3					
8/31/2016					290	21	37		
10/25/2016								84	
11/30/2016	33	26	4.5	7.6	240	19	63	52	
2/15/2017	83	30	37	3				190	
2/16/2017					220	22	90		
5/31/2017			61	2.5				260	40
6/1/2017	51	24							
6/2/2017					500	28	210		
8/2/2017									34
8/15/2017				3.2				210	24
8/16/2017	36		130						
8/17/2017		26			510	69	80		
4/4/2018									33.9
4/5/2018									
5/8/2018									35.7
5/9/2018									
6/19/2018	50.3		498	1.6				218	23.7
6/20/2018		31.2				33	46 (J)		
6/21/2018					481				
9/25/2018			790	1					25.6
9/26/2018	54.1	36.8						333 (D)	
9/27/2018					777 (D)	29.4 (D)	58.5 (J)		
11/6/2018			875		926			182	25.2
11/7/2018	45.6	35		0.41 (J)		734	41.3 (J)		
3/6/2019						1220 (J)			
3/24/2019			1170	1.5	1070	413	131	413	
3/25/2019	43	40.1							24.9
10/15/2019			<1	0.54 (J)					
10/16/2019	31.9	28.5					122.5 (D)	312.5 (D)	17.4
10/17/2019					1230	507			
11/7/2019									
11/18/2019									
11/19/2019									
11/20/2019					1550		132		
11/21/2019			1070					428	
12/4/2019									
12/5/2019									
12/17/2019									
12/18/2019									
1/8/2020									
1/9/2020									
1/21/2020									
2/4/2020									
2/13/2020									
3/26/2020	36.2								
3/27/2020		31.2	899	<1				504	23.4
3/28/2020					1090	701	63.8		
10/12/2020				<1					19.3
10/13/2020	32.3	26.8	695					378	
10/14/2020					904	510			
10/15/2020							147		

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-02 (bg)	MCM-04	MCM-15 (bg)	MCM-20 (bg)	MCM-19 (bg)	MCM-18 (bg)
8/30/2016						
8/31/2016						
10/25/2016						
11/30/2016						
2/15/2017						
2/16/2017						
5/31/2017	46					
6/1/2017		42				
6/2/2017			13			
8/2/2017	43	120	14			
8/15/2017						
8/16/2017	41					
8/17/2017		110	14			
4/4/2018		70.6	13.4			
4/5/2018	33.4					
5/8/2018		61.4	14.8			
5/9/2018	36					
6/19/2018	35.5		15.5			
6/20/2018		25.3				
6/21/2018						
9/25/2018						
9/26/2018	39.6		23			
9/27/2018		63.4				
11/6/2018		136				
11/7/2018	35.8		22.2			
3/6/2019						
3/24/2019						
3/25/2019	34.2	137	22.4			
10/15/2019		105	17.9			
10/16/2019	24.4					
10/17/2019						
11/7/2019				1010	832	379
11/18/2019						737
11/19/2019				1140	795	
11/20/2019						
11/21/2019						
12/4/2019				1020	810	
12/5/2019						351
12/17/2019					535	
12/18/2019				8.1		
1/8/2020				747	603	
1/9/2020						254
1/21/2020				798	611	254
2/4/2020				1120	599	432
2/13/2020				833	761	300
3/26/2020						
3/27/2020	28.6		14.6	700	836	219
3/28/2020		86.6				
10/12/2020						191
10/13/2020	27.6	92.3	7.6	638	609	
10/14/2020						
10/15/2020						

Prediction Limit

Constituent: Total Dissolved Solids [TDS] (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-12	MCM-14	MCM-16 (bg)	MCM-06	MCM-07	MCM-05	MCM-17	MCM-02 (bg)
8/30/2016	86	1910	1310	99					
8/31/2016					4160	5100	3620		
10/25/2016								2900	
11/30/2016	131	1910	1050	111	3950	4680	4030	3970	
2/15/2017	212	1870	1440	170				3820	
2/16/2017					4600	5080	4080		
5/31/2017		1920	1740					5050	123
6/1/2017	103			98					
6/2/2017					4470	8000	5560		
8/2/2017									136
8/15/2017		1840						4820	
8/16/2017	65		3010						124
8/17/2017				84	5450	8320	4620		
4/4/2018									
4/5/2018									128
5/8/2018									
5/9/2018									127
6/19/2018	142	1820	8630					5640	143
6/20/2018				123	4940		3370		
6/21/2018						7500			
9/25/2018		1760	10700						
9/26/2018	133			117				6770 (D)	132
9/27/2018					4480	10200	2360		
11/6/2018			11100			11000		4160	
11/7/2018	121	1800		120	15100		2230		134
3/6/2019					19000				
3/24/2019		1770	14200		13700	13700	1450	6840	
3/25/2019	116			101					111
10/15/2019		1730	15400						
10/16/2019	104			95			2860	7740	96
10/17/2019					16100	13200			
11/7/2019									
11/18/2019									
11/19/2019									
11/20/2019						16700	2640		
11/21/2019			15800					7720	
12/4/2019									
12/5/2019									
12/17/2019									
12/18/2019									
1/8/2020									
1/9/2020									
1/21/2020									
2/4/2020									
2/13/2020									
3/26/2020	114								
3/27/2020		1970	16400	110				10200	119
3/28/2020					18800	18300	1470		
10/12/2020		1560							
10/13/2020	113		15600	115				8750	118
10/14/2020					15200	18400			
10/15/2020							5100		

Prediction Limit

Constituent: Total Dissolved Solids [TDS] (mg/L) Analysis Run 12/10/2020 3:32 PM View: Appendix III

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-11 (bg)	MCM-04	MCM-15 (bg)	MCM-20 (bg)	MCM-18 (bg)	MCM-19 (bg)
8/30/2016						
8/31/2016						
10/25/2016						
11/30/2016						
2/15/2017						
2/16/2017						
5/31/2017	257					
6/1/2017		97				
6/2/2017			69			
8/2/2017	183	538	35			
8/15/2017	90					
8/16/2017						
8/17/2017		445	51			
4/4/2018	197	365	90			
4/5/2018						
5/8/2018	225	304	89			
5/9/2018						
6/19/2018	112		110			
6/20/2018		114				
6/21/2018						
9/25/2018	137					
9/26/2018			124			
9/27/2018		255				
11/6/2018	89	388				
11/7/2018			125			
3/6/2019						
3/24/2019						
3/25/2019	74	327	98			
10/15/2019		237	107			
10/16/2019	82					
10/17/2019						
11/7/2019				13500	4140	10900
11/18/2019					4030	
11/19/2019				13300		10000
11/20/2019						
11/21/2019						
12/4/2019				13200		11000
12/5/2019					3840	
12/17/2019						9860
12/18/2019				12500	3880	
1/8/2020				12300		9760
1/9/2020					3520	
1/21/2020				12000	3280	10100
2/4/2020				12300	3220	10600
2/13/2020				12400	3580	10900
3/26/2020						
3/27/2020	87		110	14600	3090	14300
3/28/2020		284				
10/12/2020	94				2920	
10/13/2020		<25	63	13900		6600
10/14/2020						
10/15/2020						

FIGURE E.

Appendix III Trend Tests - Prediction Limit Exceedances - Significant Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:34 PM

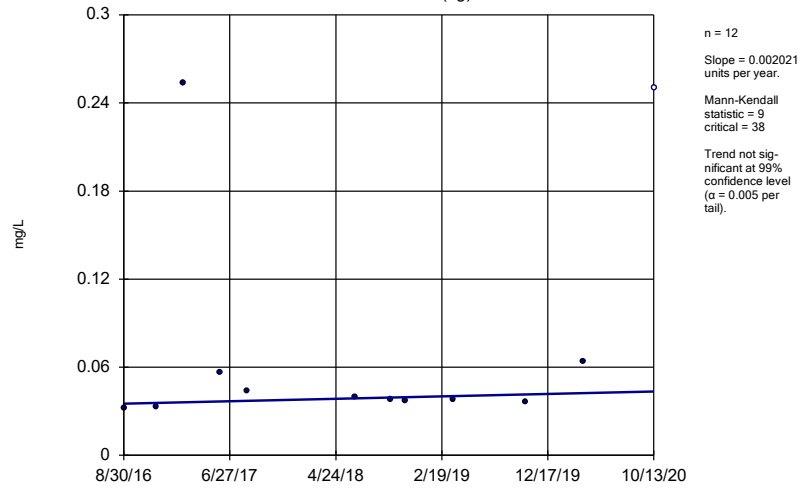
Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	MCM-06	0.1871	49	43	Yes	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-07	48.63	59	43	Yes	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-18 (bg)	-27.95	-35	-30	Yes	10	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-05	-0.0923	-62	-48	Yes	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-06	-0.113	-51	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-11 (bg)	-0.08197	-54	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-12	-0.07539	-44	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-14	-0.1382	-72	-48	Yes	14	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-06	4156	52	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-07	3571	68	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-14	4524	72	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-18 (bg)	-2315	-37	-30	Yes	10	0	n/a	n/a	0.01	NP

Appendix III Trend Tests - Prediction Limit Exceedances - All Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:34 PM

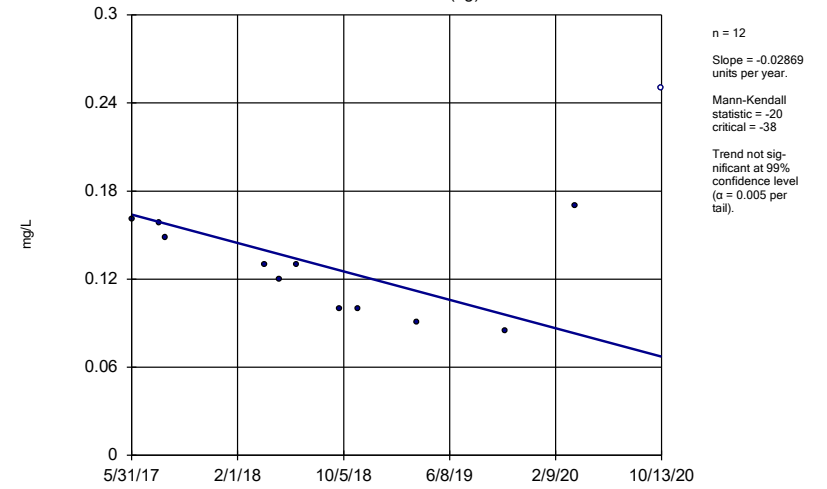
Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	MCM-01 (bg)	0.002021	9	38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-02 (bg)	-0.02869	-20	-38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-06	0.1871	49	43	Yes	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-07	0.1459	43	43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-11 (bg)	0.001433	5	38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-15 (bg)	0.007692	21	38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-16 (bg)	-0.0109	-22	-38	No	12	8.333	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-17	-0.09555	-21	-43	No	13	0	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-18 (bg)	0	-6	-30	No	10	0	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-19 (bg)	0	0	30	No	10	0	n/a	n/a	0.01	NP
Boron (mg/L)	MCM-20 (bg)	0.1848	3	30	No	10	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-01 (bg)	0.3136	4	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-02 (bg)	-0.2937	-23	-38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-06	59.02	42	43	No	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-07	48.63	59	43	Yes	13	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-11 (bg)	-4.667	-38	-38	No	12	8.333	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-15 (bg)	1.376	15	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-16 (bg)	0	2	38	No	12	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-18 (bg)	-27.95	-35	-30	Yes	10	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-19 (bg)	-36.5	-18	-30	No	10	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MCM-20 (bg)	-63.32	-25	-30	No	10	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-01 (bg)	0.05473	25	48	No	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-02 (bg)	0.02274	25	48	No	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-05	-0.0923	-62	-48	Yes	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-06	-0.113	-51	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-07	-0.08659	-48	-48	No	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-11 (bg)	-0.08197	-54	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-12	-0.07539	-44	-43	Yes	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-14	-0.1382	-72	-48	Yes	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-15 (bg)	-0.08406	-20	-43	No	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-16 (bg)	0.005464	2	43	No	13	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-17	-0.1427	-42	-48	No	14	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-18 (bg)	0.1725	20	25	No	9	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-19 (bg)	-0.1816	-16	-25	No	9	0	n/a	n/a	0.01	NP
pH (S.U.)	MCM-20 (bg)	-0.1225	-15	-25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-01 (bg)	-4.393	-8	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-02 (bg)	-4.101	-18	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-06	4156	52	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-07	3571	68	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-11 (bg)	-43.29	-34	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-14	4524	72	43	Yes	13	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-15 (bg)	15.28	25	38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-16 (bg)	-0.6384	-2	-38	No	12	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-18 (bg)	-2315	-37	-30	Yes	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-19 (bg)	0	0	30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MCM-20 (bg)	-1278	-4	-30	No	10	0	n/a	n/a	0.01	NP

Sen's Slope Estimator
MCM-01 (bg)

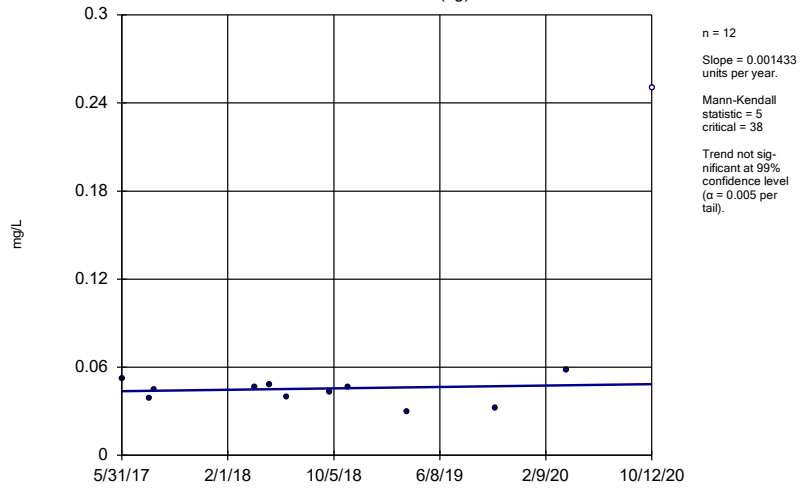


Constituent: Boron Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator
MCM-02 (bg)

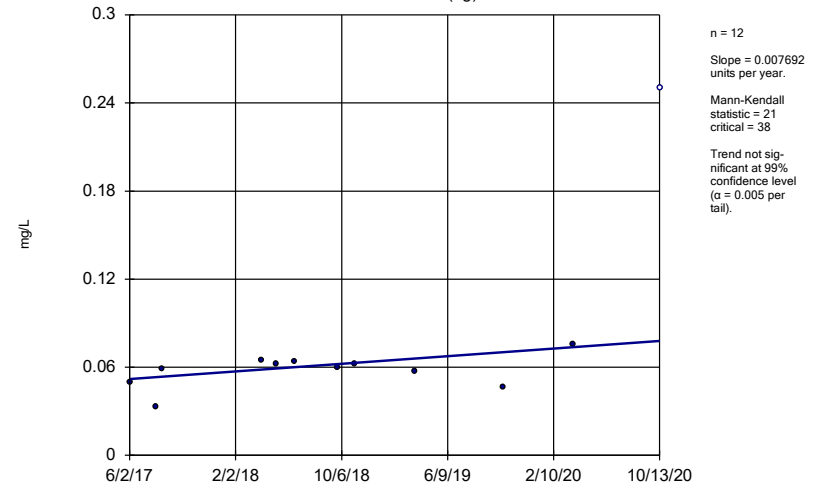


Sen's Slope Estimator MCM-11 (bg)



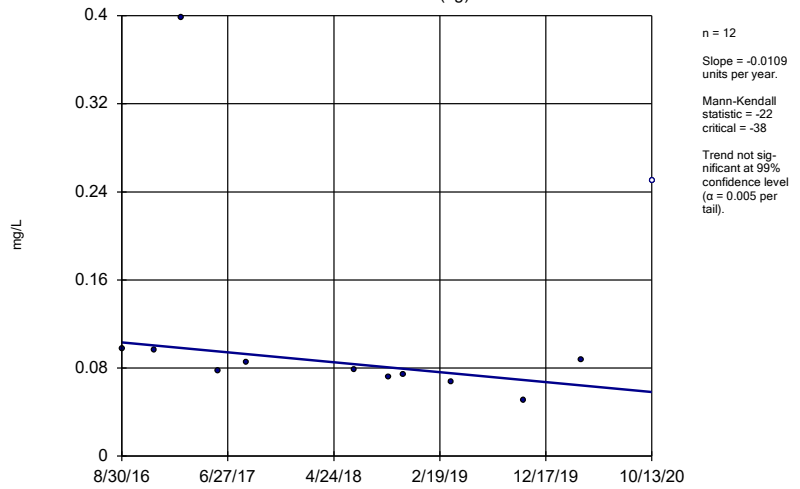
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator MCM-15 (bg)



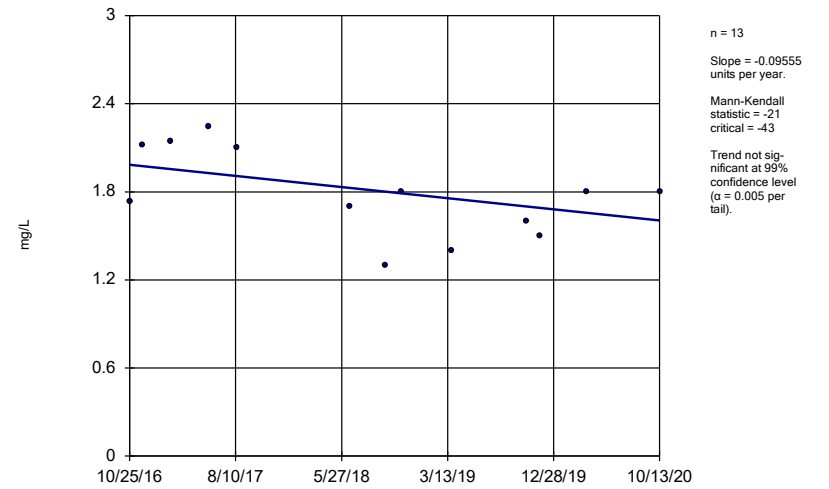
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator MCM-16 (bg)



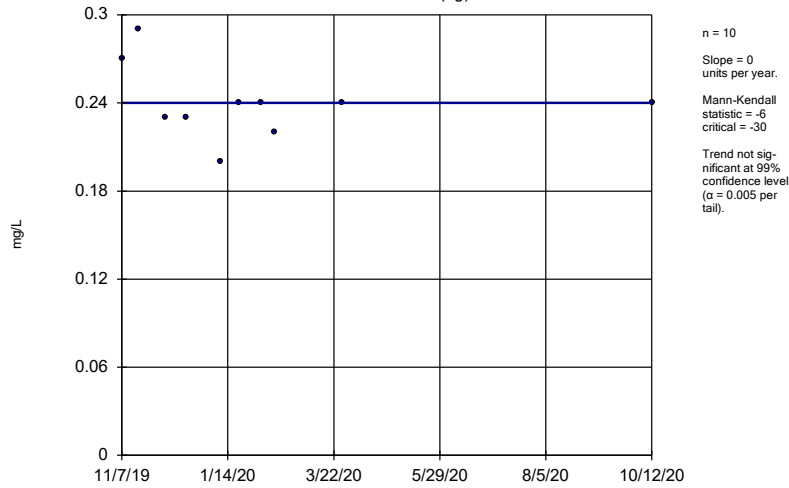
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator MCM-17



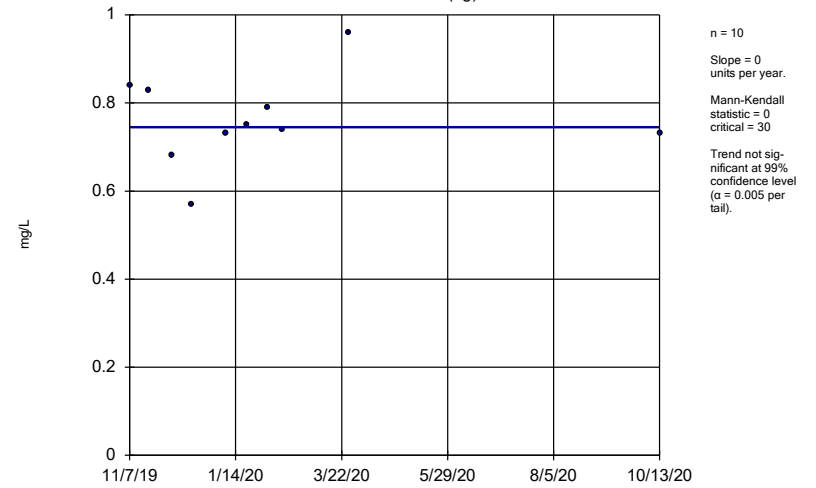
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator
MCM-18 (bg)



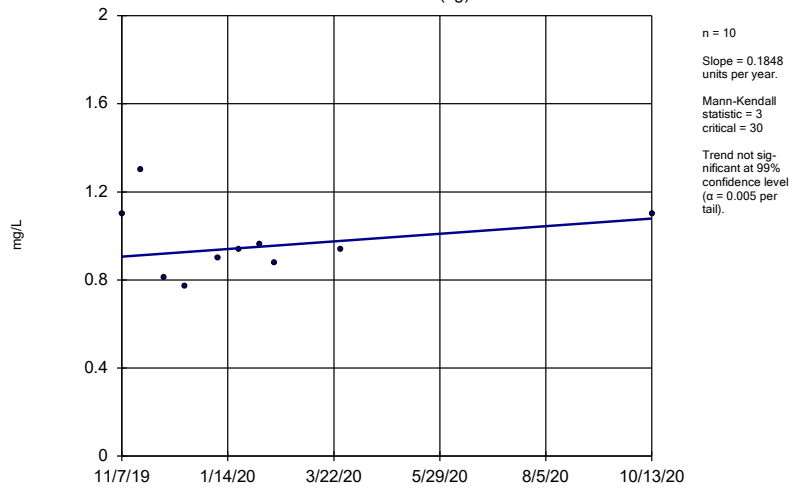
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator
MCM-19 (bg)



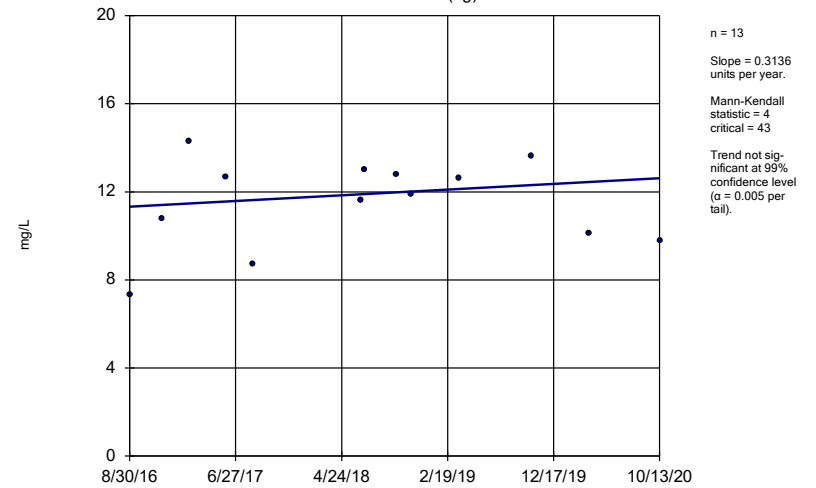
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Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator
MCM-20 (bg)



Constituent: Boron Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
Plant McManus Client: Southern Company Data: McManus Ash Pond

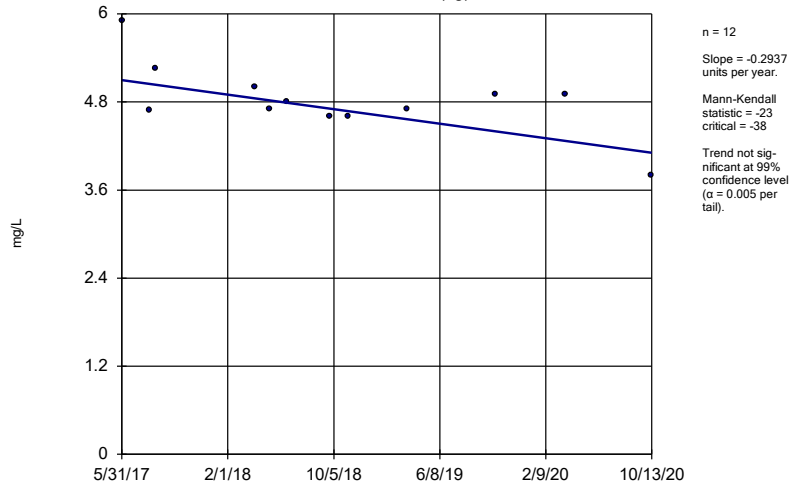
Sen's Slope Estimator
MCM-01 (bg)



Constituent: Calcium Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

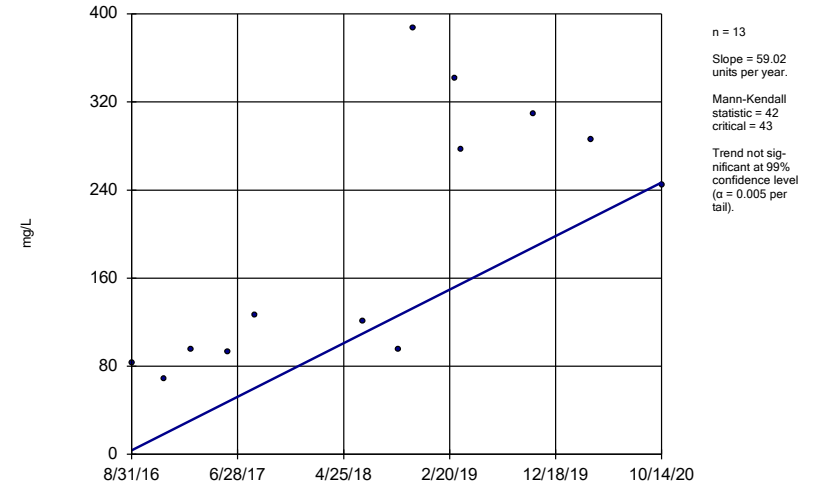
MCM-02 (bg)



Constituent: Calcium Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

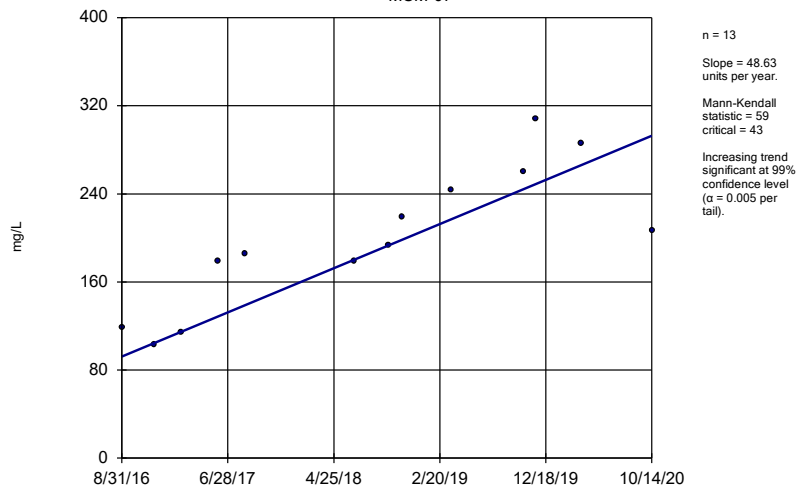
MCM-06



Constituent: Calcium Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

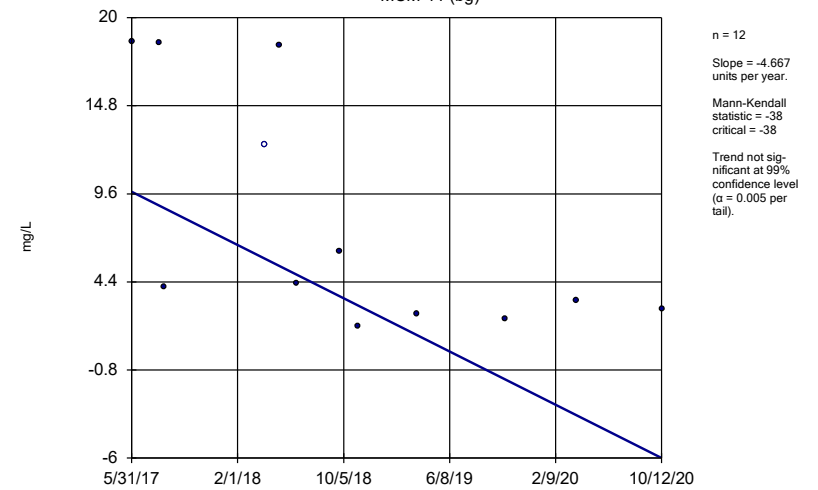
MCM-07



Constituent: Calcium Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

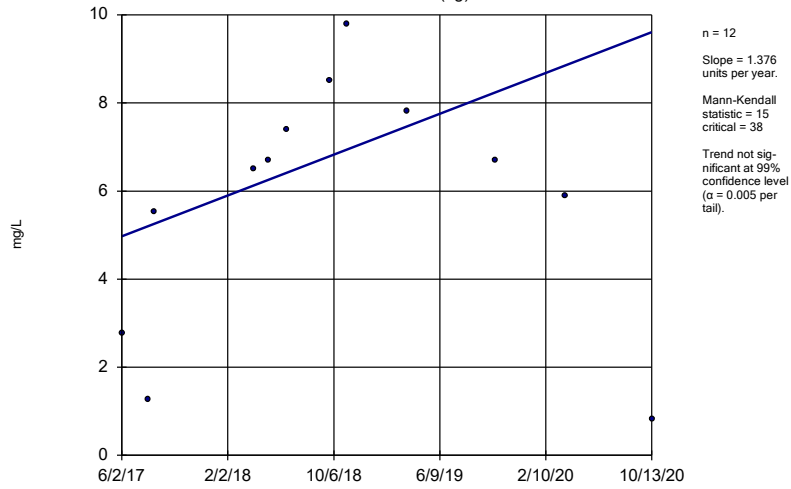
MCM-11 (bg)



Constituent: Calcium Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

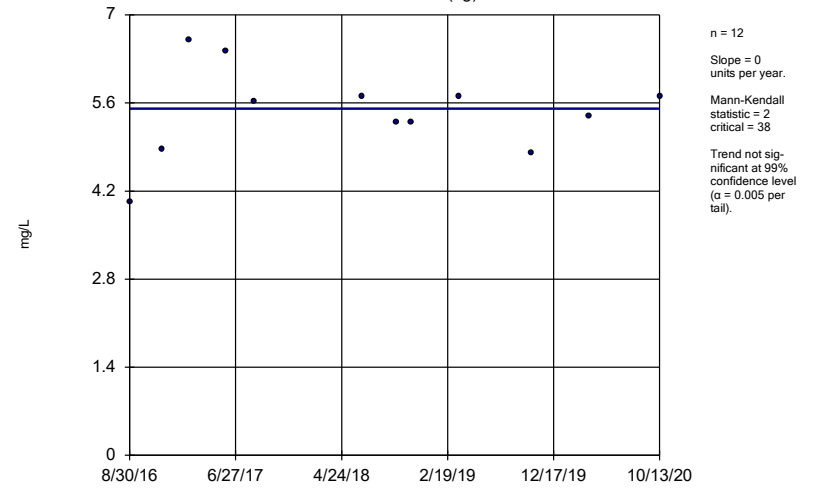
MCM-15 (bg)



Constituent: Calcium Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

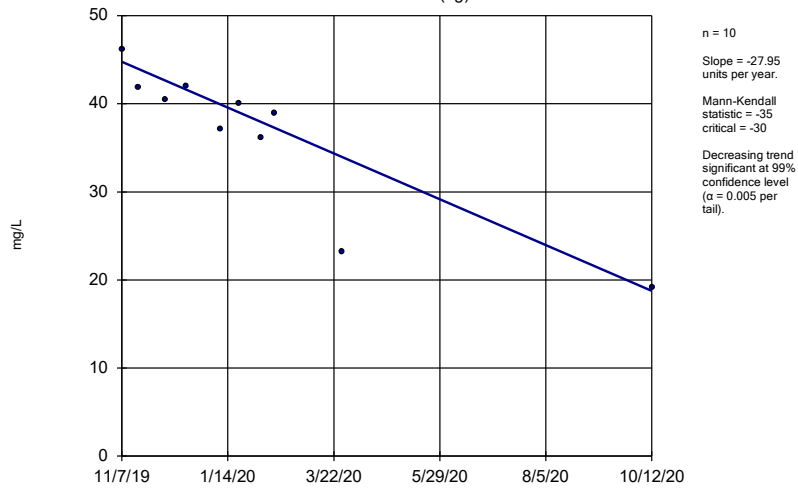
MCM-16 (bg)



Constituent: Calcium Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

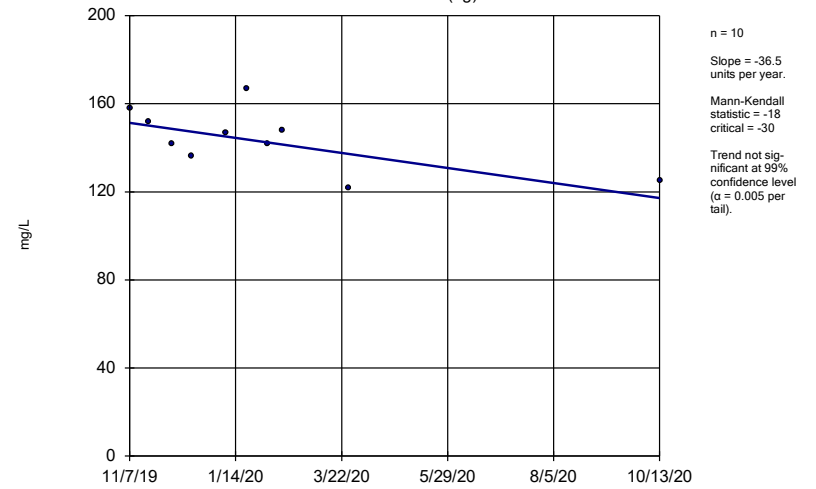
MCM-18 (bg)



Constituent: Calcium Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

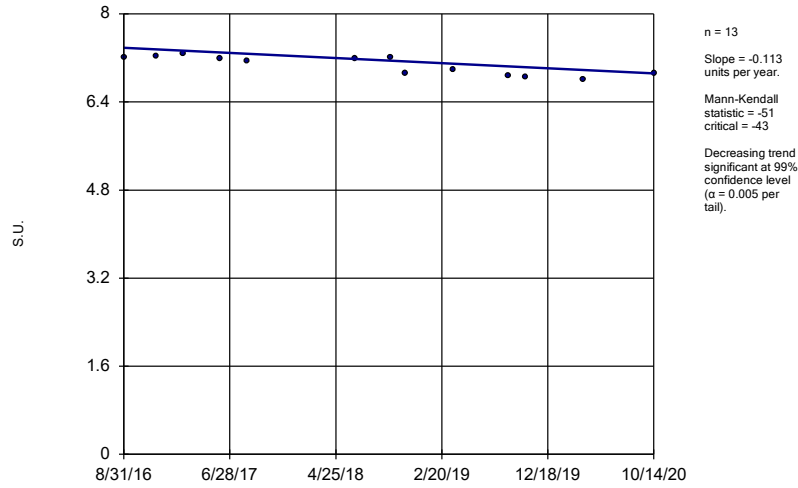
MCM-19 (bg)



Constituent: Calcium Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

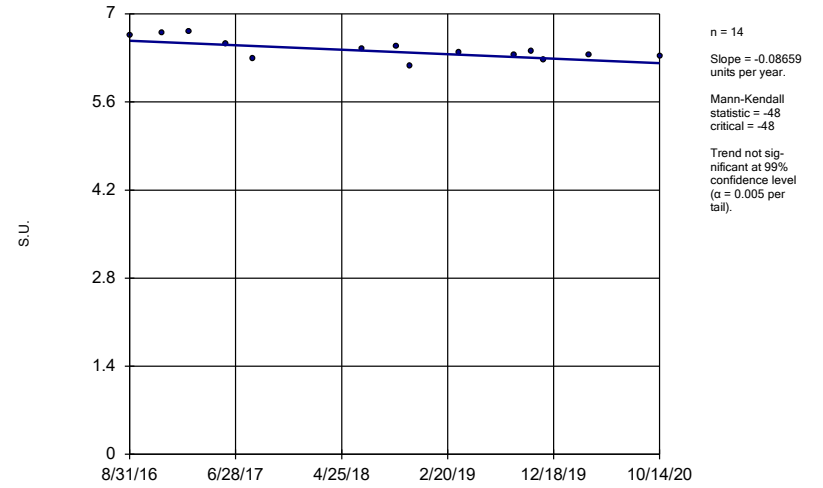
MCM-06



Constituent: pH Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

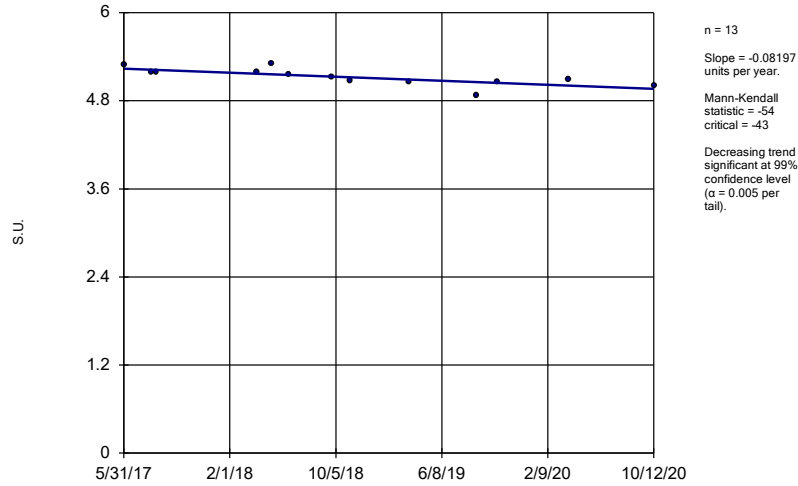
MCM-07



Constituent: pH Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

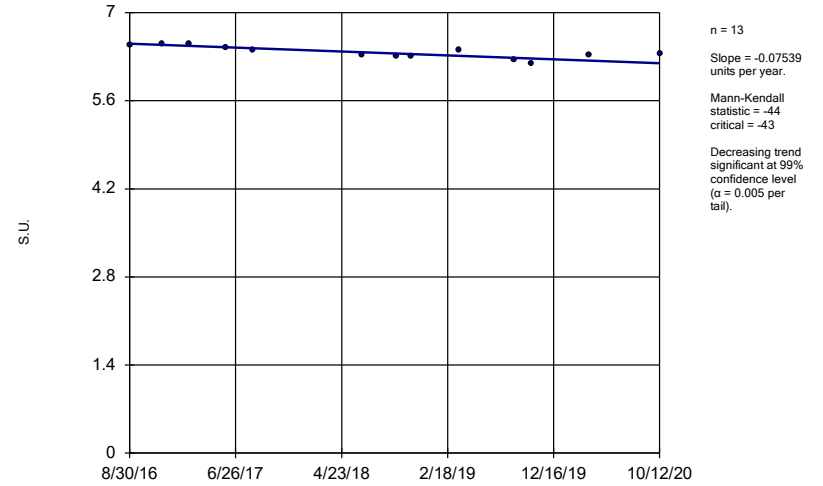
MCM-11 (bg)



Constituent: pH Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

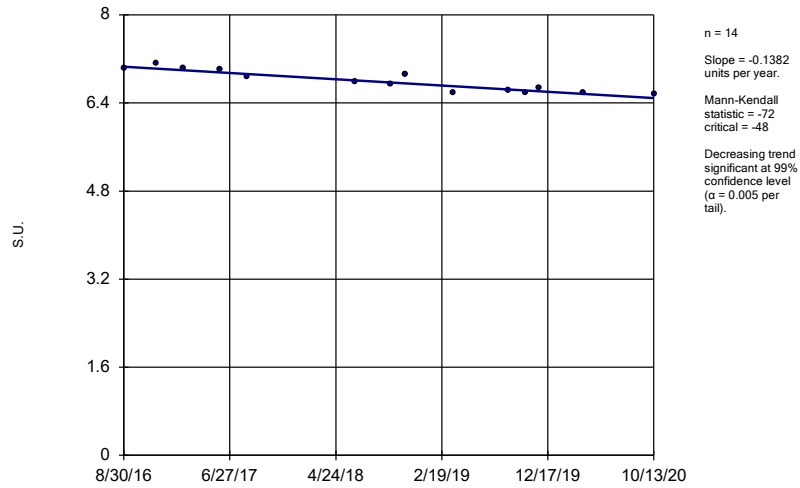
MCM-12



Constituent: pH Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

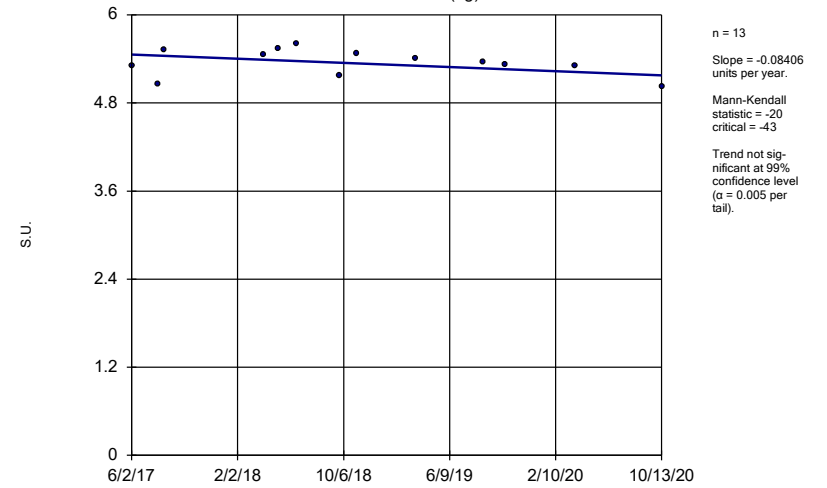
MCM-14



Constituent: pH Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

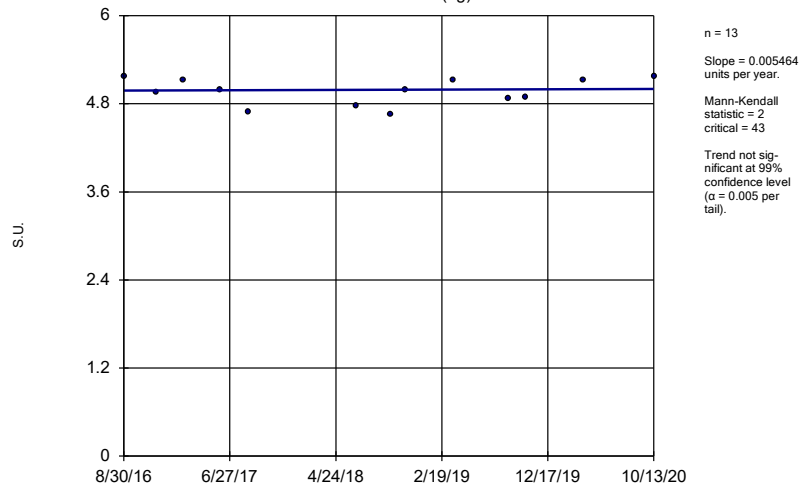
MCM-15 (bg)



Constituent: pH Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

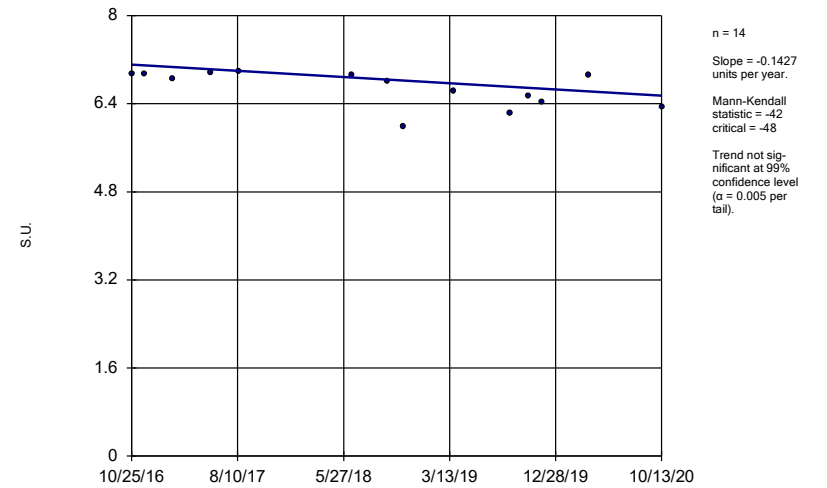
MCM-16 (bg)



Constituent: pH Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
 Plant McManus Client: Southern Company Data: McManus Ash Pond

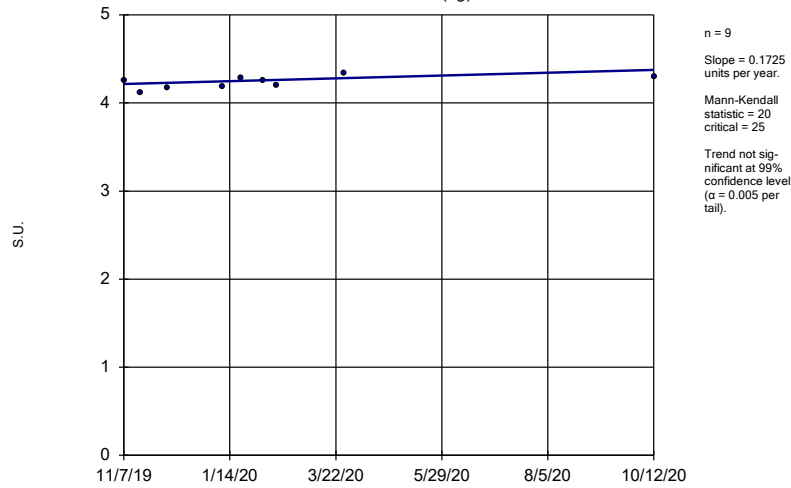
Sen's Slope Estimator

MCM-17



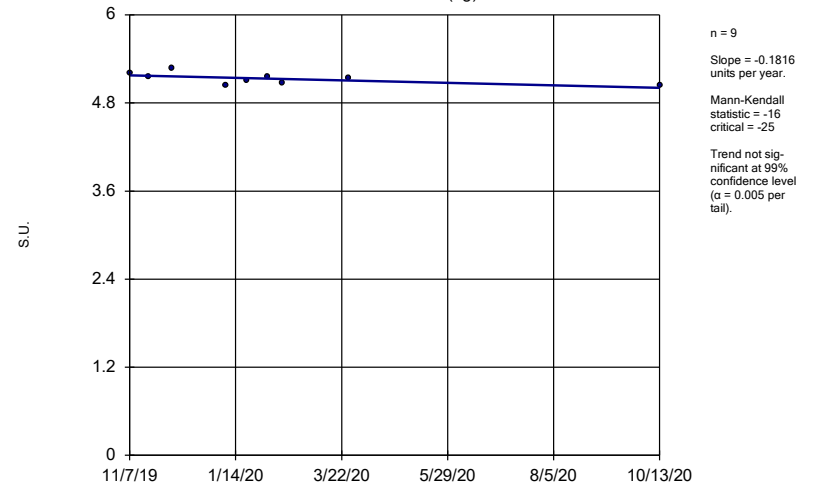
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 Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator
MCM-18 (bg)



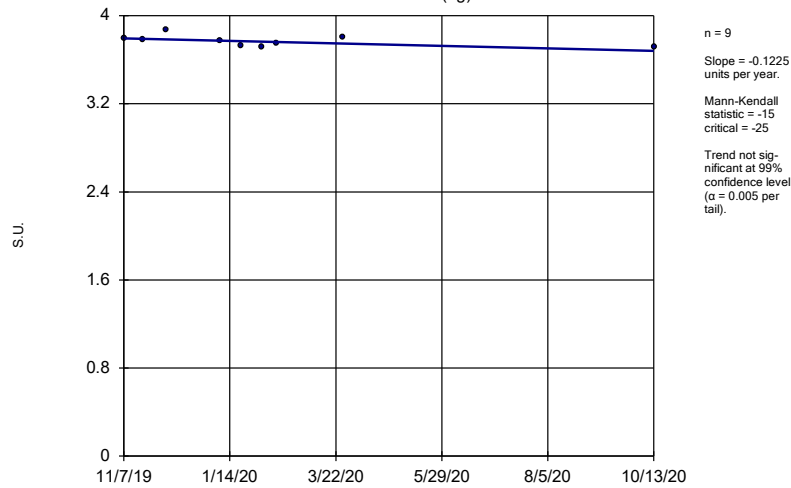
Constituent: pH Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator
MCM-19 (bg)



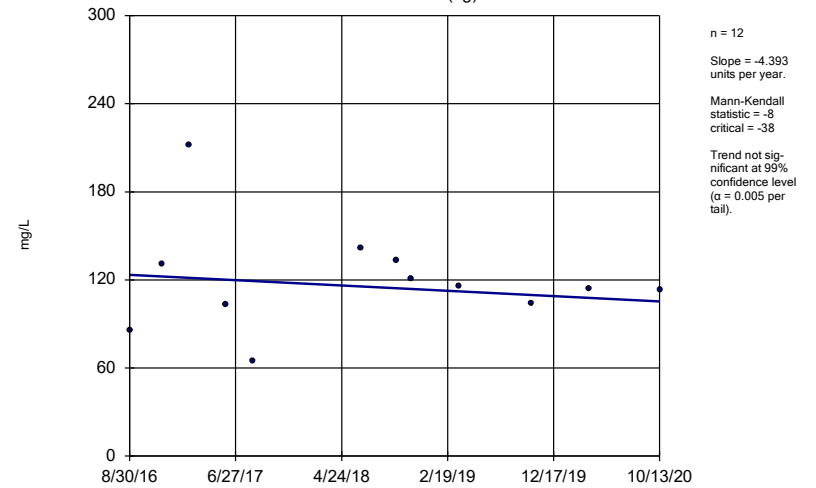
Constituent: pH Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator
MCM-20 (bg)



Constituent: pH Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
Plant McManus Client: Southern Company Data: McManus Ash Pond

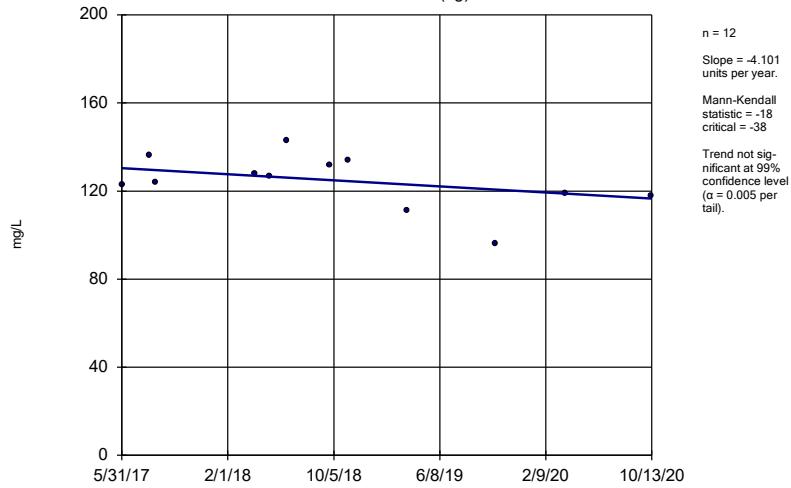
Sen's Slope Estimator
MCM-01 (bg)



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tests
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

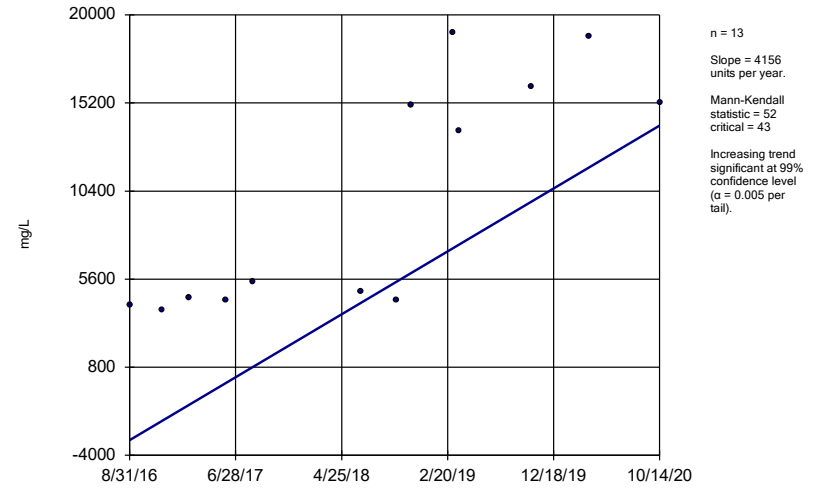
MCM-02 (bg)



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tes
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

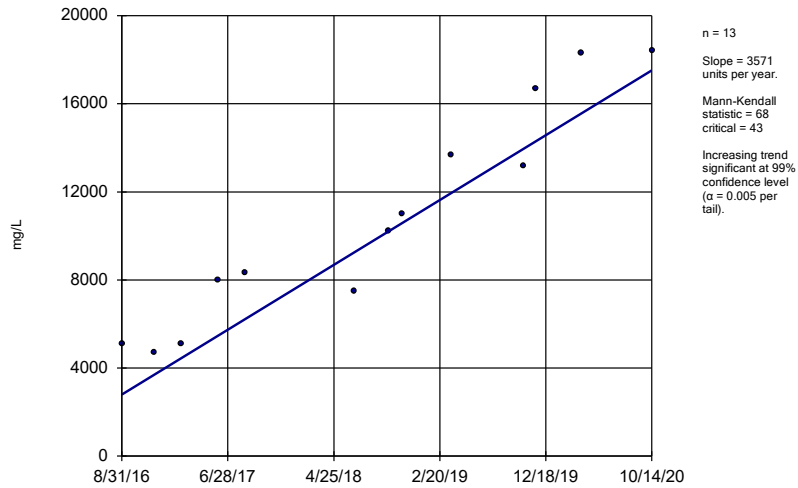
MCM-06



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tes
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

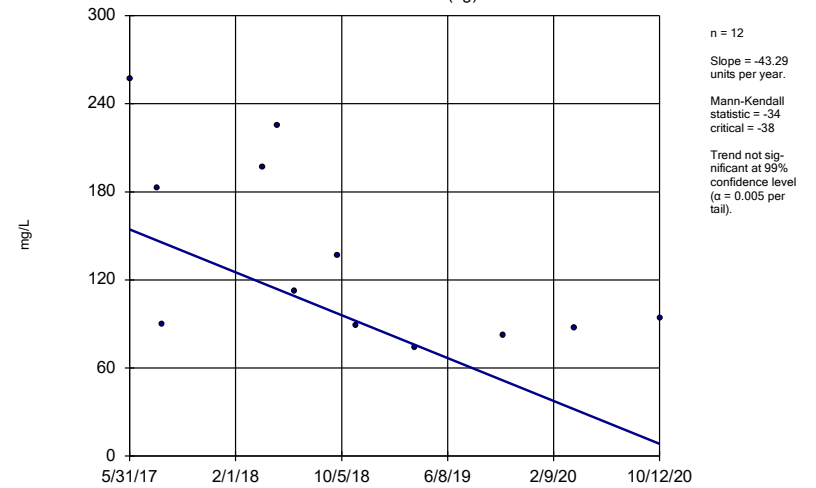
MCM-07



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tes
Plant McManus Client: Southern Company Data: McManus Ash Pond

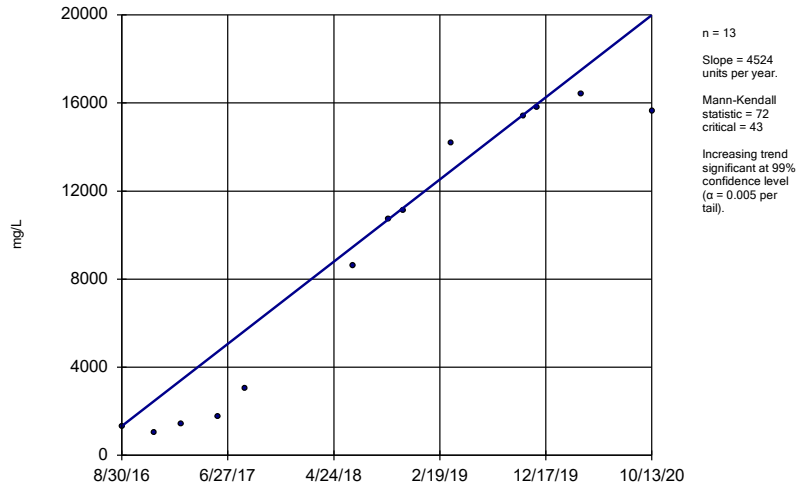
Sen's Slope Estimator

MCM-11 (bg)



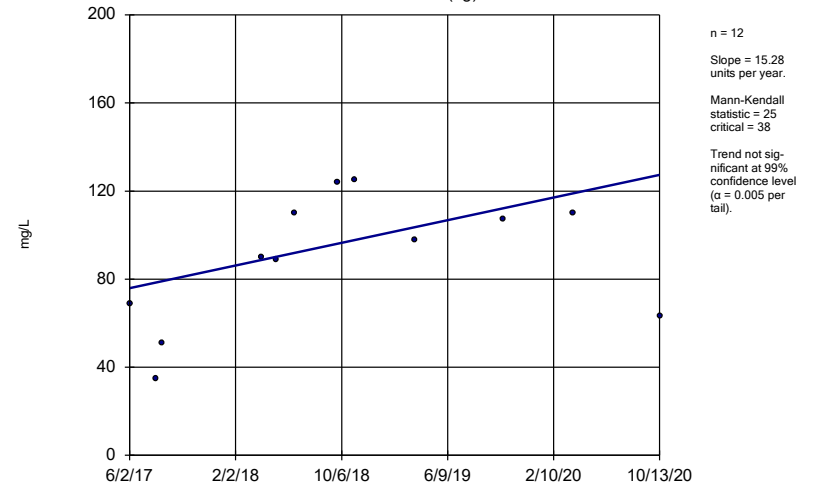
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tes
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator
MCM-14



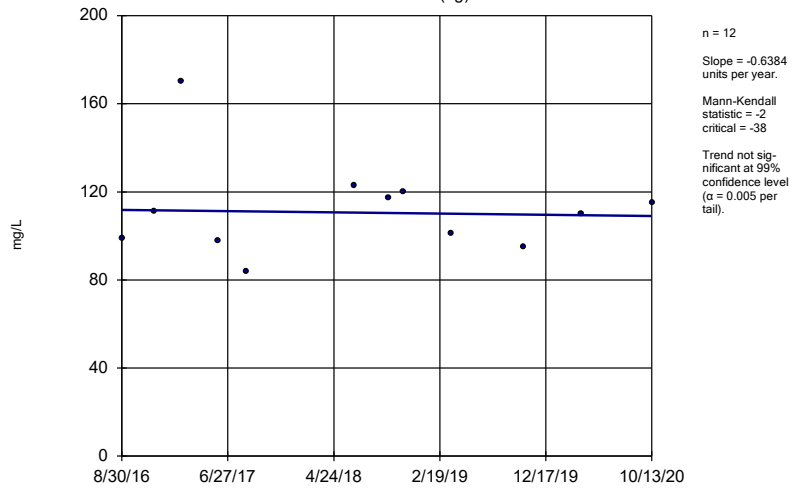
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tes
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator
MCM-15 (bg)



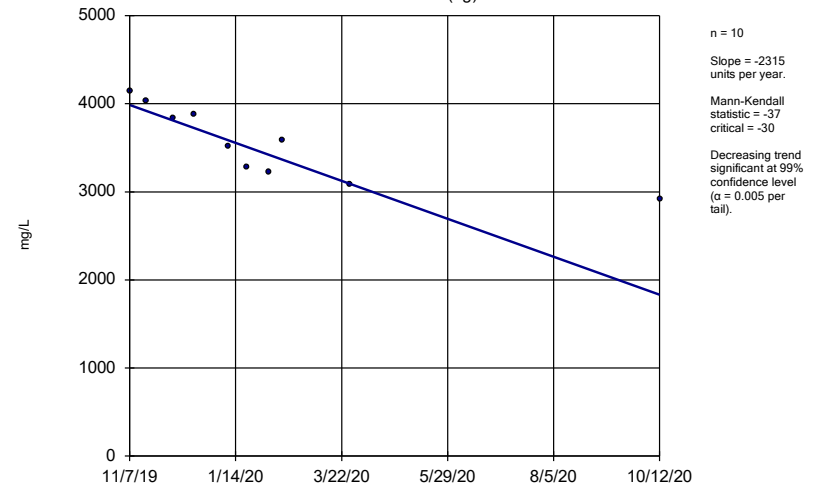
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tes
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator
MCM-16 (bg)



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tes
Plant McManus Client: Southern Company Data: McManus Ash Pond

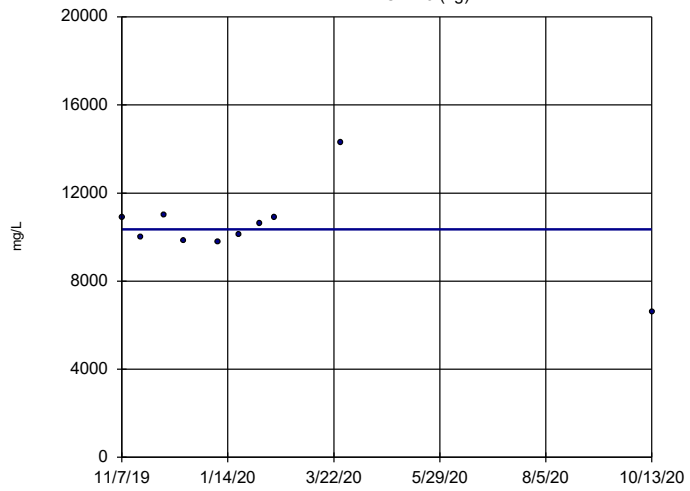
Sen's Slope Estimator
MCM-18 (bg)



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tes
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

MCM-19 (bg)

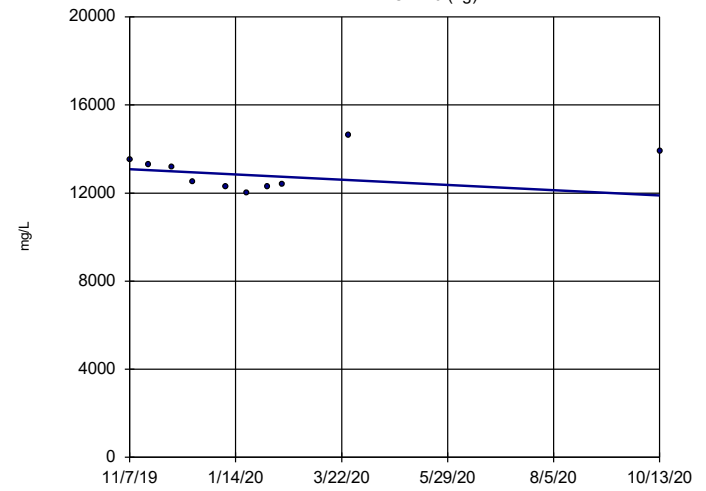


n = 10
Slope = 0
units per year.
Mann-Kendall
statistic = 0
critical = 30
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tes
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sen's Slope Estimator

MCM-20 (bg)



n = 10
Slope = -1278
units per year.
Mann-Kendall
statistic = -4
critical = -30
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/10/2020 3:33 PM View: Appendix III Trend Tes
Plant McManus Client: Southern Company Data: McManus Ash Pond

FIGURE F.

Upper Tolerance Limit Summary Table

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 1:06 PM

Constituent	Upper Lim.	Lower Lim.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	0.003	n/a	n/a	83	n/a	n/a	93.98	n/a	n/a	0.01416	NP Inter(NDs)
Arsenic (mg/L)	0.031	n/a	n/a	94	n/a	n/a	14.89	n/a	n/a	0.008054	NP Inter(normality)
Barium (mg/L)	0.22	n/a	n/a	91	n/a	n/a	0	n/a	n/a	0.009394	NP Inter(normality)
Beryllium (mg/L)	0.021	n/a	n/a	90	n/a	n/a	22.22	n/a	n/a	0.009888	NP Inter(normality)
Cadmium (mg/L)	0.0025	n/a	n/a	77	n/a	n/a	92.21	n/a	n/a	0.01926	NP Inter(NDs)
Chromium (mg/L)	0.011	n/a	n/a	83	n/a	n/a	46.99	n/a	n/a	0.01416	NP Inter(normality)
Cobalt (mg/L)	0.036	n/a	n/a	90	n/a	n/a	74.44	n/a	n/a	0.009888	NP Inter(NDs)
Combined Radium 226 + 228 (pCi/L)	55.8	n/a	n/a	89	n/a	n/a	0	n/a	n/a	0.01041	NP Inter(normality)
Fluoride (mg/L)	1.5	n/a	n/a	95	n/a	n/a	40	n/a	n/a	0.007651	NP Inter(normality)
Lead (mg/L)	0.005	n/a	n/a	90	n/a	n/a	78.89	n/a	n/a	0.009888	NP Inter(NDs)
Lithium (mg/L)	0.03	n/a	n/a	87	n/a	n/a	52.87	n/a	n/a	0.01153	NP Inter(NDs)
Mercury (mg/L)	0.0007	n/a	n/a	77	n/a	n/a	93.51	n/a	n/a	0.01926	NP Inter(NDs)
Molybdenum (mg/L)	0.01	n/a	n/a	82	n/a	n/a	93.9	n/a	n/a	0.01491	NP Inter(NDs)
Selenium (mg/L)	0.15	n/a	n/a	91	n/a	n/a	59.34	n/a	n/a	0.009394	NP Inter(NDs)
Thallium (mg/L)	0.001	n/a	n/a	82	n/a	n/a	91.46	n/a	n/a	0.01491	NP Inter(NDs)

FIGURE G.

MCMANUS ASH POND GWPS					
Constituent Name	MCL	CCR-Rule Specified	Background Limit	Federal GWPS	State GWPS
Antimony, Total (mg/L)	0.006		0.003	0.006	0.006
Arsenic, Total (mg/L)	0.01		0.031	0.031	0.031
Barium, Total (mg/L)	2		0.22	2	2
Beryllium, Total (mg/L)	0.004		0.021	0.021	0.021
Cadmium, Total (mg/L)	0.005		0.0025	0.005	0.005
Chromium, Total (mg/L)	0.1		0.011	0.1	0.1
Cobalt, Total (mg/L)		0.006	0.036	0.036	0.036
Combined Radium, Total (pCi/L)	5		55.8	55.8	55.8
Fluoride, Total (mg/L)	4		1.5	4	4
Lead, Total (mg/L)		0.015	0.005	0.015	0.005
Lithium, Total (mg/L)		0.04	0.03	0.04	0.03
Mercury, Total (mg/L)	0.002		0.0007	0.002	0.002
Molybdenum, Total (mg/L)		0.1	0.01	0.1	0.01
Selenium, Total (mg/L)	0.05		0.15	0.15	0.15
Thallium, Total (mg/L)	0.002		0.001	0.002	0.002

**Grey cell indicates Background Limit is higher than MCL or CCR-Rule Specified Level*

**MCL = Maximum Contaminant Level*

**CCR = Coal Combustion Residual*

**GWPS = Groundwater Protection Standard*

FIGURE H.

Federal Confidence Intervals - Significant Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:38 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	MCM-06	0.4372	0.2568	0.031	Yes 16	0.347	0.1386	0	None	No	0.01	Param.
Lithium (mg/L)	MCM-06	0.1033	0.05003	0.04	Yes 13	0.07665	0.03579	0	None	No	0.01	Param.

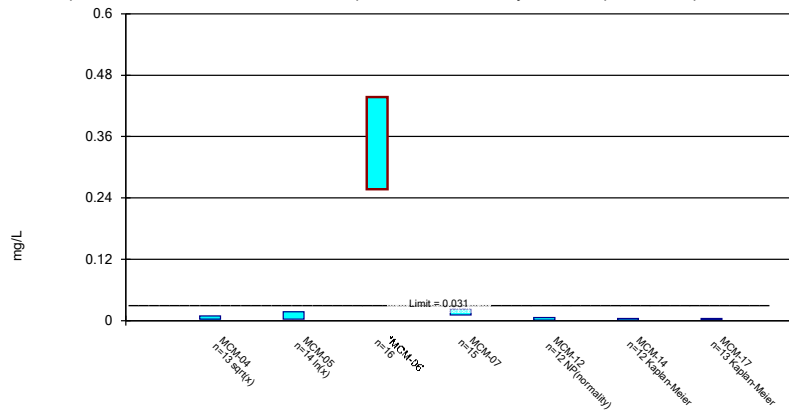
Federal Confidence Intervals - All Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:38 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MCM-04	0.008885	0.00297	0.031	No 13	0.006192	0.004404	0	None	sqrt(x)	0.01	Param.
Arsenic (mg/L)	MCM-05	0.01701	0.003101	0.031	No 14	0.01329	0.01351	14.29	None	ln(x)	0.01	Param.
Arsenic (mg/L)	MCM-06	0.4372	0.2568	0.031	Yes 16	0.347	0.1386	0	None	No	0.01	Param.
Arsenic (mg/L)	MCM-07	0.02247	0.01077	0.031	No 15	0.01662	0.008628	0	None	No	0.01	Param.
Arsenic (mg/L)	MCM-12	0.0057	0.0007	0.031	No 12	0.003133	0.002126	41.67	None	No	0.01	NP (normality)
Arsenic (mg/L)	MCM-14	0.003992	0.000891	0.031	No 12	0.003842	0.002106	41.67	Kaplan-Meier	No	0.01	Param.
Arsenic (mg/L)	MCM-17	0.003985	0.001615	0.031	No 13	0.003569	0.001806	30.77	Kaplan-Meier	No	0.01	Param.
Barium (mg/L)	MCM-04	0.1122	0.02821	2	No 12	0.0765	0.08077	0	None	x^(1/3)	0.01	Param.
Barium (mg/L)	MCM-05	0.0393	0.0085	2	No 12	0.05243	0.1256	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-06	0.16	0.0508	2	No 13	0.09681	0.04945	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-07	0.35	0.0865	2	No 12	0.1585	0.1054	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-12	0.1313	0.1115	2	No 12	0.1214	0.01265	0	None	No	0.01	Param.
Barium (mg/L)	MCM-14	0.1172	0.04197	2	No 12	0.07959	0.04795	0	None	No	0.01	Param.
Barium (mg/L)	MCM-17	0.1207	0.05127	2	No 12	0.08599	0.04425	0	None	No	0.01	Param.
Beryllium (mg/L)	MCM-04	0.003	0.0002	0.021	No 12	0.0009842	0.001226	25	None	No	0.01	NP (normality)
Beryllium (mg/L)	MCM-05	0.003	0.000054	0.021	No 12	0.002755	0.0008504	91.67	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-07	0.003	0.000078	0.021	No 12	0.002273	0.001316	75	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-12	0.001046	0.0004115	0.021	No 12	0.0008067	0.0007217	8.333	None	ln(x)	0.01	Param.
Beryllium (mg/L)	MCM-14	0.003	0.000097	0.021	No 12	0.001796	0.001489	58.33	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-17	0.003	0.00018	0.021	No 12	0.0009367	0.001246	25	None	No	0.01	NP (normality)
Cobalt (mg/L)	MCM-04	0.0085	0.0048	0.036	No 13	0.005808	0.001585	53.85	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-05	0.005	0.0019	0.036	No 12	0.004742	0.0008949	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-06	0.005	0.0009	0.036	No 13	0.004323	0.001657	84.62	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-07	0.005	0.0011	0.036	No 12	0.004675	0.001126	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-12	0.005	0.0005	0.036	No 12	0.003147	0.00229	58.33	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-14	0.005	0.0006	0.036	No 12	0.004633	0.00127	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-17	0.005	0.00052	0.036	No 12	0.003885	0.002018	75	None	No	0.01	NP (NDs)
Combined Radium 226 + 228 (pCi/L)	MCM-04	6.51	3.244	55.8	No 12	4.946	2.295	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-05	2.292	1.408	55.8	No 12	1.85	0.5634	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-06	7.31	2.299	55.8	No 12	4.977	3.404	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-07	9.49	5.019	55.8	No 13	7.255	3.006	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-12	3.221	2.079	55.8	No 12	2.65	0.7272	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-14	7.357	2.466	55.8	No 13	4.911	3.289	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-17	6.245	2.31	55.8	No 13	4.508	2.942	0	None	x^(1/3)	0.01	Param.
Fluoride (mg/L)	MCM-04	0.1852	0.05378	4	No 13	0.1472	0.1369	46.15	Kaplan-Meier	ln(x)	0.01	Param.
Fluoride (mg/L)	MCM-05	0.569	0.3167	4	No 14	0.4629	0.2203	0	None	ln(x)	0.01	Param.
Fluoride (mg/L)	MCM-06	0.3095	0.0941	4	No 13	0.2114	0.156	38.46	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	MCM-07	0.54	0.1	4	No 14	0.319	0.3039	35.71	None	No	0.01	NP (normality)
Fluoride (mg/L)	MCM-12	1.301	0.9339	4	No 13	1.085	0.3385	7.692	None	x^2	0.01	Param.
Fluoride (mg/L)	MCM-14	0.5	0.084	4	No 14	0.2503	0.208	50	None	No	0.01	NP (normality)
Fluoride (mg/L)	MCM-17	1.3	0.1	4	No 14	0.6024	0.5186	28.57	None	No	0.01	NP (normality)
Lead (mg/L)	MCM-05	0.005	0.0002	0.015	No 12	0.0046	0.001386	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-06	0.005	0.00012	0.015	No 13	0.004625	0.001353	92.31	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-07	0.005	0.0001	0.015	No 12	0.003782	0.002204	75	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-12	0.005	0.00009	0.015	No 12	0.003372	0.002405	66.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-14	0.005	0.00008	0.015	No 12	0.00459	0.00142	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-17	0.005	0.0002	0.015	No 12	0.003412	0.002345	66.67	None	No	0.01	NP (NDs)
Lithium (mg/L)	MCM-04	0.015	0.0013	0.04	No 12	0.0074	0.00674	41.67	None	No	0.01	NP (normality)
Lithium (mg/L)	MCM-05	0.0376	0.021	0.04	No 12	0.07259	0.1568	0	None	No	0.01	NP (normality)
Lithium (mg/L)	MCM-06	0.1033	0.05003	0.04	Yes 13	0.07665	0.03579	0	None	No	0.01	Param.
Lithium (mg/L)	MCM-07	0.06471	0.01819	0.04	No 13	0.04518	0.0395	0	None	x^(1/3)	0.01	Param.
Lithium (mg/L)	MCM-12	0.01281	0.01079	0.04	No 12	0.0118	0.001281	8.333	None	No	0.01	Param.
Lithium (mg/L)	MCM-14	0.05107	0.02921	0.04	No 13	0.03529	0.01949	7.692	None	x^3	0.01	Param.
Lithium (mg/L)	MCM-17	0.02511	0.01348	0.04	No 12	0.01929	0.00741	0	None	No	0.01	Param.
Selenium (mg/L)	MCM-04	0.01	0.0025	0.15	No 12	0.009375	0.002165	91.67	None	No	0.01	NP (NDs)
Selenium (mg/L)	MCM-05	0.01	0.002	0.15	No 12	0.007425	0.003809	66.67	None	No	0.01	NP (NDs)
Selenium (mg/L)	MCM-06	0.01	0.0015	0.15	No 13	0.006077	0.003738	38.46	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-07	0.01	0.0021	0.15	No 12	0.005983	0.003667	41.67	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-12	0.01	0.0017	0.15	No 12	0.005267	0.004188	41.67	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-14	0.01	0.0018	0.15	No 12	0.006358	0.003947	50	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-17	0.01	0.0018	0.15	No 12	0.006342	0.003841	41.67	None	No	0.01	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

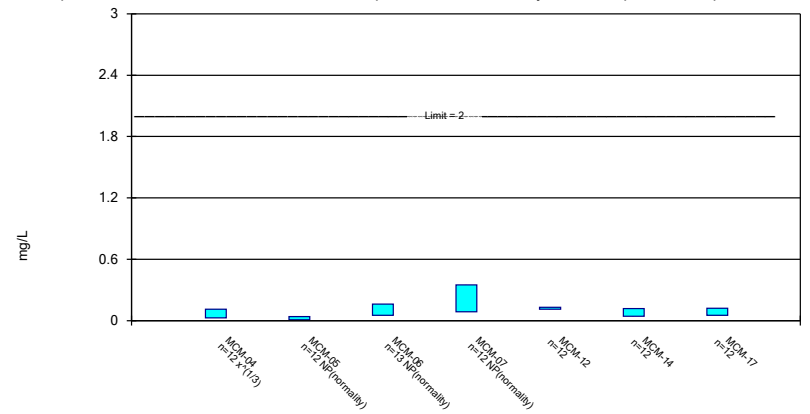
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 12/10/2020 3:37 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

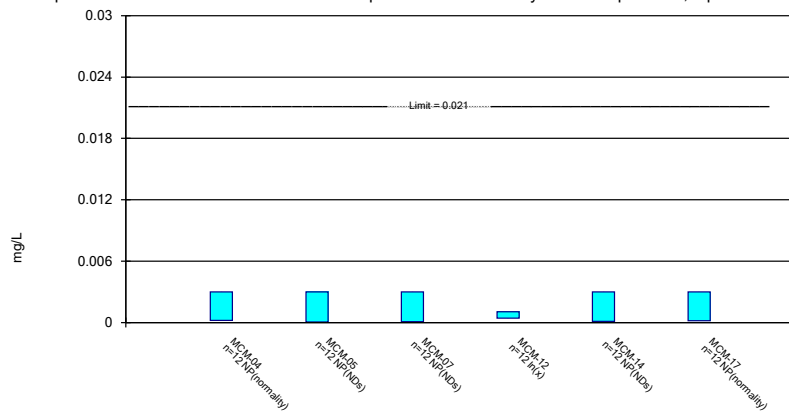
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Constituent: Barium Analysis Run 12/10/2020 3:37 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

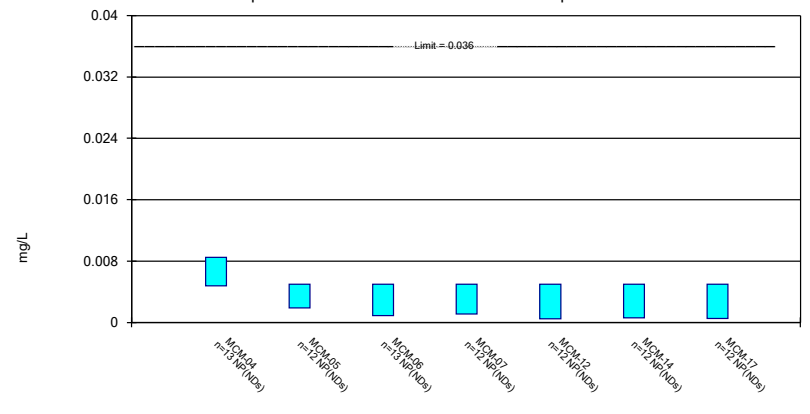
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium Analysis Run 12/10/2020 3:37 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

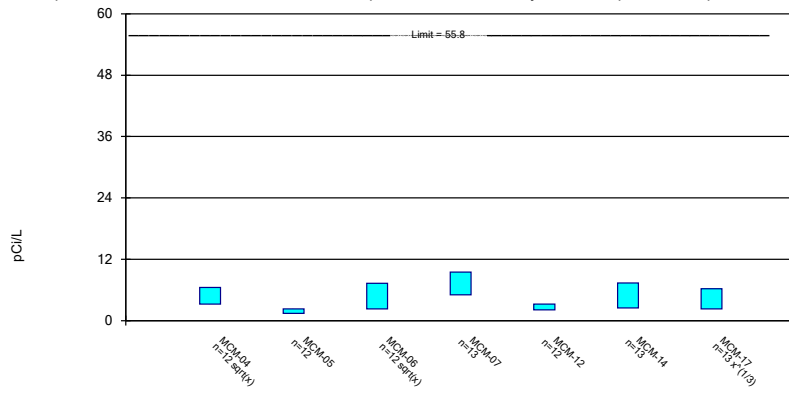
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cobalt Analysis Run 12/10/2020 3:37 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric Confidence Interval

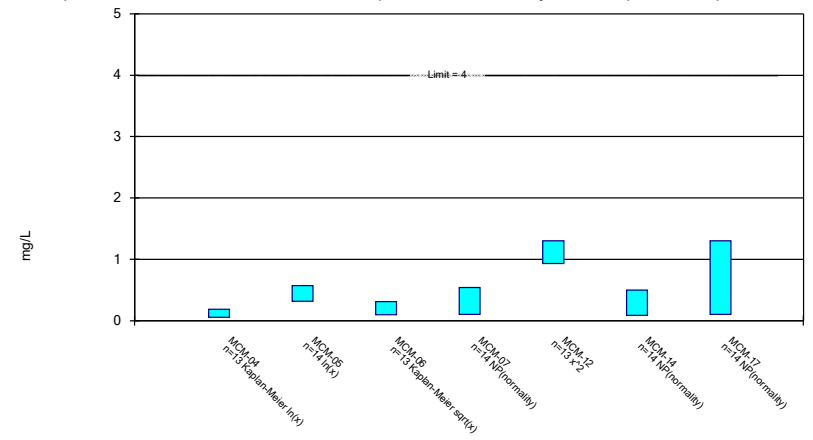
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 12/10/2020 3:37 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

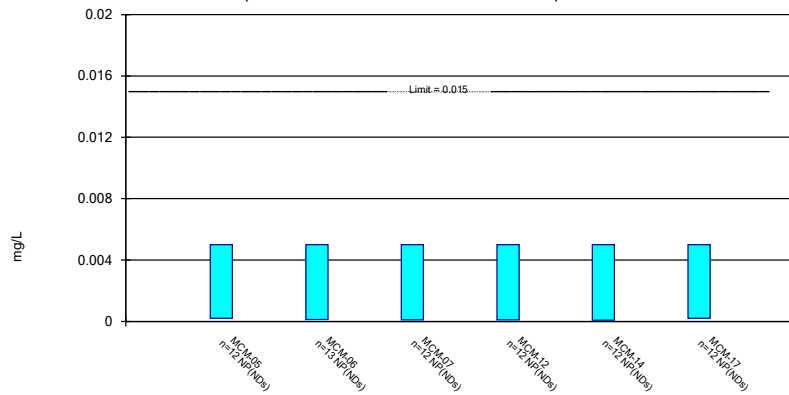
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Constituent: Fluoride Analysis Run 12/10/2020 3:37 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

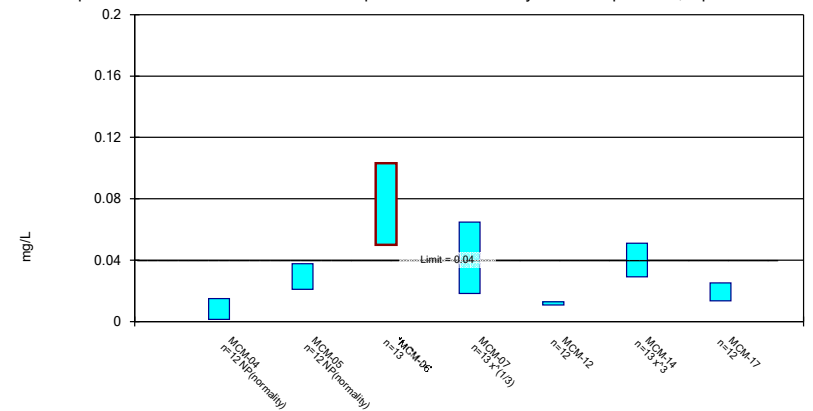
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 12/10/2020 3:37 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

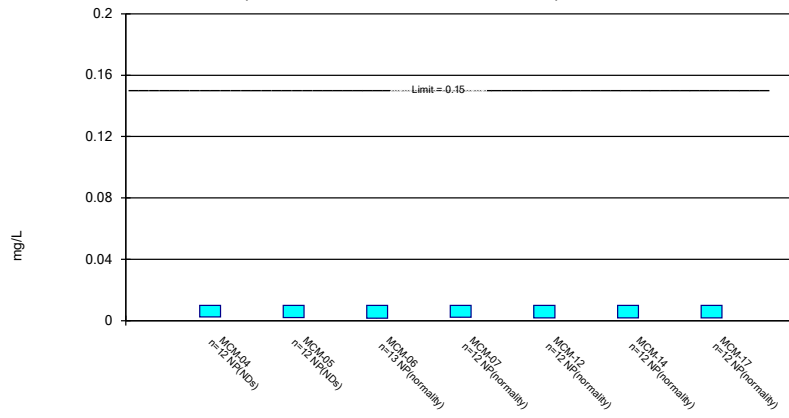
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 12/10/2020 3:37 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium Analysis Run 12/10/2020 3:37 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

FIGURE I.

State Confidence Intervals - Significant Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:36 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig. N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	MCM-06	0.4372	0.2568	0.031	Yes 16	0.347	0.1386	0	None	No	0.01	Param.
Lithium (mg/L)	MCM-06	0.1033	0.05003	0.03	Yes 13	0.07665	0.03579	0	None	No	0.01	Param.

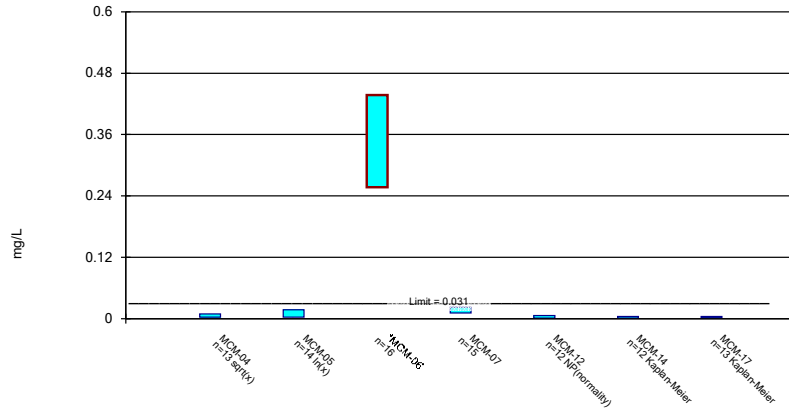
State Confidence Intervals - All Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 12/10/2020, 3:36 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MCM-04	0.008885	0.00297	0.031	No 13	0.006192	0.004404	0	None	sqrt(x)	0.01	Param.
Arsenic (mg/L)	MCM-05	0.01701	0.003101	0.031	No 14	0.01329	0.01351	14.29	None	ln(x)	0.01	Param.
Arsenic (mg/L)	MCM-06	0.4372	0.2568	0.031	Yes 16	0.347	0.1386	0	None	No	0.01	Param.
Arsenic (mg/L)	MCM-07	0.02247	0.01077	0.031	No 15	0.01662	0.008628	0	None	No	0.01	Param.
Arsenic (mg/L)	MCM-12	0.0057	0.0007	0.031	No 12	0.003133	0.002126	41.67	None	No	0.01	NP (normality)
Arsenic (mg/L)	MCM-14	0.003992	0.000891	0.031	No 12	0.003842	0.002106	41.67	Kaplan-Meier	No	0.01	Param.
Arsenic (mg/L)	MCM-17	0.003985	0.001615	0.031	No 13	0.003569	0.001806	30.77	Kaplan-Meier	No	0.01	Param.
Barium (mg/L)	MCM-04	0.1122	0.02821	2	No 12	0.0765	0.08077	0	None	x^(1/3)	0.01	Param.
Barium (mg/L)	MCM-05	0.0393	0.0085	2	No 12	0.05243	0.1256	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-06	0.16	0.0508	2	No 13	0.09681	0.04945	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-07	0.35	0.0865	2	No 12	0.1585	0.1054	0	None	No	0.01	NP (normality)
Barium (mg/L)	MCM-12	0.1313	0.1115	2	No 12	0.1214	0.01265	0	None	No	0.01	Param.
Barium (mg/L)	MCM-14	0.1172	0.04197	2	No 12	0.07959	0.04795	0	None	No	0.01	Param.
Barium (mg/L)	MCM-17	0.1207	0.05127	2	No 12	0.08599	0.04425	0	None	No	0.01	Param.
Beryllium (mg/L)	MCM-04	0.003	0.0002	0.021	No 12	0.0009842	0.001226	25	None	No	0.01	NP (normality)
Beryllium (mg/L)	MCM-05	0.003	0.000054	0.021	No 12	0.002755	0.0008504	91.67	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-07	0.003	0.000078	0.021	No 12	0.002273	0.001316	75	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-12	0.001046	0.0004115	0.021	No 12	0.0008067	0.0007217	8.333	None	ln(x)	0.01	Param.
Beryllium (mg/L)	MCM-14	0.003	0.000097	0.021	No 12	0.001796	0.001489	58.33	None	No	0.01	NP (NDs)
Beryllium (mg/L)	MCM-17	0.003	0.00018	0.021	No 12	0.0009367	0.001246	25	None	No	0.01	NP (normality)
Cobalt (mg/L)	MCM-04	0.0085	0.0048	0.036	No 13	0.005808	0.001585	53.85	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-05	0.005	0.0019	0.036	No 12	0.004742	0.0008949	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-06	0.005	0.0009	0.036	No 13	0.004323	0.001657	84.62	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-07	0.005	0.0011	0.036	No 12	0.004675	0.001126	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-12	0.005	0.0005	0.036	No 12	0.003147	0.00229	58.33	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-14	0.005	0.0006	0.036	No 12	0.004633	0.00127	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-17	0.005	0.00052	0.036	No 12	0.003885	0.002018	75	None	No	0.01	NP (NDs)
Combined Radium 226 + 228 (pCi/L)	MCM-04	6.51	3.244	55.8	No 12	4.946	2.295	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-05	2.292	1.408	55.8	No 12	1.85	0.5634	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-06	7.31	2.299	55.8	No 12	4.977	3.404	0	None	sqrt(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-07	9.49	5.019	55.8	No 13	7.255	3.006	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-12	3.221	2.079	55.8	No 12	2.65	0.7272	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-14	7.357	2.466	55.8	No 13	4.911	3.289	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MCM-17	6.245	2.31	55.8	No 13	4.508	2.942	0	None	x^(1/3)	0.01	Param.
Fluoride (mg/L)	MCM-04	0.1852	0.05378	4	No 13	0.1472	0.1369	46.15	Kaplan-Meier	ln(x)	0.01	Param.
Fluoride (mg/L)	MCM-05	0.569	0.3167	4	No 14	0.4629	0.2203	0	None	ln(x)	0.01	Param.
Fluoride (mg/L)	MCM-06	0.3095	0.0941	4	No 13	0.2114	0.156	38.46	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	MCM-07	0.54	0.1	4	No 14	0.319	0.3039	35.71	None	No	0.01	NP (normality)
Fluoride (mg/L)	MCM-12	1.301	0.9339	4	No 13	1.085	0.3385	7.692	None	x^2	0.01	Param.
Fluoride (mg/L)	MCM-14	0.5	0.084	4	No 14	0.2503	0.208	50	None	No	0.01	NP (normality)
Fluoride (mg/L)	MCM-17	1.3	0.1	4	No 14	0.6024	0.5186	28.57	None	No	0.01	NP (normality)
Lead (mg/L)	MCM-05	0.005	0.0002	0.005	No 12	0.0046	0.001386	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-06	0.005	0.00012	0.005	No 13	0.004625	0.001353	92.31	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-07	0.005	0.0001	0.005	No 12	0.003782	0.002204	75	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-12	0.005	0.00009	0.005	No 12	0.003372	0.002405	66.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-14	0.005	0.00008	0.005	No 12	0.00459	0.00142	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	MCM-17	0.005	0.0002	0.005	No 12	0.003412	0.002345	66.67	None	No	0.01	NP (NDs)
Lithium (mg/L)	MCM-04	0.015	0.0013	0.03	No 12	0.0074	0.00674	41.67	None	No	0.01	NP (normality)
Lithium (mg/L)	MCM-05	0.0376	0.021	0.03	No 12	0.07259	0.1568	0	None	No	0.01	NP (normality)
Lithium (mg/L)	MCM-06	0.1033	0.05003	0.03	Yes 13	0.07665	0.03579	0	None	No	0.01	Param.
Lithium (mg/L)	MCM-07	0.06471	0.01819	0.03	No 13	0.04518	0.0395	0	None	x^(1/3)	0.01	Param.
Lithium (mg/L)	MCM-12	0.01281	0.01079	0.03	No 12	0.0118	0.001281	8.333	None	No	0.01	Param.
Lithium (mg/L)	MCM-14	0.05107	0.02921	0.03	No 13	0.03529	0.01949	7.692	None	x^3	0.01	Param.
Lithium (mg/L)	MCM-17	0.02511	0.01348	0.03	No 12	0.01929	0.00741	0	None	No	0.01	Param.
Selenium (mg/L)	MCM-04	0.01	0.0025	0.15	No 12	0.009375	0.002165	91.67	None	No	0.01	NP (NDs)
Selenium (mg/L)	MCM-05	0.01	0.002	0.15	No 12	0.007425	0.003809	66.67	None	No	0.01	NP (NDs)
Selenium (mg/L)	MCM-06	0.01	0.0015	0.15	No 13	0.006077	0.003738	38.46	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-07	0.01	0.0021	0.15	No 12	0.005983	0.003667	41.67	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-12	0.01	0.0017	0.15	No 12	0.005267	0.004188	41.67	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-14	0.01	0.0018	0.15	No 12	0.006358	0.003947	50	None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-17	0.01	0.0018	0.15	No 12	0.006342	0.003841	41.67	None	No	0.01	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

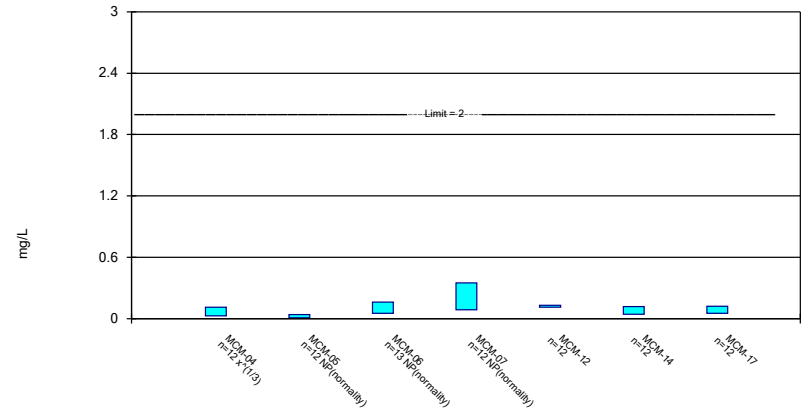
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 12/10/2020 3:35 PM View: Appendix IV
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

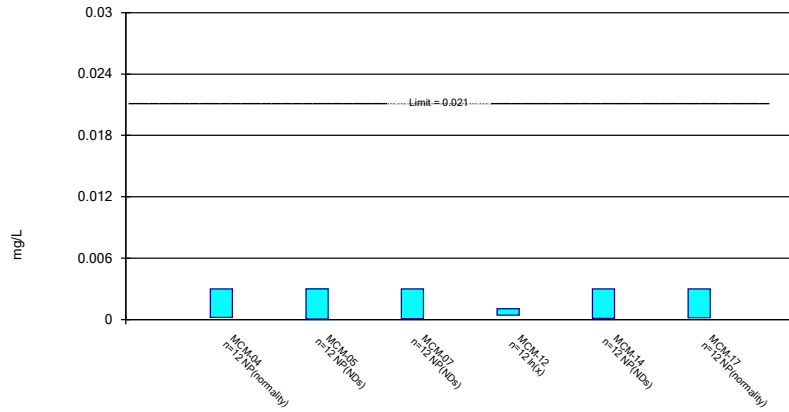
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 12/10/2020 3:35 PM View: Appendix IV
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

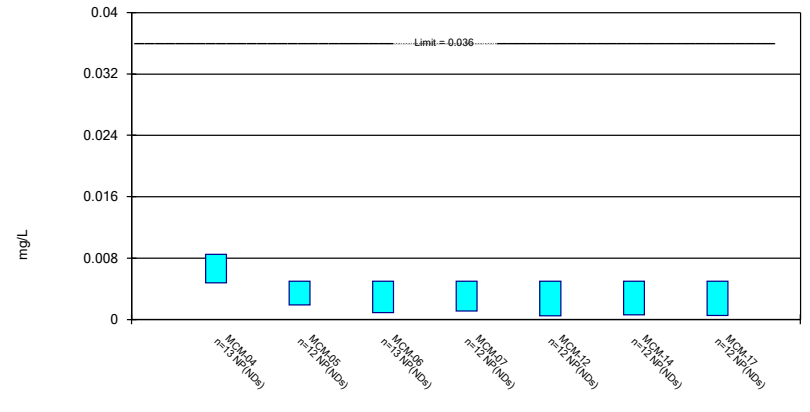
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium Analysis Run 12/10/2020 3:35 PM View: Appendix IV
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

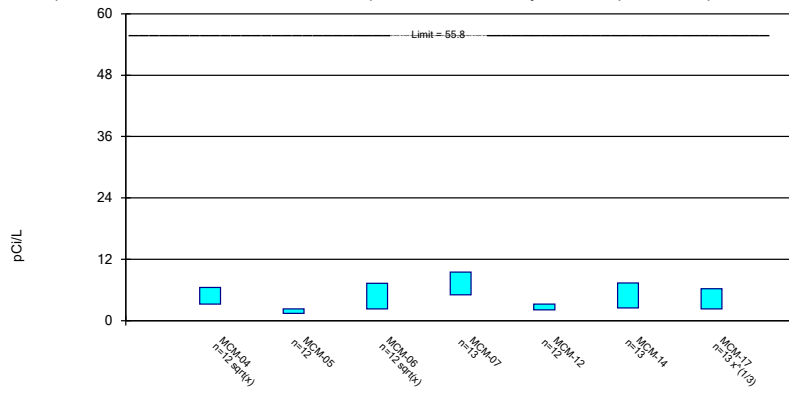
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cobalt Analysis Run 12/10/2020 3:35 PM View: Appendix IV
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric Confidence Interval

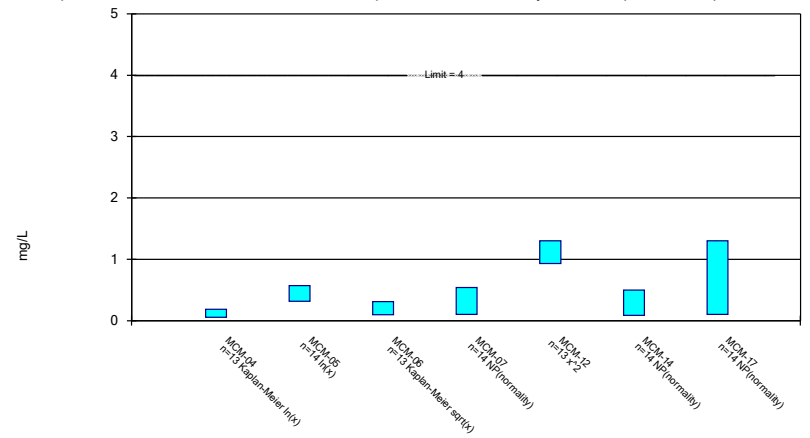
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 12/10/2020 3:35 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

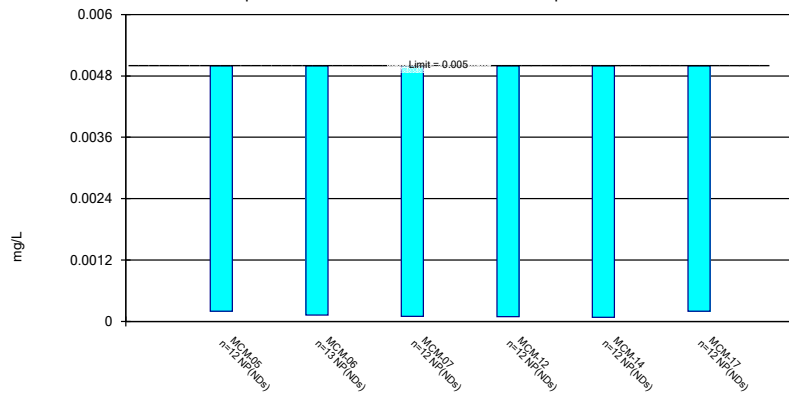
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 12/10/2020 3:35 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

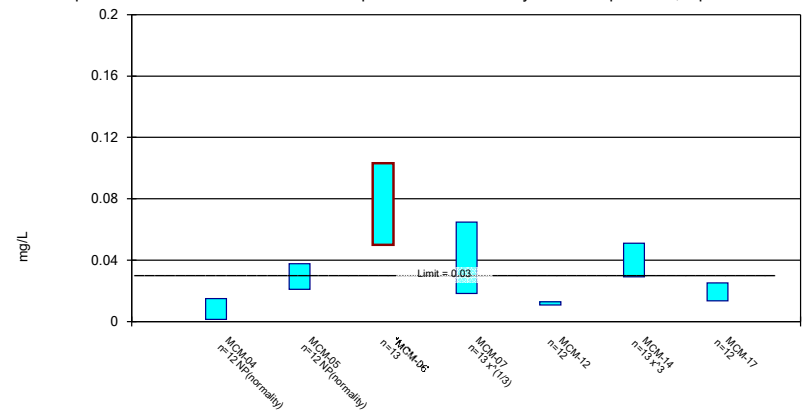
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 12/10/2020 3:35 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

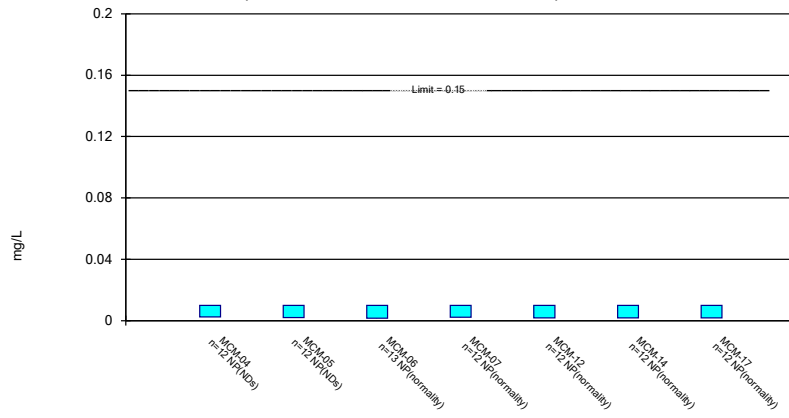
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 12/10/2020 3:35 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

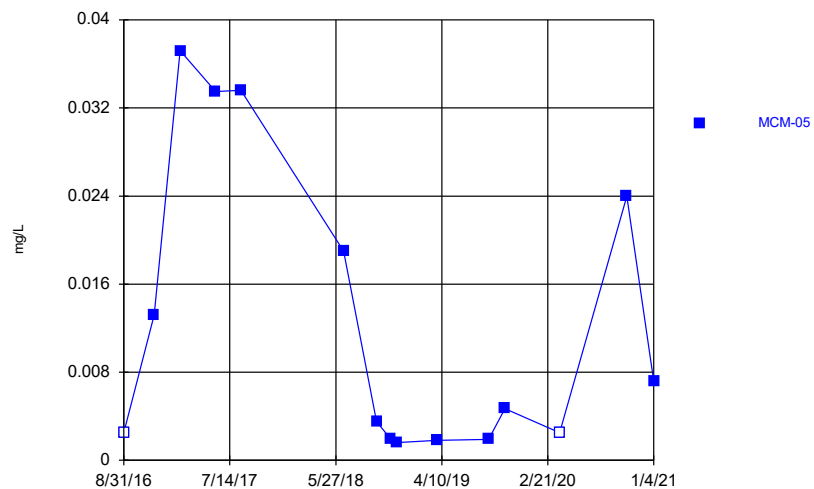
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium Analysis Run 12/10/2020 3:35 PM View: Appendix IV
Plant McManus Client: Southern Company Data: McManus Ash Pond

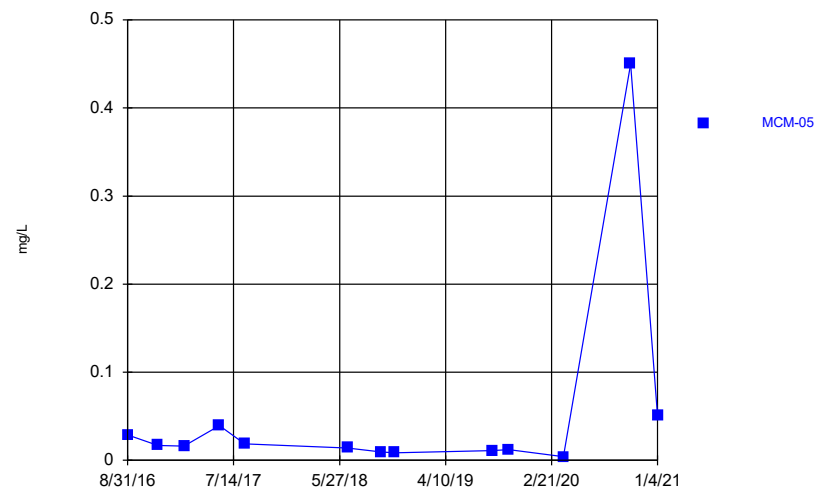
FIGURE J.

Time Series



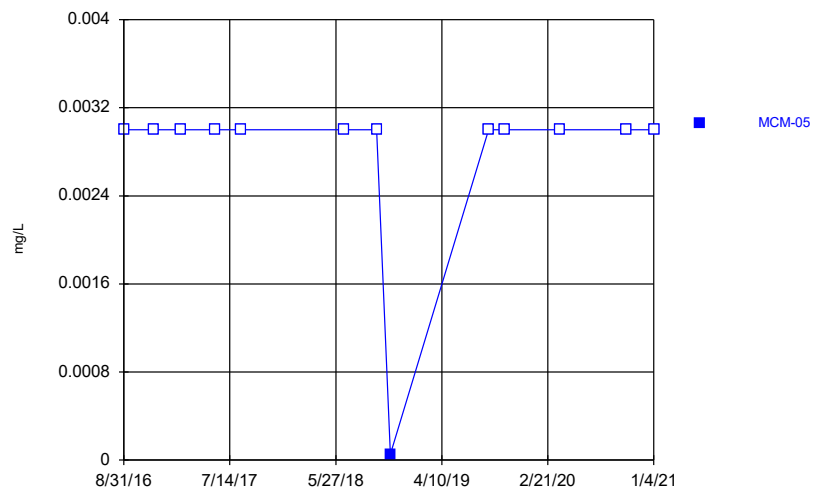
Constituent: Arsenic Analysis Run 2/16/2021 3:26 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



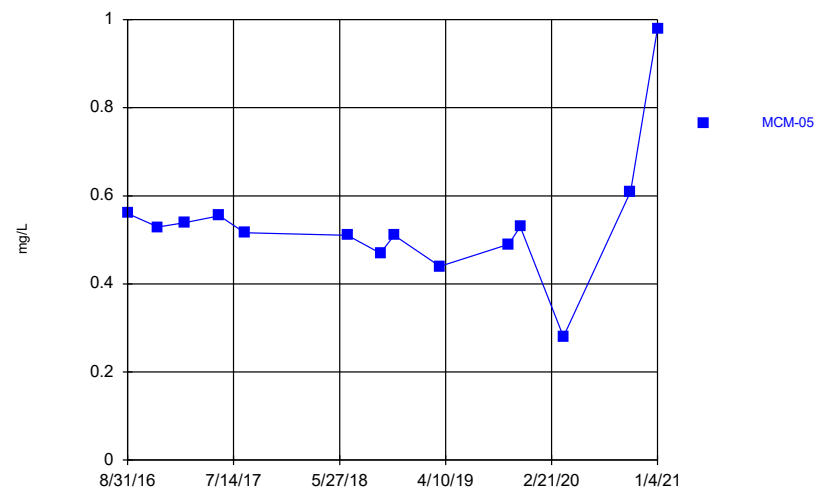
Constituent: Barium Analysis Run 2/16/2021 3:26 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



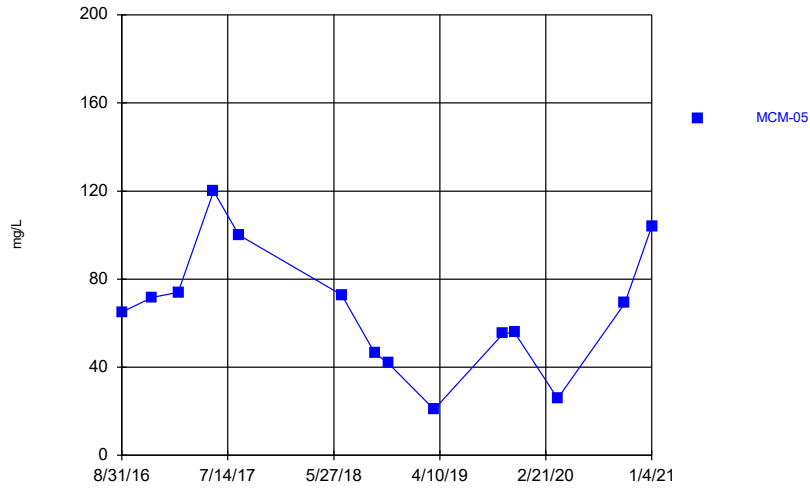
Constituent: Beryllium Analysis Run 2/16/2021 3:26 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



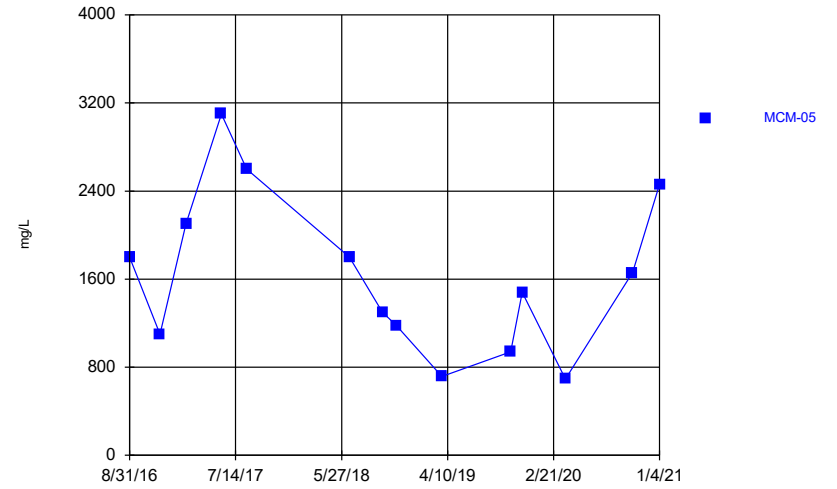
Constituent: Boron Analysis Run 2/16/2021 3:26 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



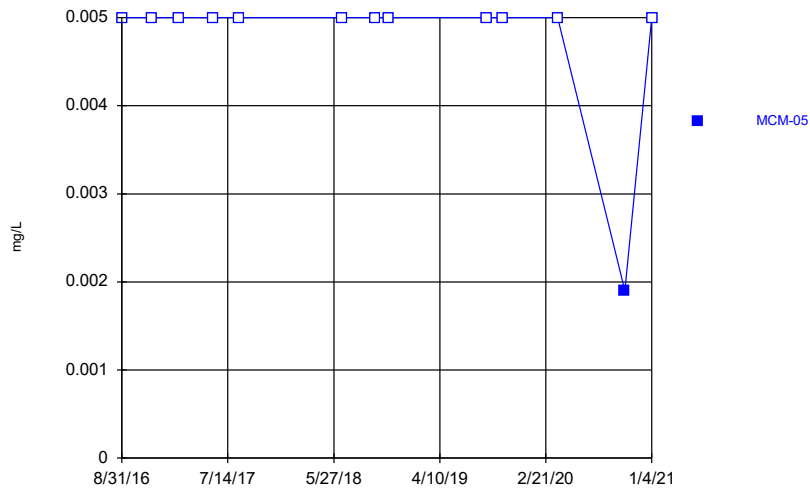
Constituent: Calcium Analysis Run 2/16/2021 3:26 PM View: Addendum Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



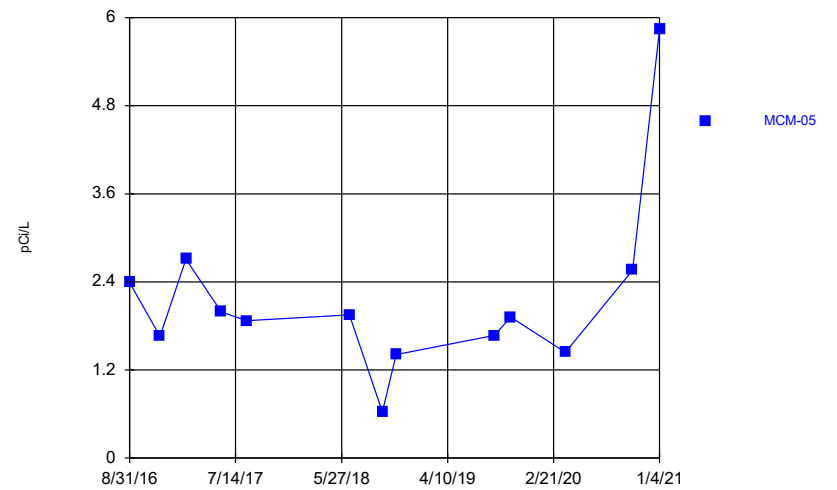
Constituent: Chloride Analysis Run 2/16/2021 3:26 PM View: Addendum Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



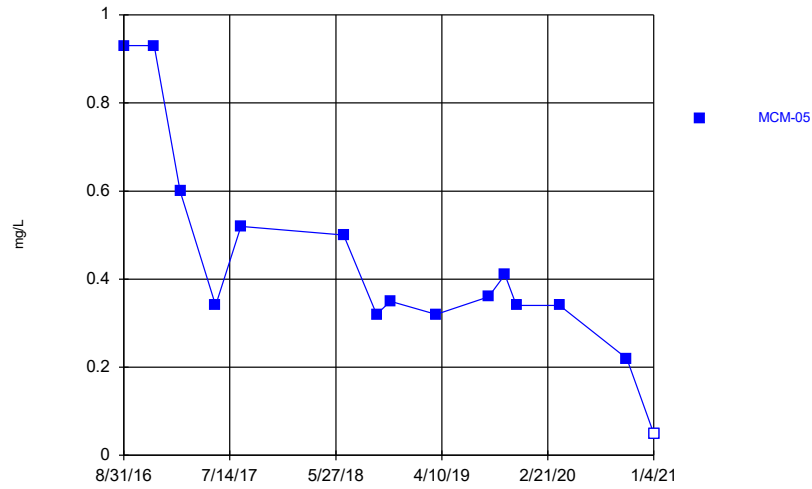
Constituent: Cobalt Analysis Run 2/16/2021 3:26 PM View: Addendum Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



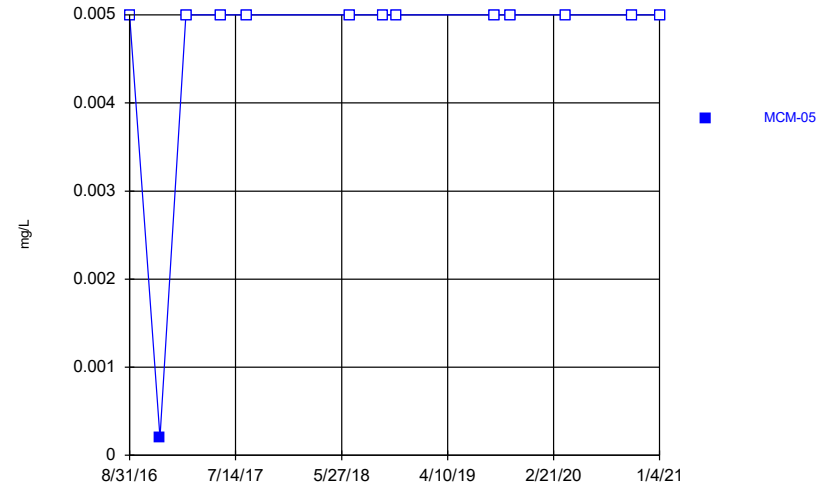
Constituent: Combined Radium 226 + 228 Analysis Run 2/16/2021 3:26 PM View: Addendum Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



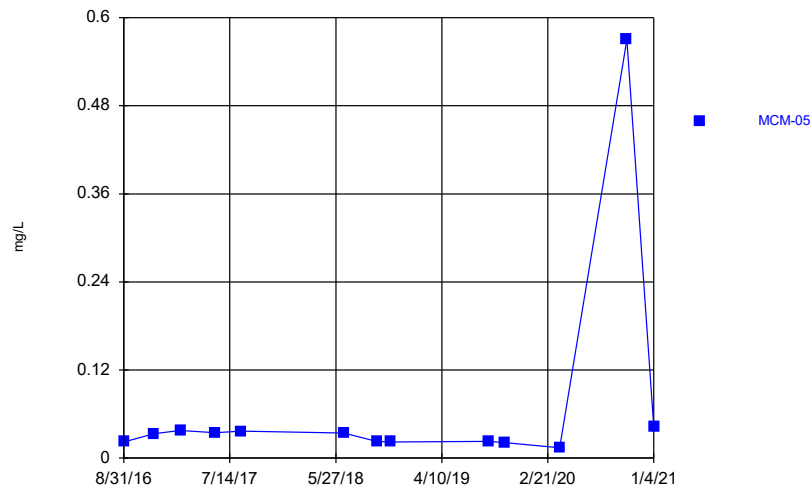
Constituent: Fluoride Analysis Run 2/16/2021 3:26 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



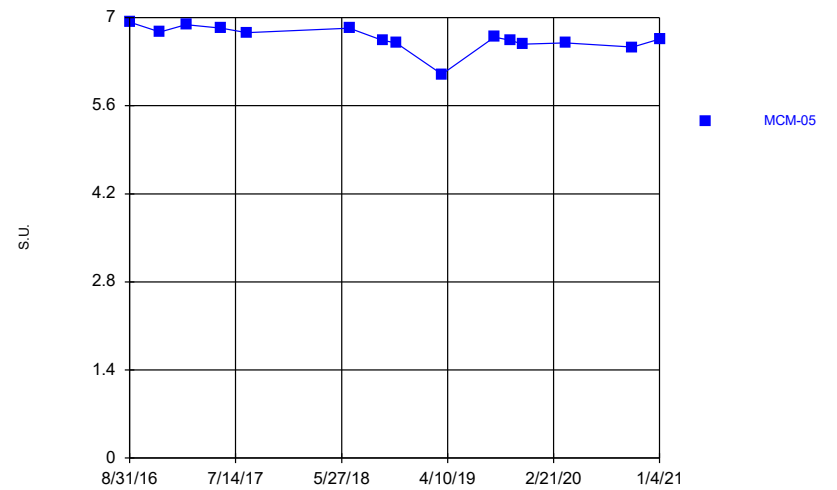
Constituent: Lead Analysis Run 2/16/2021 3:26 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



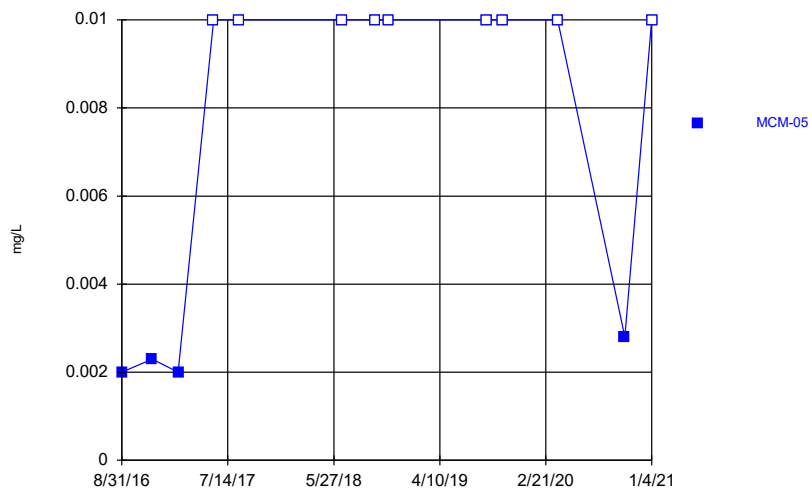
Constituent: Lithium Analysis Run 2/16/2021 3:26 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



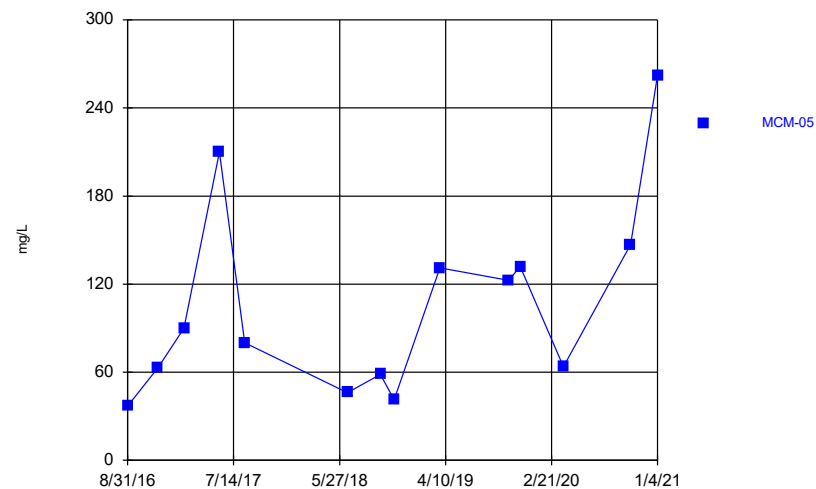
Constituent: pH Analysis Run 2/16/2021 3:26 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



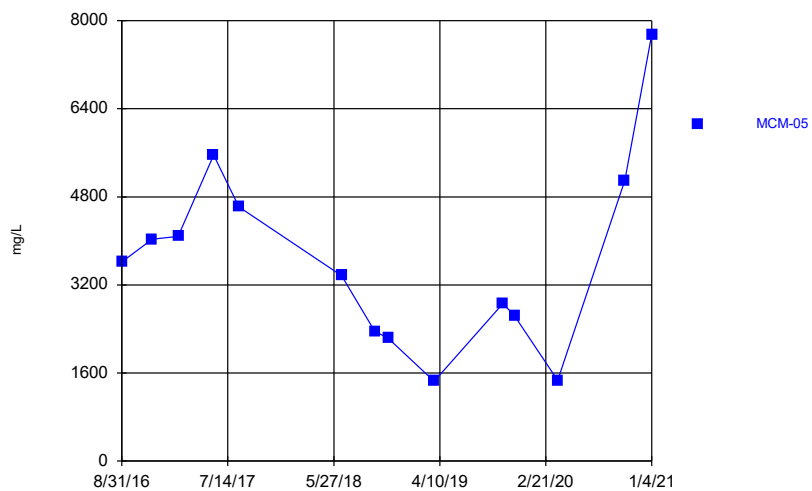
Constituent: Selenium Analysis Run 2/16/2021 3:26 PM View: Addendum
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



Constituent: Sulfate Analysis Run 2/16/2021 3:26 PM View: Addendum
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 2/16/2021 3:26 PM View: Addendum
 Plant McManus Client: Southern Company Data: McManus Ash Pond

Time Series

Constituent: Arsenic (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.005
11/30/2016	0.0132
2/16/2017	0.0372
6/2/2017	0.0335
8/17/2017	0.0336
6/20/2018	0.019
9/27/2018	0.0035 (J)
11/7/2018	0.002 (J)
11/27/2018	0.0016 (J)
3/26/2019	0.0018 (J)
8/28/2019	0.0019 (J)
10/16/2019	0.0047 (J)
3/28/2020	<0.005
10/15/2020	0.024
1/4/2021	0.0072

Time Series

Constituent: Barium (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.0289
11/30/2016	0.0168
2/16/2017	0.016
6/2/2017	0.0393 (J)
8/17/2017	0.0188
6/20/2018	0.014
9/27/2018	0.0097 (J)
11/7/2018	0.0085 (J)
8/28/2019	0.011
10/16/2019	0.012
3/28/2020	0.0041 (J)
10/15/2020	0.45
1/4/2021	0.051

Time Series

Constituent: Beryllium (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.003
11/30/2016	<0.003
2/16/2017	<0.003
6/2/2017	<0.003
8/17/2017	<0.003
6/20/2018	<0.003
9/27/2018	<0.003
11/7/2018	5.4E-05 (J)
8/28/2019	<0.003
10/16/2019	<0.003
3/28/2020	<0.003
10/15/2020	<0.003
1/4/2021	<0.003

Time Series

Constituent: Boron (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.56
11/30/2016	0.529
2/16/2017	0.539
6/2/2017	0.555
8/17/2017	0.516
6/20/2018	0.51
9/27/2018	0.47
11/7/2018	0.51
3/24/2019	0.44
10/16/2019	0.49
11/20/2019	0.53
3/28/2020	0.28 (J)
10/15/2020	0.61
1/4/2021	0.98

Time Series

Constituent: Calcium (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	65
11/30/2016	71.7
2/16/2017	74
6/2/2017	120
8/17/2017	100
6/20/2018	72.8
9/27/2018	46.6
11/7/2018	41.8
3/24/2019	20.9 (J)
10/16/2019	55.2
11/20/2019	55.8
3/28/2020	25.8
10/15/2020	69.1
1/4/2021	104

Time Series

Constituent: Chloride (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	1800
11/30/2016	1100
2/16/2017	2100
6/2/2017	3100
8/17/2017	2600
6/20/2018	1800
9/27/2018	1300
11/7/2018	1180
3/24/2019	717
10/16/2019	941 (D)
11/20/2019	1480
3/28/2020	693
10/15/2020	1660
1/4/2021	2460

Time Series

Constituent: Cobalt (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.005
11/30/2016	<0.005
2/16/2017	<0.005
6/2/2017	<0.005
8/17/2017	<0.005
6/20/2018	<0.005
9/27/2018	<0.005
11/7/2018	<0.005
8/28/2019	<0.005
10/16/2019	<0.005
3/28/2020	<0.005
10/15/2020	0.0019 (J)
1/4/2021	<0.005

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	2.39 (D)
11/30/2016	1.66
2/16/2017	2.71
6/2/2017	1.99
8/17/2017	1.87
6/20/2018	1.95
9/27/2018	0.629 (U)
11/7/2018	1.41 (U)
8/28/2019	1.67
10/16/2019	1.92
3/28/2020	1.44 (U)
10/15/2020	2.56
1/4/2021	5.84

Time Series

Constituent: Fluoride (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.93
11/30/2016	0.93
2/16/2017	0.6
6/2/2017	0.34
8/17/2017	0.52
6/20/2018	0.5
9/27/2018	0.32
11/7/2018	0.35
3/24/2019	0.32
8/28/2019	0.36
10/16/2019	0.41
11/20/2019	0.34
3/28/2020	0.34
10/15/2020	0.22
1/4/2021	<0.1

Time Series

Constituent: Lead (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.005
11/30/2016	0.0002 (J)
2/16/2017	<0.005
6/2/2017	<0.005
8/17/2017	<0.005
6/20/2018	<0.005
9/27/2018	<0.005
11/7/2018	<0.005
8/28/2019	<0.005
10/16/2019	<0.005
3/28/2020	<0.005
10/15/2020	<0.005
1/4/2021	<0.005

Time Series

Constituent: Lithium (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.0219 (J)
11/30/2016	0.0333 (J)
2/16/2017	0.0376 (J)
6/2/2017	0.0346 (J)
8/17/2017	0.0367 (J)
6/20/2018	0.034 (J)
9/27/2018	0.023 (J)
11/7/2018	0.022 (J)
8/28/2019	0.023 (J)
10/16/2019	0.021 (J)
3/28/2020	0.014 (J)
10/15/2020	0.57
1/4/2021	0.043 (J)

Time Series

Constituent: pH (S.U.) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

MCM-05

8/31/2016	6.93
11/30/2016	6.77
2/16/2017	6.89
6/2/2017	6.83
8/17/2017	6.76
6/20/2018	6.83
9/27/2018	6.64
11/7/2018	6.6
3/24/2019	6.1
8/28/2019	6.69
10/16/2019	6.64
11/20/2019	6.58
3/28/2020	6.6
10/15/2020	6.53
1/4/2021	6.66

Time Series

Constituent: Selenium (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.002 (J)
11/30/2016	0.0023 (J)
2/16/2017	0.002 (J)
6/2/2017	<0.01
8/17/2017	<0.01
6/20/2018	<0.01
9/27/2018	<0.01
11/7/2018	<0.01
8/28/2019	<0.01
10/16/2019	<0.01
3/28/2020	<0.01
10/15/2020	0.0028 (J)
1/4/2021	<0.01

Time Series

Constituent: Sulfate (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	37
11/30/2016	63
2/16/2017	90
6/2/2017	210
8/17/2017	80
6/20/2018	46 (J)
9/27/2018	58.5 (J)
11/7/2018	41.3 (J)
3/24/2019	131
10/16/2019	122.5 (D)
11/20/2019	132
3/28/2020	63.8
10/15/2020	147
1/4/2021	262

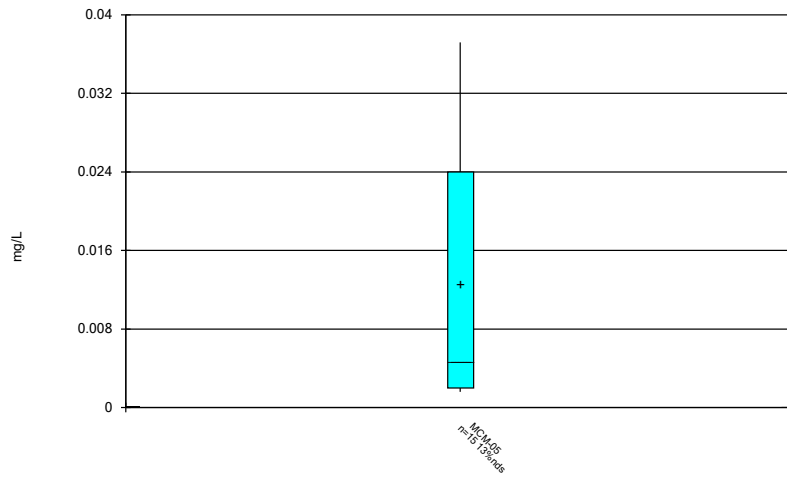
Time Series

Constituent: Total Dissolved Solids [TDS] (mg/L) Analysis Run 2/16/2021 3:27 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	3620
11/30/2016	4030
2/16/2017	4080
6/2/2017	5560
8/17/2017	4620
6/20/2018	3370
9/27/2018	2360
11/7/2018	2230
3/24/2019	1450
10/16/2019	2860
11/20/2019	2640
3/28/2020	1470
10/15/2020	5100
1/4/2021	7750

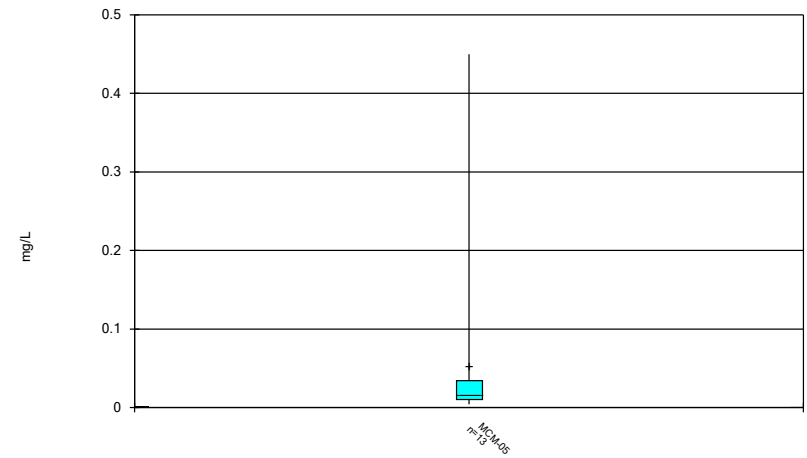
FIGURE K.

Box & Whiskers Plot



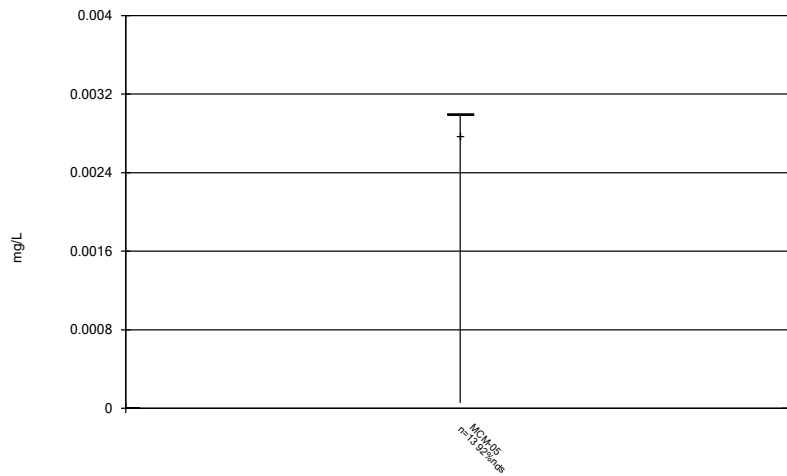
Constituent: Arsenic Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



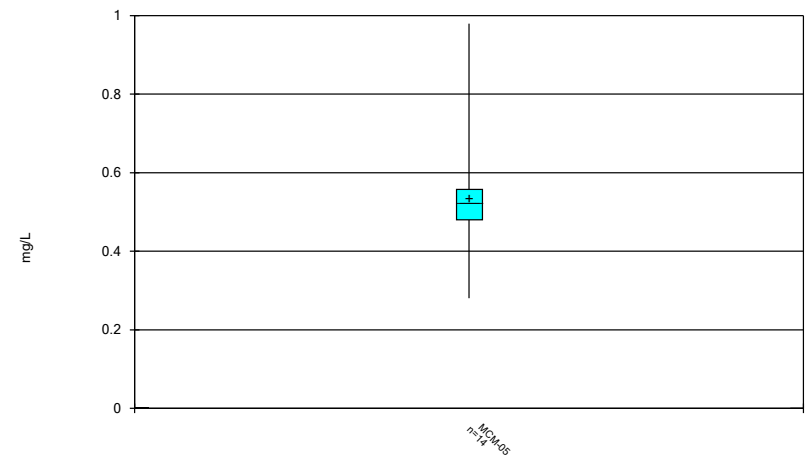
Constituent: Barium Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



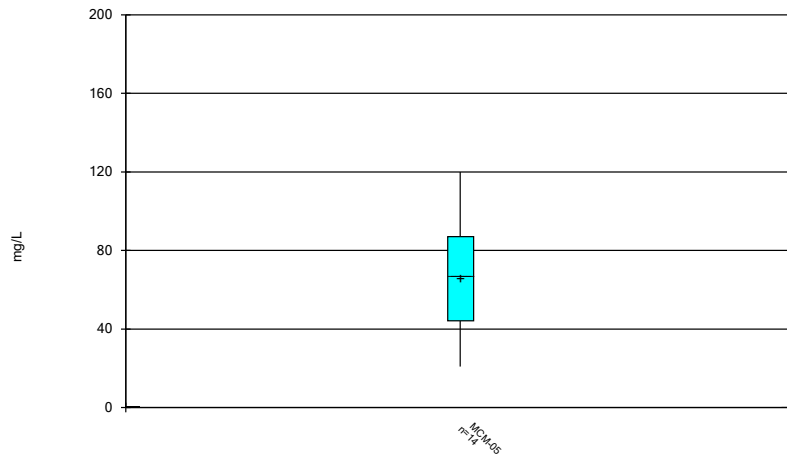
Constituent: Beryllium Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



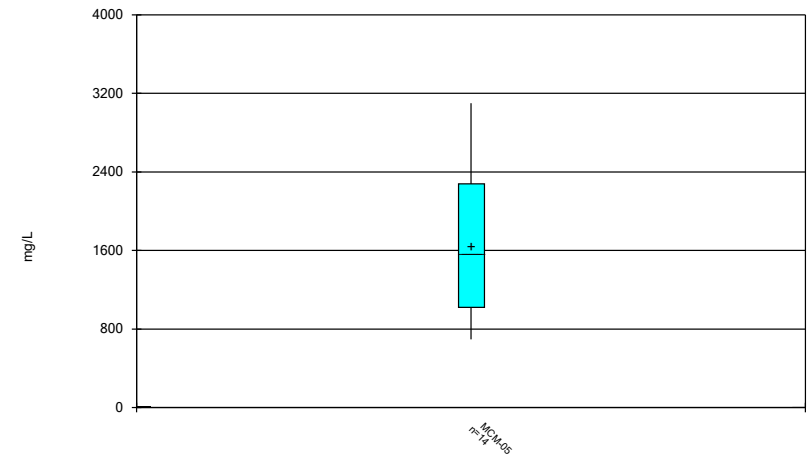
Constituent: Boron Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



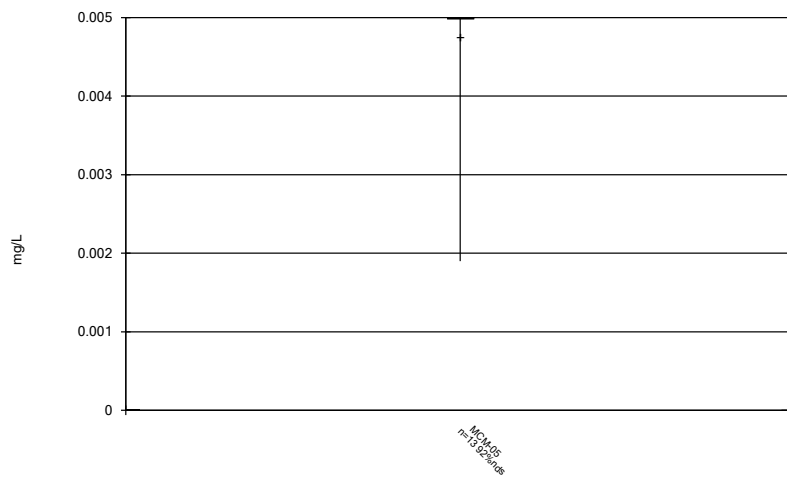
Constituent: Calcium Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



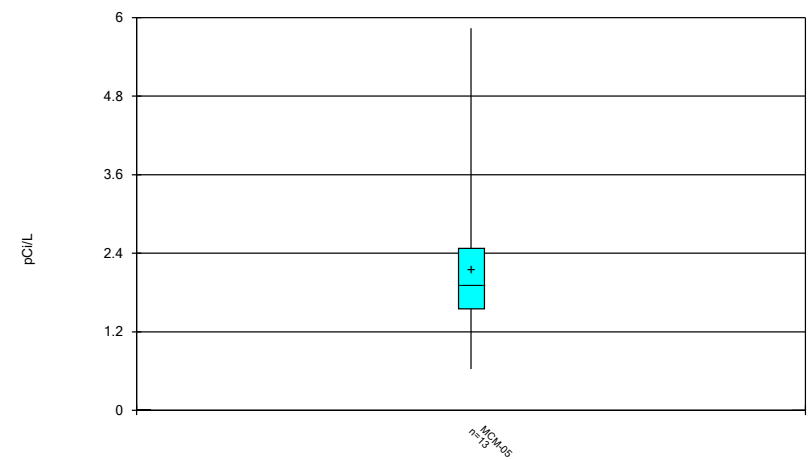
Constituent: Chloride Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



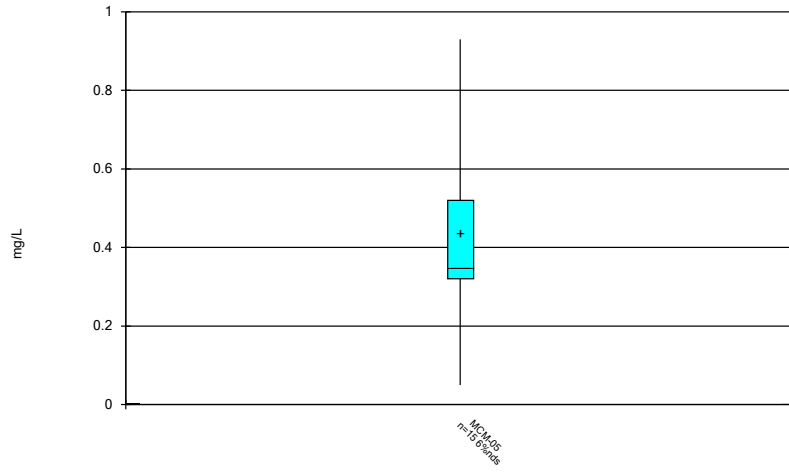
Constituent: Cobalt Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



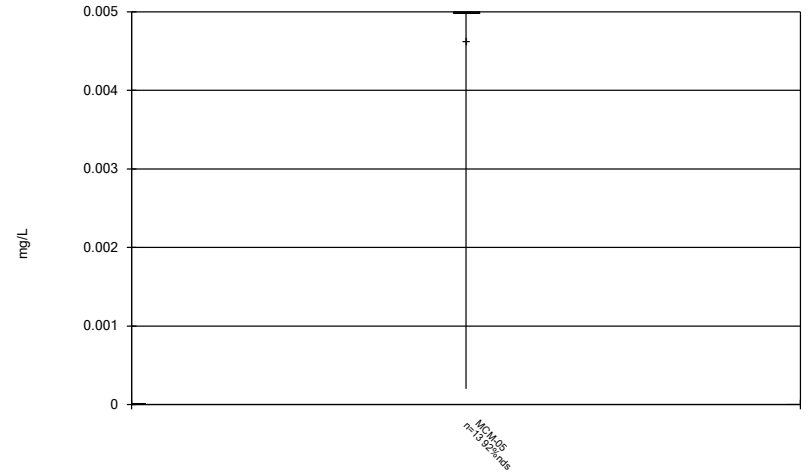
Constituent: Combined Radium 226 + 228 Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



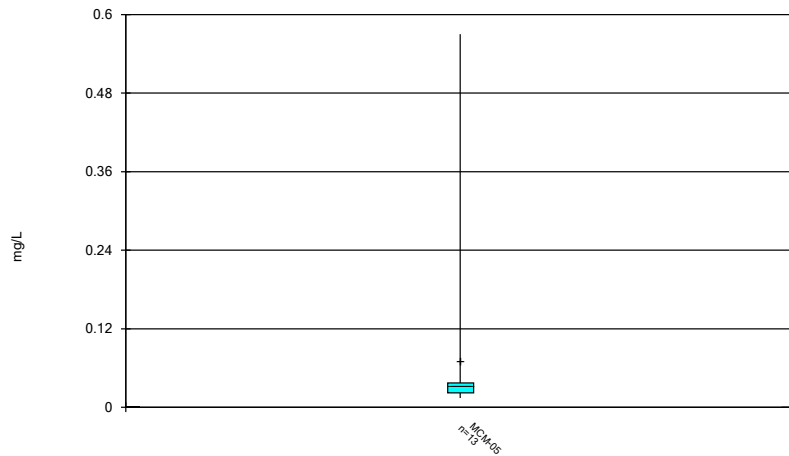
Constituent: Fluoride Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



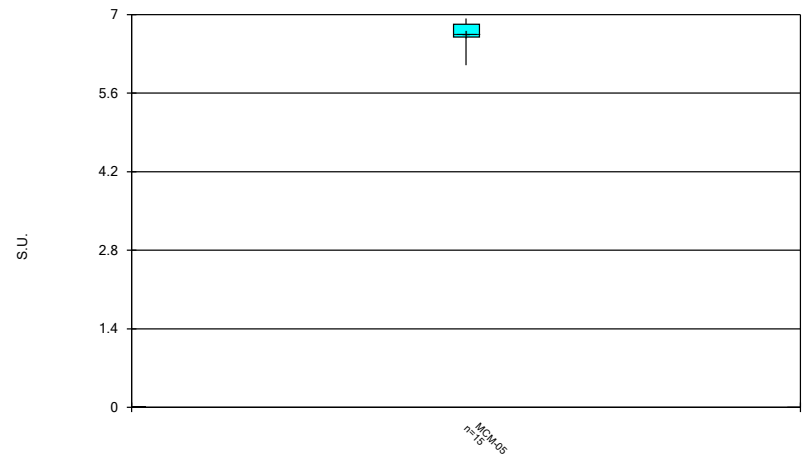
Constituent: Lead Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



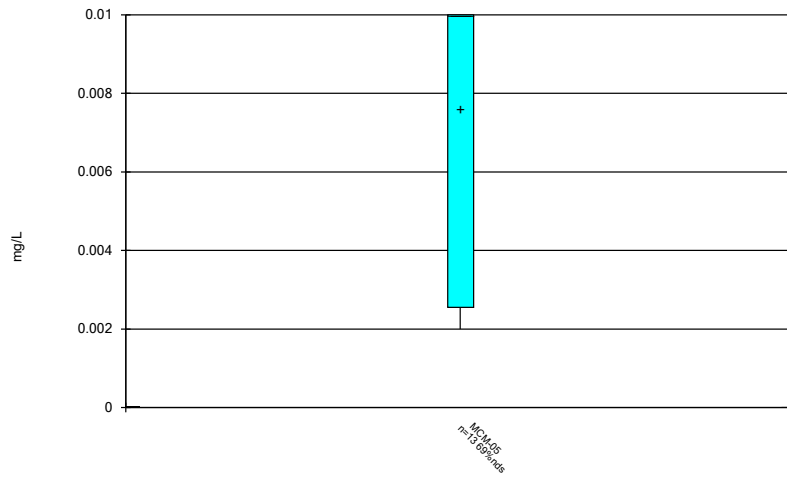
Constituent: Lithium Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



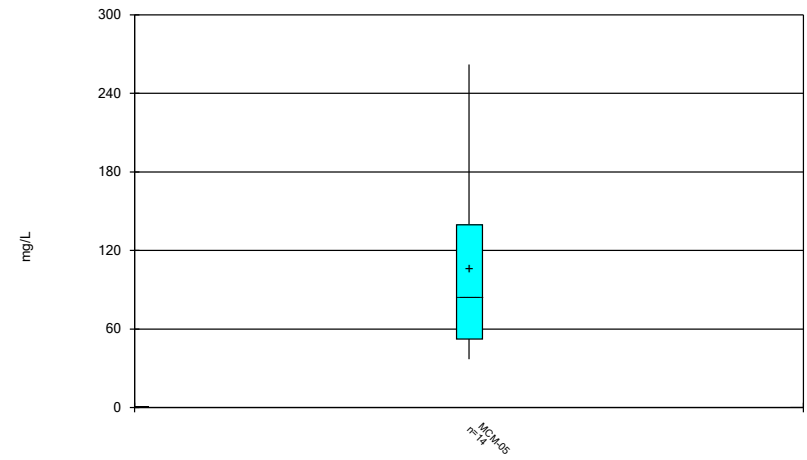
Constituent: pH Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



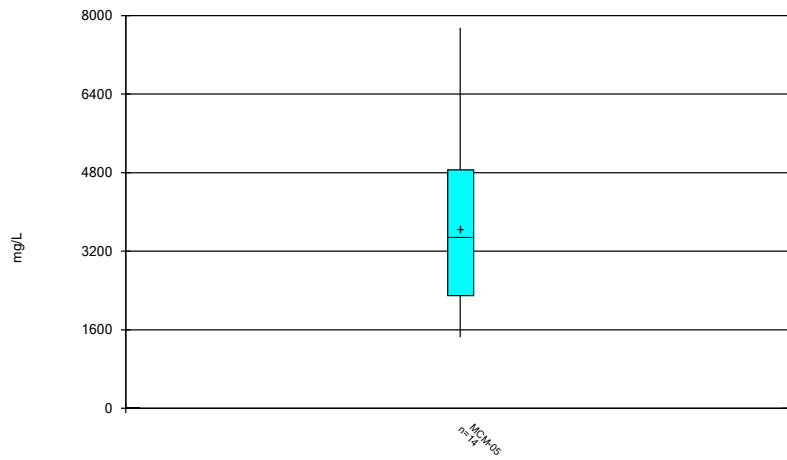
Constituent: Selenium Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



Constituent: Sulfate Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 2/16/2021 3:28 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

FIGURE L.

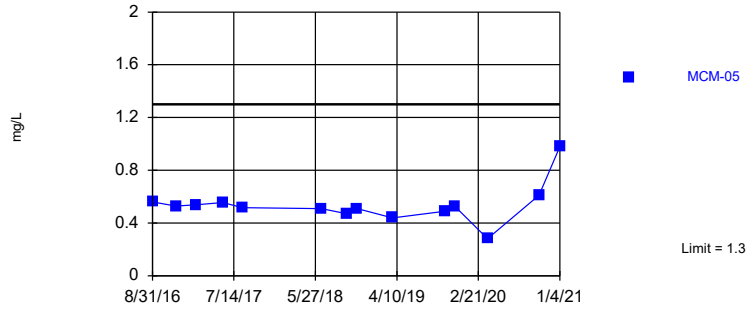
Intrawell Prediction Limits - MCM-05 Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 2/16/2021, 3:41 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg.N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	MCM-05	1.3	n/a	1/4/2021	0.98	No	90	n/a	n/a	5.556	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-05	169	n/a	1/4/2021	104	No	91	n/a	n/a	1.099	n/a	n/a	0.0002327	NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-05	8130	n/a	1/4/2021	2460	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-05	1.5	n/a	1/4/2021	0.1ND	No	95	n/a	n/a	40	n/a	n/a	0.000215	NP Inter (normality) 1 of 2
pH (S.U.)	MCM-05	5.77	3.72	1/4/2021	6.66	Yes	94	n/a	n/a	0	n/a	n/a	0.0004389	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-05	1140	n/a	1/4/2021	262	No	89	n/a	n/a	0	n/a	n/a	0.0002432	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MCM-05	14600	n/a	1/4/2021	7750	No	90	n/a	n/a	0	n/a	n/a	0.0002371	NP Inter (normality) 1 of 2

Within Limit

Prediction Limit
Interwell Non-parametric

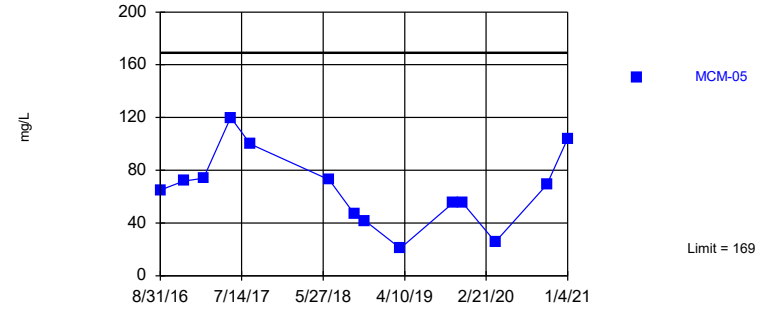


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 90 background values. 5.556% NDs. Annual per-constituent alpha = 0.003314. Individual comparison alpha = 0.0002371 (1 of 2). Assumes 6 future values.

Constituent: Boron Analysis Run 2/16/2021 3:40 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Within Limit

Prediction Limit
Interwell Non-parametric

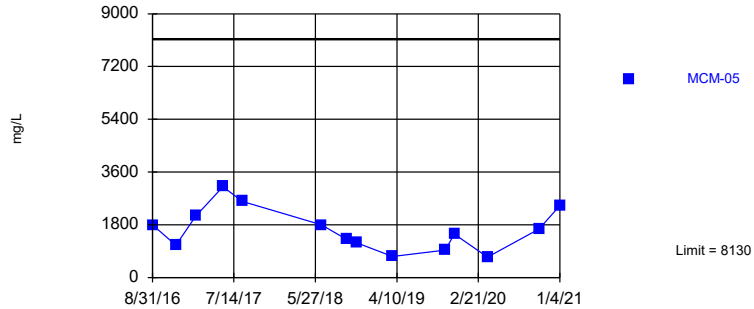


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 91 background values. 1.099% NDs. Annual per-constituent alpha = 0.003253. Individual comparison alpha = 0.0002327 (1 of 2). Assumes 6 future values.

Constituent: Calcium Analysis Run 2/16/2021 3:40 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Within Limit

Prediction Limit
Interwell Non-parametric

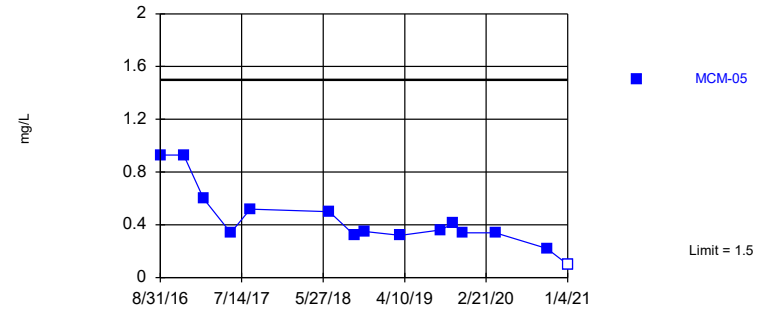


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 90 background values. Annual per-constituent alpha = 0.003314. Individual comparison alpha = 0.0002371 (1 of 2). Assumes 6 future values.

Constituent: Chloride Analysis Run 2/16/2021 3:40 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Within Limit

Prediction Limit
Interwell Non-parametric

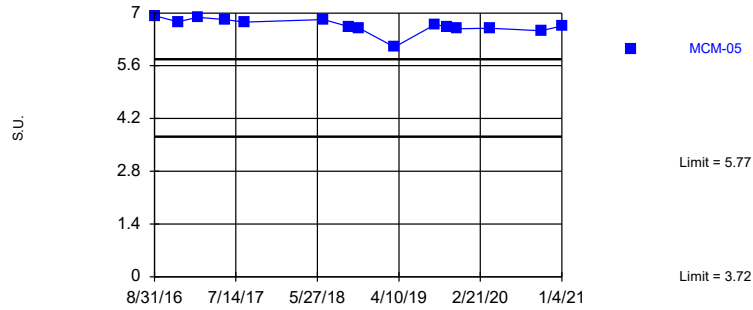


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 95 background values. 40% NDs. Annual per-constituent alpha = 0.003006. Individual comparison alpha = 0.000215 (1 of 2). Assumes 6 future values.

Constituent: Fluoride Analysis Run 2/16/2021 3:40 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Exceeds Limits: MCM-05

Prediction Limit
Interwell Non-parametric

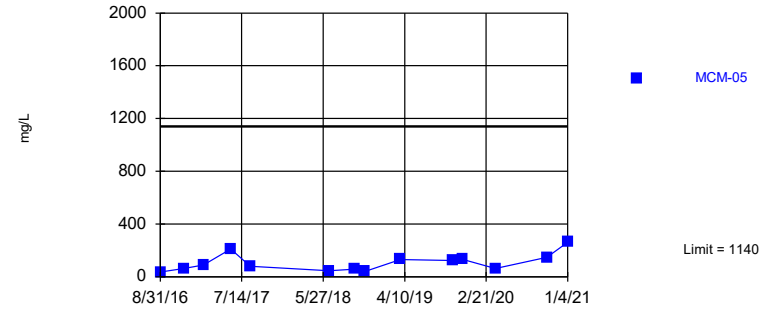


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 94 background values. Annual per-constituent alpha = 0.006135. Individual comparison alpha = 0.0004389 (1 of 2). Assumes 6 future values.

Constituent: pH Analysis Run 2/16/2021 3:40 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Within Limit

Prediction Limit
Interwell Non-parametric

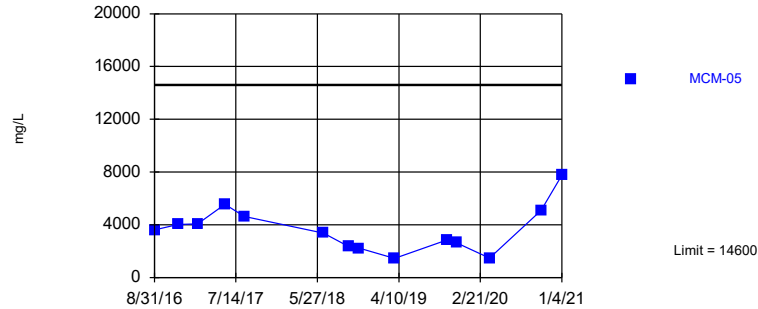


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 89 background values. Annual per-constituent alpha = 0.0034. Individual comparison alpha = 0.0002432 (1 of 2). Assumes 6 future values.

Constituent: Sulfate Analysis Run 2/16/2021 3:40 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Within Limit

Prediction Limit
Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 90 background values. Annual per-constituent alpha = 0.003314. Individual comparison alpha = 0.0002371 (1 of 2). Assumes 6 future values.

Constituent: Total Dissolved Solids [TDS] Analysis Run 2/16/2021 3:40 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 2/16/2021 3:41 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-05	MCM-11 (bg)	MCM-02 (bg)	MCM-15 (bg)	MCM-20 (bg)	MCM-19 (bg)	MCM-18 (bg)
8/30/2016	0.0325 (J)	0.0972 (J)							
8/31/2016			0.56						
11/30/2016	0.0334 (J)	0.0964	0.529						
2/15/2017	0.254	0.398							
2/16/2017			0.539						
5/31/2017				0.0521	0.161				
6/1/2017	0.0564	0.0776							
6/2/2017			0.555			0.0495			
8/2/2017				0.0392 (J)	0.158	0.0333 (J)			
8/15/2017				0.0448					
8/16/2017	0.0435				0.148				
8/17/2017		0.0853	0.516			0.0593			
4/4/2018				0.046		0.065			
4/5/2018					0.13				
5/8/2018				0.048		0.062			
5/9/2018					0.12				
6/19/2018	0.04 (J)			0.04	0.13	0.064			
6/20/2018		0.079	0.51						
9/25/2018				0.043					
9/26/2018	0.038 (J)	0.072			0.1	0.06			
9/27/2018			0.47						
11/6/2018				0.046					
11/7/2018	0.037 (J)	0.074	0.51		0.1	0.062 (J)			
3/24/2019			0.44						
3/25/2019	0.038 (J)	0.067		0.03 (J)	0.091	0.057			
10/15/2019						0.046			
10/16/2019	0.036 (J)	0.051	0.49	0.032 (J)	0.085				
11/7/2019							1.1	0.84	0.27
11/18/2019									0.29 (J)
11/19/2019							1.3	0.83	
11/20/2019			0.53						
12/4/2019							0.81	0.68	
12/5/2019									0.23
12/17/2019								0.57	
12/18/2019							0.77		0.23
1/8/2020							0.9	0.73	
1/9/2020									0.2
1/21/2020							0.94	0.75	0.24 (J)
2/4/2020							0.96 (J)	0.79 (J)	0.24 (J)
2/13/2020							0.88	0.74	0.22
3/26/2020	0.064 (J)								
3/27/2020		0.088 (J)		0.058 (J)	0.17 (J)	0.076 (J)	0.94	0.96	0.24 (J)
3/28/2020			0.28 (J)						
10/12/2020				<0.5					0.24 (J)
10/13/2020	<0.5	<0.5			<0.5	<0.5	1.1	0.73	
10/15/2020			0.61						
1/4/2021			0.98						

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 2/16/2021 3:41 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-05	MCM-11 (bg)	MCM-02 (bg)	MCM-15 (bg)	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	7.3	4.02							
8/31/2016			65						
11/30/2016	10.8	4.87	71.7						
2/15/2017	14.3	6.61							
2/16/2017			74						
5/31/2017				18.6	5.9				
6/1/2017	12.7 (J)	6.42							
6/2/2017			120			2.77			
8/2/2017				18.5	4.69	1.27			
8/15/2017				4.09					
8/16/2017	8.7				5.25				
8/17/2017		5.62	100			5.53			
4/4/2018				<25		6.5			
4/5/2018					5				
5/8/2018				18.4 (J)		6.7			
5/9/2018					4.7				
6/19/2018	11.6 (J)			4.3	4.8	7.4			
6/20/2018		5.7	72.8						
6/28/2018	13								
9/25/2018				6.2 (D)					
9/26/2018	12.8 (J)	5.3			4.6	8.5 (J)			
9/27/2018			46.6						
11/6/2018				1.8					
11/7/2018	11.9	5.3	41.8		4.6	9.8			
3/24/2019			20.9 (J)						
3/25/2019	12.6 (J)	5.7		2.5 (D)	4.7	7.8			
10/15/2019						6.7			
10/16/2019	13.6	4.8	55.2	2.2	4.9				
11/7/2019							46.2	158	163
11/18/2019							41.8		
11/19/2019								152	169
11/20/2019			55.8						
12/4/2019								142	140
12/5/2019							40.5		
12/17/2019								136	
12/18/2019							42		145
1/8/2020								147	157
1/9/2020							37.1		
1/21/2020							40.1	167	152
2/4/2020							36.2	142	139
2/13/2020							38.9	148	146
3/26/2020	10.1								
3/27/2020		5.4		3.3	4.9	5.9	23.2	122	113
3/28/2020			25.8						
10/12/2020				2.8			19.1		
10/13/2020	9.8	5.7			3.8	0.83		125	128
10/15/2020			69.1						
1/4/2021			104						

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 2/16/2021 3:41 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-05	MCM-11 (bg)	MCM-02 (bg)	MCM-15 (bg)	MCM-20 (bg)	MCM-19 (bg)	MCM-18 (bg)
8/30/2016	9.7	26							
8/31/2016			1800						
11/30/2016	19	27	1100						
2/15/2017	21	30							
2/16/2017			2100						
5/31/2017				98	39				
6/1/2017	12	27							
6/2/2017			3100			11			
8/2/2017				57	42	3.2			
8/15/2017				15					
8/16/2017	14				41				
8/17/2017		32	2600			12			
4/4/2018				69		13.4			
4/5/2018					40.2				
5/8/2018				72.3		13.2			
5/9/2018					40.6				
6/19/2018	24.4			17.3	37.7	13.7			
6/20/2018		30	1800						
9/25/2018				31.3					
9/26/2018	23.4	28.4			33.4	18.5			
9/27/2018			1300						
11/6/2018				9.8					
11/7/2018	21.8	25.1	1180		30.7	20.2			
3/24/2019			717						
3/25/2019	19.4	21.8		12.9	33.5	19.7			
10/15/2019						17.1			
10/16/2019	21.4	20	941 (D)	12.2	33.1				
11/7/2019							7880	6170	2360
11/18/2019									6970
11/19/2019							8130	5650	
11/20/2019			1480						
12/4/2019							7410	6100	
12/5/2019									2130
12/17/2019								5660	
12/18/2019							7170		2090
1/8/2020							6480	5070	
1/9/2020									1750
1/21/2020							6000	5010	1630
2/4/2020							5700	5030	1760
2/13/2020							7060	6140	1850
3/26/2020	23								
3/27/2020		23.6		14.5	32.9	14.1	7110	6870	1450
3/28/2020			693						
10/12/2020				13.9					1340
10/13/2020	13.5	23.3			25.7	3.8	5980	5260	
10/15/2020			1660						
1/4/2021			2460						

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 2/16/2021 3:41 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-05	MCM-11 (bg)	MCM-02 (bg)	MCM-15 (bg)	MCM-19 (bg)	MCM-20 (bg)	MCM-18 (bg)
8/30/2016	0.03 (J)	0.04 (J)							
8/31/2016			0.93						
11/30/2016	0.04 (J)	0.18 (J)	0.93						
2/15/2017	0.007 (J)	0.02 (J)							
2/16/2017			0.6						
5/31/2017				0.85	0.01 (J)				
6/1/2017	<0.1	0.005 (J)							
6/2/2017			0.34				<0.1		
8/2/2017				0.69	0.14 (J)	0.05 (J)			
8/15/2017				0.29 (J)					
8/16/2017	0.03 (J)				0.13 (J)				
8/17/2017		0.04 (J)	0.52				<0.1		
4/4/2018				0.32			<0.1		
4/5/2018					<0.1				
5/8/2018				0.63			<0.1		
5/9/2018					<0.1				
6/19/2018	<0.1			0.17 (J)	0.065 (J)	0.057 (J)			
6/20/2018		0.038 (J)	0.5						
9/25/2018				0.15 (J)					
9/26/2018	0.12 (J)	0.029			0.029	0.029			
9/27/2018			0.32						
11/6/2018				<0.1					
11/7/2018	<0.1	<0.1	0.35		<0.1	<0.1			
3/24/2019			0.32						
3/25/2019	0.038 (J)	0.041 (J)		0.12 (J)	0.039 (J)	0.036 (J)			
8/27/2019	<0.1	<0.1				<0.1			
8/28/2019			0.36	0.068 (J)	<0.1				
10/15/2019						0.14 (J)			
10/16/2019	0.046 (JD)	0.044 (J)	0.41	0.1 (J)	0.044 (JD)				
11/7/2019							<0.1	1.4	0.49
11/18/2019									0.52
11/19/2019							0.033 (J)	1.2	
11/20/2019			0.34						
12/4/2019							0.22 (J)	1.4	
12/5/2019									0.5
12/17/2019							<0.1		
12/18/2019								1.5	0.33
1/8/2020							<0.1	<0.1	
1/9/2020									0.12 (J)
1/21/2020							0.11 (J)	0.53	0.13 (J)
2/4/2020							<0.1	<0.1	0.18 (J)
2/13/2020							<0.1	<0.1	0.077 (J)
3/26/2020	<0.1								
3/27/2020		<0.1		0.066 (J)	<0.1	<0.1	<0.1	<0.1	0.06 (J)
3/28/2020			0.34						
10/12/2020				<0.1					0.34
10/13/2020	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	
10/15/2020			0.22						
1/4/2021			<0.1						

Prediction Limit

Constituent: pH (S.U.) Analysis Run 2/16/2021 3:41 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-05	MCM-11 (bg)	MCM-02 (bg)	MCM-15 (bg)	MCM-18 (bg)	MCM-19 (bg)	MCM-20 (bg)
8/30/2016	5.66	5.18							
8/31/2016			6.93						
11/30/2016	5.36	4.96	6.77						
2/15/2017	5.25	5.13							
2/16/2017			6.89						
5/31/2017				5.29	5.06				
6/1/2017	5.59	4.99							
6/2/2017			6.83			5.31			
8/2/2017				5.19	5	5.05			
8/15/2017				5.19					
8/16/2017	5.58				4.98				
8/17/2017		4.68	6.76			5.52			
4/4/2018				5.19		5.45			
4/5/2018					5.02				
5/8/2018				5.3		5.54			
5/9/2018					4.96				
6/19/2018	5.51			5.15	5.02	5.6			
6/20/2018		4.77	6.83						
9/25/2018				5.13					
9/26/2018	5.32	4.65			5.06	5.17			
9/27/2018			6.64						
11/6/2018				5.08					
11/7/2018	5.72	4.99	6.6		5.03	5.47			
3/24/2019			6.1			5.4			
3/25/2019	5.75	5.13		5.05	5.08				
8/27/2019	5.58	4.88				5.35			
8/28/2019			6.69	4.87	4.99				
10/15/2019						5.32			
10/16/2019	5.72	4.89	6.64	5.05	4.98				
11/7/2019							4.25	5.21	3.79
11/18/2019							4.12		
11/19/2019					5.11			5.15	3.78
11/20/2019	5.77		6.58						
12/4/2019								5.28 (D)	3.87 (D)
12/5/2019							4.17 (D)		
1/8/2020								5.04	3.77
1/9/2020							4.19		
1/21/2020							4.28	5.1	3.73
2/4/2020							4.26	5.15	3.72
2/13/2020							4.2	5.07	3.75
3/26/2020	5.45								
3/27/2020		5.12		5.09	5.12	5.3	4.34	5.14	3.81
3/28/2020			6.6						
10/12/2020				5			4.29		
10/13/2020	5.69	5.17			5.03	5.02		5.04	3.72
10/15/2020			6.53						
1/4/2021			6.66						

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 2/16/2021 3:41 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-05	MCM-11 (bg)	MCM-02 (bg)	MCM-15 (bg)	MCM-20 (bg)	MCM-19 (bg)	MCM-18 (bg)
8/30/2016	17	24							
8/31/2016			37						
11/30/2016	33	26	63						
2/15/2017	83	30							
2/16/2017			90						
5/31/2017				40	46				
6/1/2017	51	24							
6/2/2017			210			13			
8/2/2017				34	43	14			
8/15/2017				24					
8/16/2017	36				41				
8/17/2017		26	80			14			
4/4/2018				33.9		13.4			
4/5/2018					33.4				
5/8/2018				35.7		14.8			
5/9/2018					36				
6/19/2018	50.3			23.7	35.5	15.5			
6/20/2018		31.2	46 (J)						
9/25/2018				25.6					
9/26/2018	54.1	36.8			39.6	23			
9/27/2018			58.5 (J)						
11/6/2018				25.2					
11/7/2018	45.6	35	41.3 (J)		35.8	22.2			
3/24/2019			131						
3/25/2019	43	40.1		24.9	34.2	22.4			
10/15/2019						17.9			
10/16/2019	31.9	28.5	122.5 (D)	17.4	24.4				
11/7/2019							1010	832	379
11/18/2019									737
11/19/2019							1140	795	
11/20/2019			132						
12/4/2019							1020	810	
12/5/2019									351
12/17/2019								535	
12/18/2019							8.1		
1/8/2020							747	603	
1/9/2020									254
1/21/2020							798	611	254
2/4/2020							1120	599	432
2/13/2020							833	761	300
3/26/2020	36.2								
3/27/2020		31.2		23.4	28.6	14.6	700	836	219
3/28/2020			63.8						
10/12/2020				19.3					191
10/13/2020	32.3	26.8			27.6	7.6	638	609	
10/15/2020			147						
1/4/2021			262						

Prediction Limit

Constituent: Total Dissolved Solids [TDS] (mg/L) Analysis Run 2/16/2021 3:41 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-05	MCM-11 (bg)	MCM-02 (bg)	MCM-15 (bg)	MCM-20 (bg)	MCM-19 (bg)	MCM-18 (bg)
8/30/2016	86	99							
8/31/2016			3620						
11/30/2016	131	111	4030						
2/15/2017	212	170							
2/16/2017			4080						
5/31/2017				257	123				
6/1/2017	103	98							
6/2/2017			5560			69			
8/2/2017				183	136	35			
8/15/2017				90					
8/16/2017	65				124				
8/17/2017		84	4620			51			
4/4/2018				197		90			
4/5/2018					128				
5/8/2018				225		89			
5/9/2018					127				
6/19/2018	142			112	143	110			
6/20/2018		123	3370						
9/25/2018				137					
9/26/2018	133	117			132	124			
9/27/2018			2360						
11/6/2018				89					
11/7/2018	121	120	2230		134	125			
3/24/2019			1450						
3/25/2019	116	101		74	111	98			
10/15/2019						107			
10/16/2019	104	95	2860	82	96				
11/7/2019							13500	10900	4140
11/18/2019									4030
11/19/2019							13300	10000	
11/20/2019			2640						
12/4/2019							13200	11000	
12/5/2019									3840
12/17/2019								9860	
12/18/2019							12500		3880
1/8/2020							12300	9760	
1/9/2020									3520
1/21/2020							12000	10100	3280
2/4/2020							12300	10600	3220
2/13/2020							12400	10900	3580
3/26/2020	114								
3/27/2020		110		87	119	110	14600	14300	3090
3/28/2020			1470						
10/12/2020				94					2920
10/13/2020	113	115			118	63	13900	6600	
10/15/2020			5100						
1/4/2021			7750						

FIGURE M.

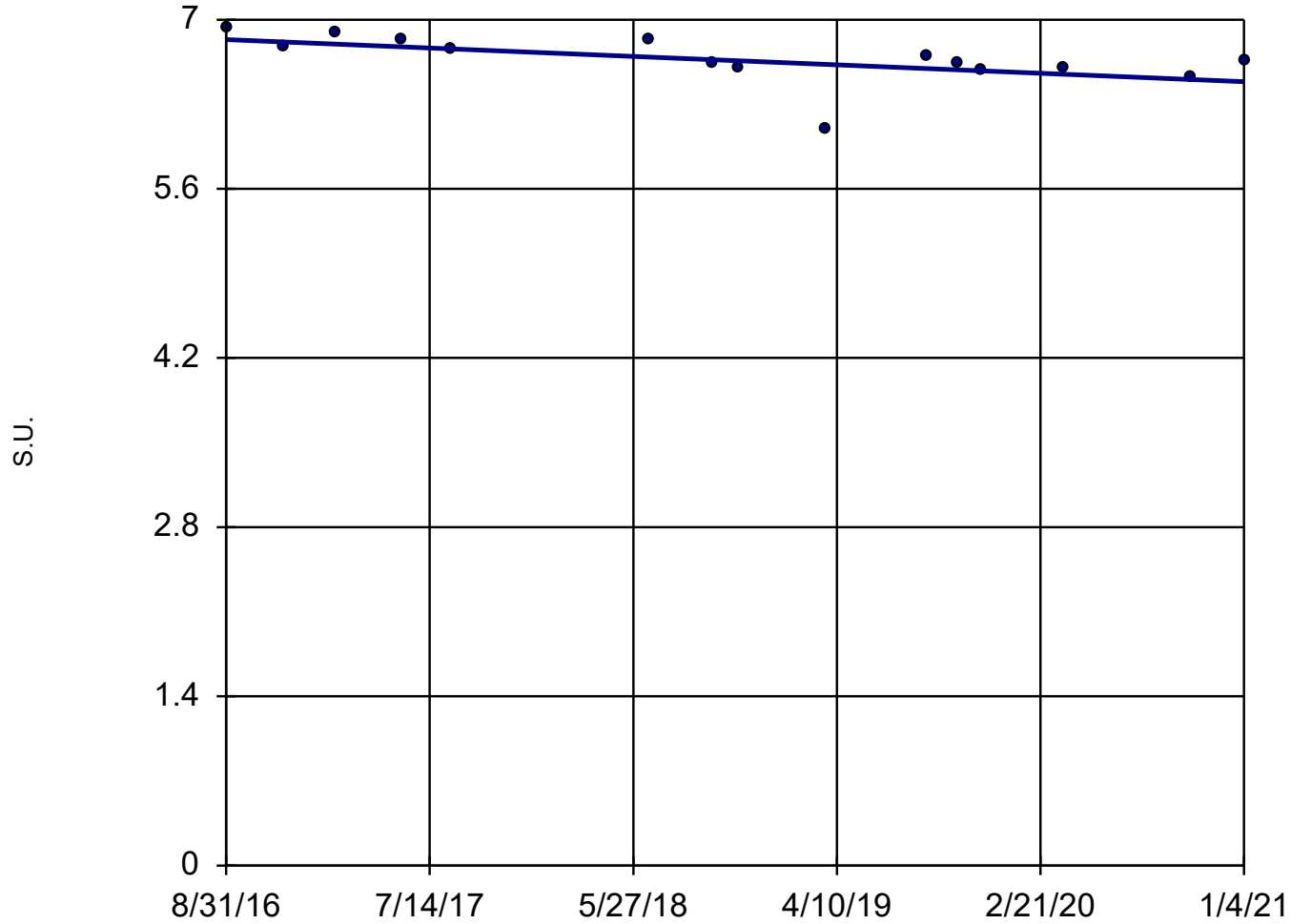
Appendix III Trend Tests - Addendum Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 2/16/2021, 3:59 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
pH (S.U.)	MCM-05	-0.08008	-62	-53	Yes	15	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

MCM-05



n = 15

Slope = -0.08008
units per year.

Mann-Kendall
statistic = -62
critical = -53

Decreasing trend
significant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: pH Analysis Run 2/16/2021 3:58 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

FIGURE N.

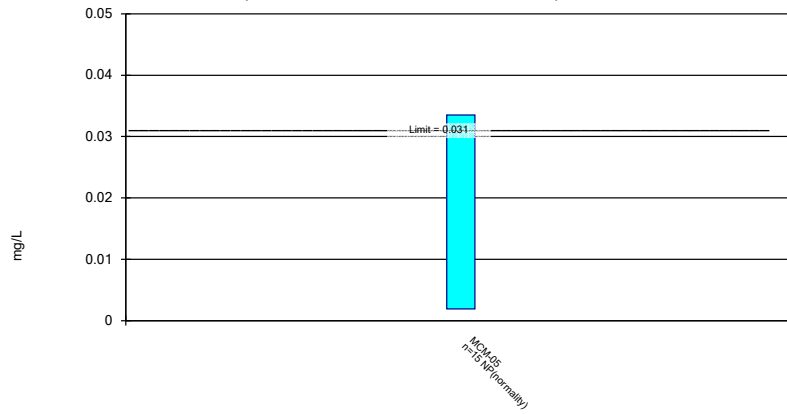
Confidence Intervals - Addendum Federal Results (No Significant)

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 2/16/2021, 4:06 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDsND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MCM-05	0.0335	0.0019	0.031	No 15	0.01255	0.01336	13.33 None	No	0.01	NP (normality)
Barium (mg/L)	MCM-05	0.051	0.0085	2	No 13	0.05232	0.1202	0 None	No	0.01	NP (normality)
Beryllium (mg/L)	MCM-05	0.003	0.000054	0.021	No 13	0.002773	0.0008171	92.31 None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-05	0.005	0.0019	0.036	No 13	0.004762	0.0008598	92.31 None	No	0.01	NP (NDs)
Combined Radium 226 + 228 (pCi/L)	MCM-05	2.84	1.334	55.8	No 13	2.157	1.231	0 None	x^(1/3)	0.01	Param.
Fluoride (mg/L)	MCM-05	0.5768	0.2622	4	No 15	0.4353	0.2376	6.667 None	sqrt(x)	0.01	Param.
Lead (mg/L)	MCM-05	0.005	0.0002	0.015	No 13	0.004631	0.001331	92.31 None	No	0.01	NP (NDs)
Lithium (mg/L)	MCM-05	0.043	0.021	0.04	No 13	0.07032	0.1504	0 None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-05	0.01	0.0023	0.15	No 13	0.007623	0.003716	69.23 None	No	0.01	NP (NDs)

Non-Parametric Confidence Interval

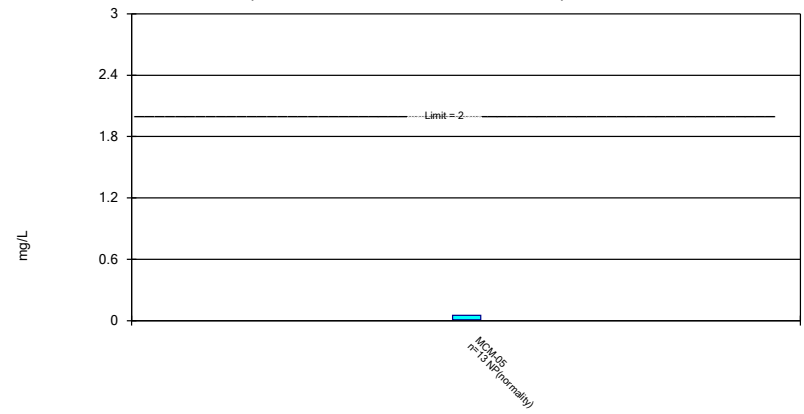
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Arsenic Analysis Run 2/16/2021 4:03 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

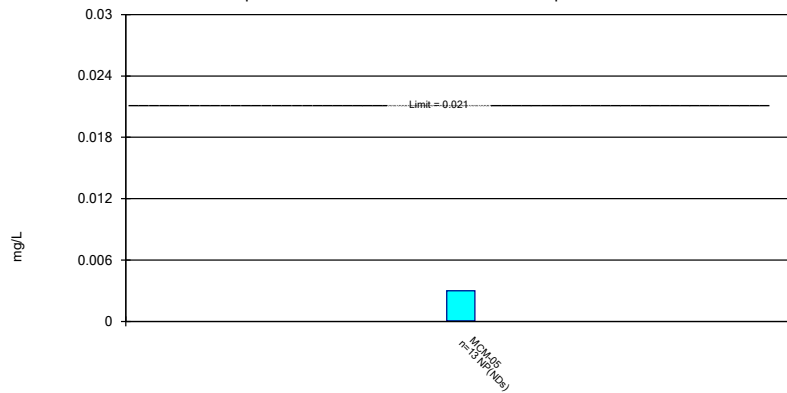
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Barium Analysis Run 2/16/2021 4:03 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

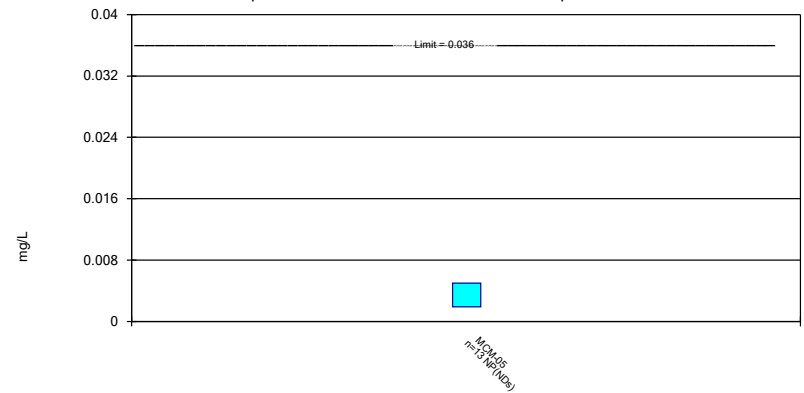
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium Analysis Run 2/16/2021 4:03 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cobalt Analysis Run 2/16/2021 4:03 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric Confidence Interval

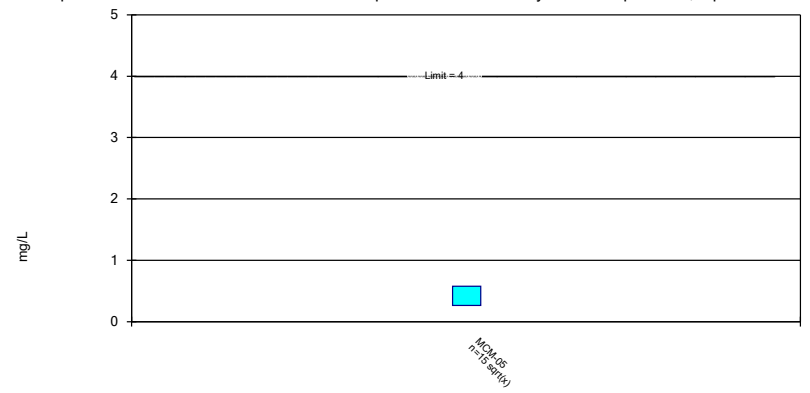
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 2/16/2021 4:03 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric Confidence Interval

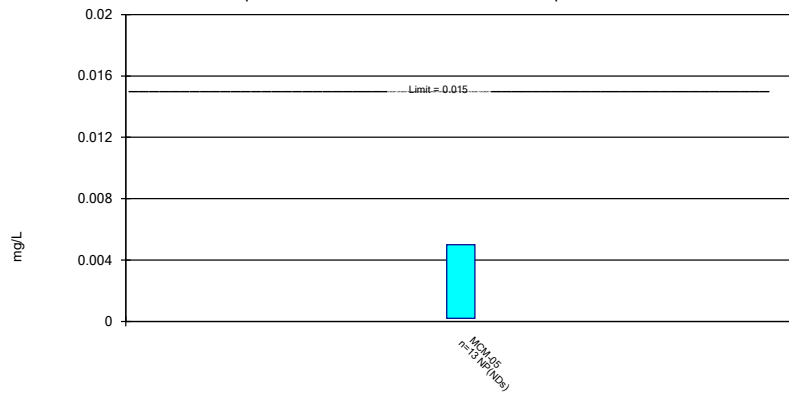
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 2/16/2021 4:03 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

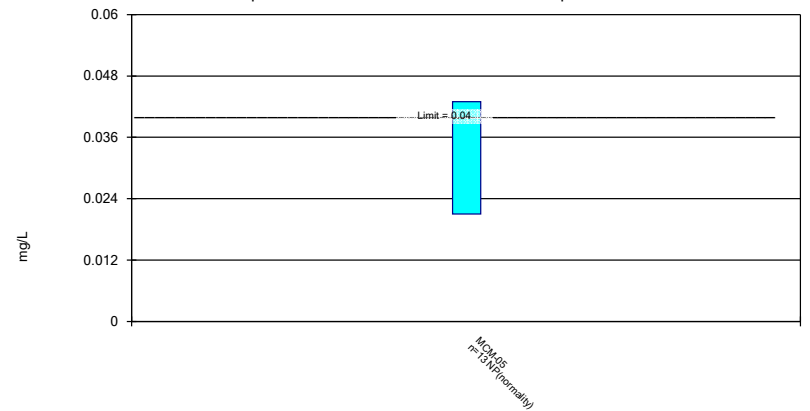
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 2/16/2021 4:03 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

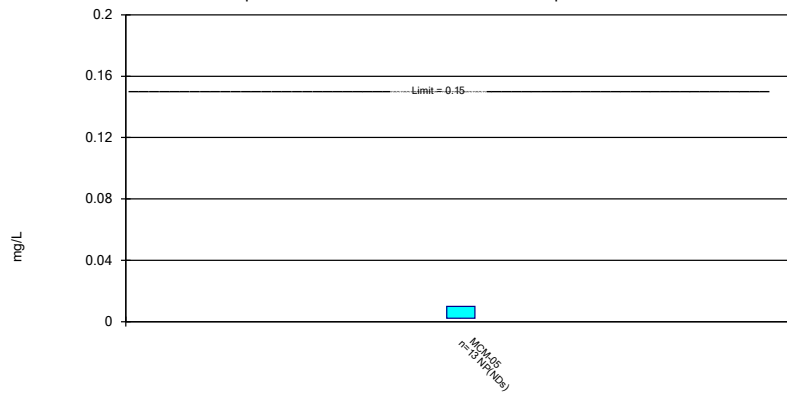
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lithium Analysis Run 2/16/2021 4:03 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium Analysis Run 2/16/2021 4:03 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 2/16/2021 4:06 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.005
11/30/2016	0.0132
2/16/2017	0.0372
6/2/2017	0.0335
8/17/2017	0.0336
6/20/2018	0.019
9/27/2018	0.0035 (J)
11/7/2018	0.002 (J)
11/27/2018	0.0016 (J)
3/26/2019	0.0018 (J)
8/28/2019	0.0019 (J)
10/16/2019	0.0047 (J)
3/28/2020	<0.005
10/15/2020	0.024
1/4/2021	0.0072
Mean	0.01255
Std. Dev.	0.01336
Upper Lim.	0.0335
Lower Lim.	0.0019

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 2/16/2021 4:06 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.0289
11/30/2016	0.0168
2/16/2017	0.016
6/2/2017	0.0393 (J)
8/17/2017	0.0188
6/20/2018	0.014
9/27/2018	0.0097 (J)
11/7/2018	0.0085 (J)
8/28/2019	0.011
10/16/2019	0.012
3/28/2020	0.0041 (J)
10/15/2020	0.45
1/4/2021	0.051
Mean	0.05232
Std. Dev.	0.1202
Upper Lim.	0.051
Lower Lim.	0.0085

Confidence Interval

Constituent: Beryllium (mg/L) Analysis Run 2/16/2021 4:06 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.003
11/30/2016	<0.003
2/16/2017	<0.003
6/2/2017	<0.003
8/17/2017	<0.003
6/20/2018	<0.003
9/27/2018	<0.003
11/7/2018	5.4E-05 (J)
8/28/2019	<0.003
10/16/2019	<0.003
3/28/2020	<0.003
10/15/2020	<0.003
1/4/2021	<0.003
Mean	0.002773
Std. Dev.	0.0008171
Upper Lim.	0.003
Lower Lim.	5.4E-05

Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 2/16/2021 4:06 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.005
11/30/2016	<0.005
2/16/2017	<0.005
6/2/2017	<0.005
8/17/2017	<0.005
6/20/2018	<0.005
9/27/2018	<0.005
11/7/2018	<0.005
8/28/2019	<0.005
10/16/2019	<0.005
3/28/2020	<0.005
10/15/2020	0.0019 (J)
1/4/2021	<0.005
Mean	0.004762
Std. Dev.	0.0008598
Upper Lim.	0.005
Lower Lim.	0.0019

Confidence Interval

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 2/16/2021 4:06 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	2.39 (D)
11/30/2016	1.66
2/16/2017	2.71
6/2/2017	1.99
8/17/2017	1.87
6/20/2018	1.95
9/27/2018	0.629 (U)
11/7/2018	1.41 (U)
8/28/2019	1.67
10/16/2019	1.92
3/28/2020	1.44 (U)
10/15/2020	2.56
1/4/2021	5.84
Mean	2.157
Std. Dev.	1.231
Upper Lim.	2.84
Lower Lim.	1.334

Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 2/16/2021 4:06 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.93
11/30/2016	0.93
2/16/2017	0.6
6/2/2017	0.34
8/17/2017	0.52
6/20/2018	0.5
9/27/2018	0.32
11/7/2018	0.35
3/24/2019	0.32
8/28/2019	0.36
10/16/2019	0.41
11/20/2019	0.34
3/28/2020	0.34
10/15/2020	0.22
1/4/2021	<0.1
Mean	0.4353
Std. Dev.	0.2376
Upper Lim.	0.5768
Lower Lim.	0.2622

Confidence Interval

Constituent: Lead (mg/L) Analysis Run 2/16/2021 4:06 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.005
11/30/2016	0.0002 (J)
2/16/2017	<0.005
6/2/2017	<0.005
8/17/2017	<0.005
6/20/2018	<0.005
9/27/2018	<0.005
11/7/2018	<0.005
8/28/2019	<0.005
10/16/2019	<0.005
3/28/2020	<0.005
10/15/2020	<0.005
1/4/2021	<0.005
Mean	0.004631
Std. Dev.	0.001331
Upper Lim.	0.005
Lower Lim.	0.0002

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 2/16/2021 4:06 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.0219 (J)
11/30/2016	0.0333 (J)
2/16/2017	0.0376 (J)
6/2/2017	0.0346 (J)
8/17/2017	0.0367 (J)
6/20/2018	0.034 (J)
9/27/2018	0.023 (J)
11/7/2018	0.022 (J)
8/28/2019	0.023 (J)
10/16/2019	0.021 (J)
3/28/2020	0.014 (J)
10/15/2020	0.57
1/4/2021	0.043 (J)
Mean	0.07032
Std. Dev.	0.1504
Upper Lim.	0.043
Lower Lim.	0.021

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 2/16/2021 4:06 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.002 (J)
11/30/2016	0.0023 (J)
2/16/2017	0.002 (J)
6/2/2017	<0.01
8/17/2017	<0.01
6/20/2018	<0.01
9/27/2018	<0.01
11/7/2018	<0.01
8/28/2019	<0.01
10/16/2019	<0.01
3/28/2020	<0.01
10/15/2020	0.0028 (J)
1/4/2021	<0.01
Mean	0.007623
Std. Dev.	0.003716
Upper Lim.	0.01
Lower Lim.	0.0023

FIGURE O.

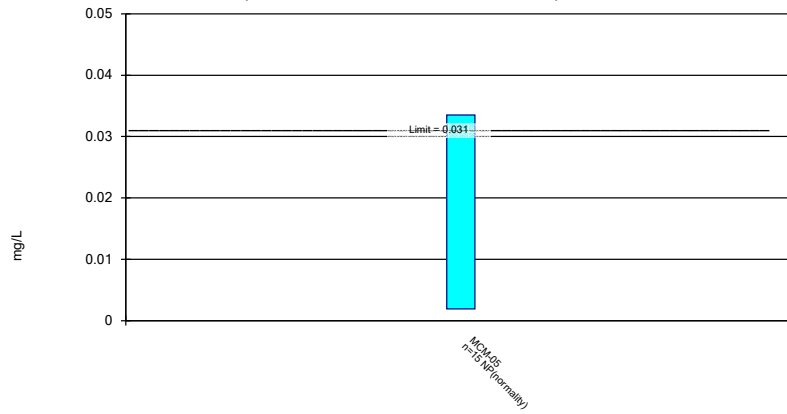
Confidence Intervals - Addendum State Results (No Significant)

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 2/16/2021, 4:14 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig. N	Mean	Std. Dev.	%NDsND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MCM-05	0.0335	0.0019	0.031	No 15	0.01255	0.01336	13.33 None	No	0.01	NP (normality)
Barium (mg/L)	MCM-05	0.051	0.0085	2	No 13	0.05232	0.1202	0 None	No	0.01	NP (normality)
Beryllium (mg/L)	MCM-05	0.003	0.000054	0.021	No 13	0.002773	0.0008171	92.31 None	No	0.01	NP (NDs)
Cobalt (mg/L)	MCM-05	0.005	0.0019	0.036	No 13	0.004762	0.0008598	92.31 None	No	0.01	NP (NDs)
Combined Radium 226 + 228 (pCi/L)	MCM-05	2.84	1.334	55.8	No 13	2.157	1.231	0 None	x^(1/3)	0.01	Param.
Fluoride (mg/L)	MCM-05	0.5768	0.2622	4	No 15	0.4353	0.2376	6.667 None	sqrt(x)	0.01	Param.
Lead (mg/L)	MCM-05	0.005	0.0002	0.005	No 13	0.004631	0.001331	92.31 None	No	0.01	NP (NDs)
Lithium (mg/L)	MCM-05	0.043	0.021	0.03	No 13	0.07032	0.1504	0 None	No	0.01	NP (normality)
Selenium (mg/L)	MCM-05	0.01	0.0023	0.15	No 13	0.007623	0.003716	69.23 None	No	0.01	NP (NDs)

Non-Parametric Confidence Interval

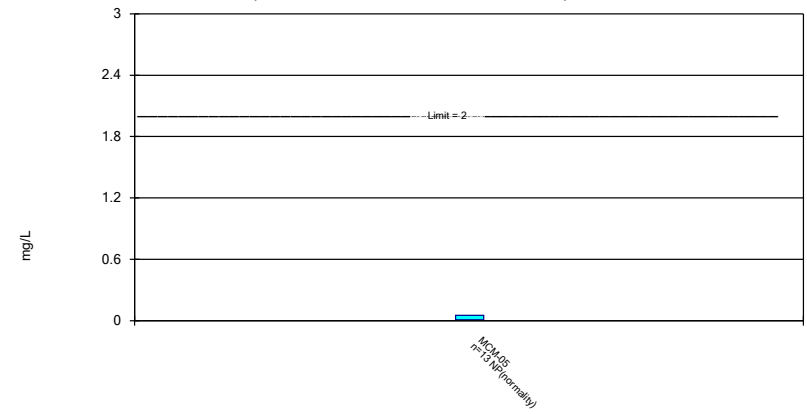
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Arsenic Analysis Run 2/16/2021 4:13 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

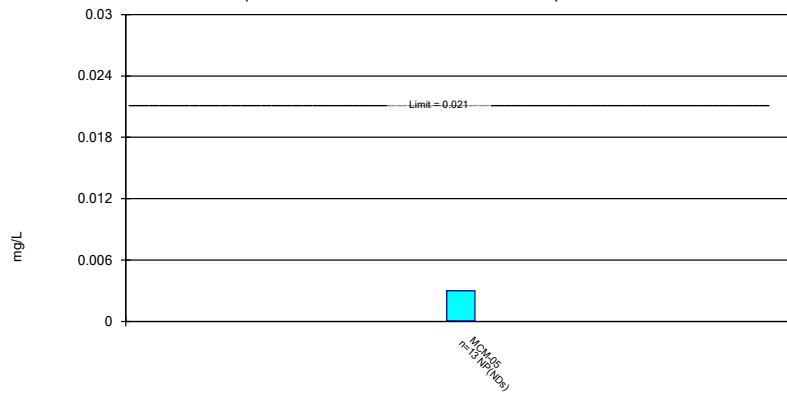
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Barium Analysis Run 2/16/2021 4:13 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

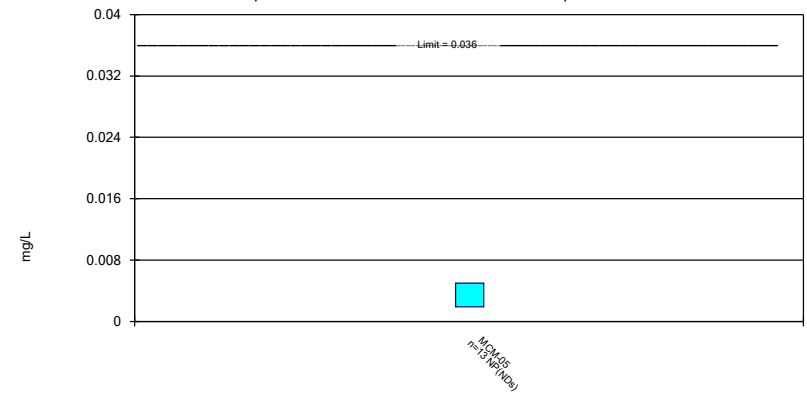
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Beryllium Analysis Run 2/16/2021 4:13 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Cobalt Analysis Run 2/16/2021 4:13 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric Confidence Interval

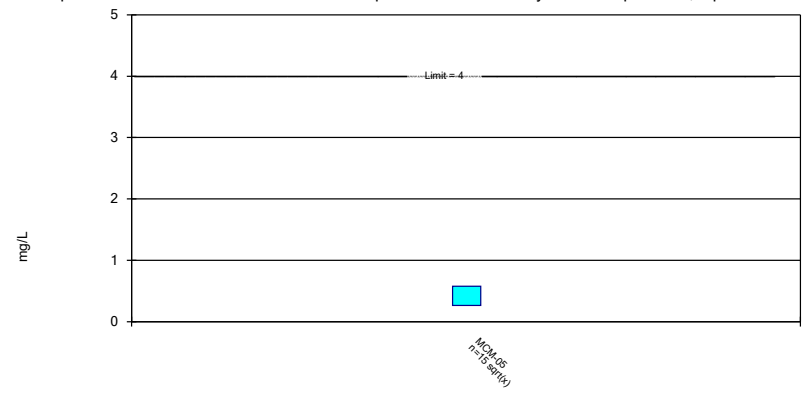
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 2/16/2021 4:13 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Parametric Confidence Interval

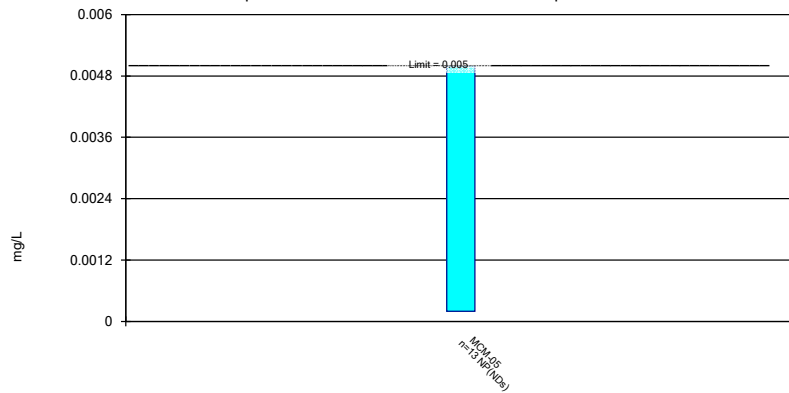
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 2/16/2021 4:13 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

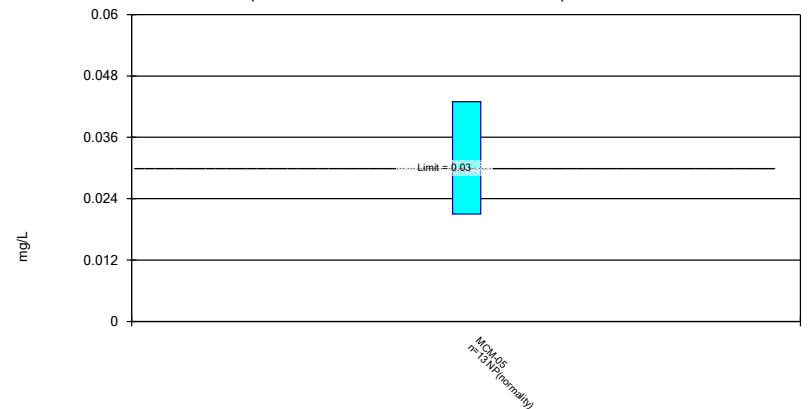
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 2/16/2021 4:13 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

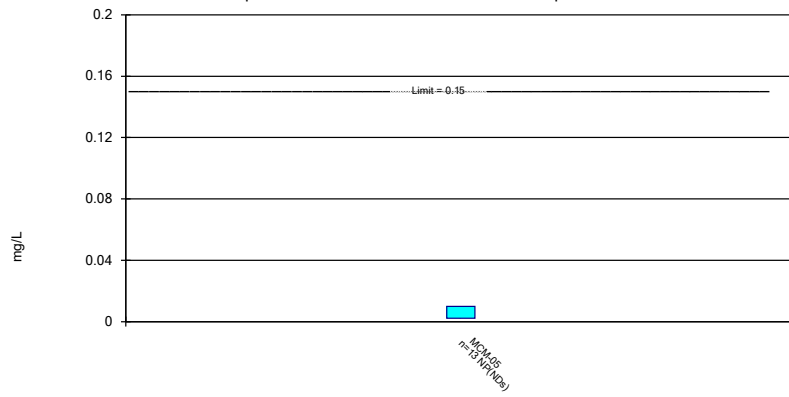
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lithium Analysis Run 2/16/2021 4:13 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Selenium Analysis Run 2/16/2021 4:13 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 2/16/2021 4:14 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.005
11/30/2016	0.0132
2/16/2017	0.0372
6/2/2017	0.0335
8/17/2017	0.0336
6/20/2018	0.019
9/27/2018	0.0035 (J)
11/7/2018	0.002 (J)
11/27/2018	0.0016 (J)
3/26/2019	0.0018 (J)
8/28/2019	0.0019 (J)
10/16/2019	0.0047 (J)
3/28/2020	<0.005
10/15/2020	0.024
1/4/2021	0.0072
Mean	0.01255
Std. Dev.	0.01336
Upper Lim.	0.0335
Lower Lim.	0.0019

Confidence Interval

Constituent: Barium (mg/L) Analysis Run 2/16/2021 4:14 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.0289
11/30/2016	0.0168
2/16/2017	0.016
6/2/2017	0.0393 (J)
8/17/2017	0.0188
6/20/2018	0.014
9/27/2018	0.0097 (J)
11/7/2018	0.0085 (J)
8/28/2019	0.011
10/16/2019	0.012
3/28/2020	0.0041 (J)
10/15/2020	0.45
1/4/2021	0.051
Mean	0.05232
Std. Dev.	0.1202
Upper Lim.	0.051
Lower Lim.	0.0085

Confidence Interval

Constituent: Beryllium (mg/L) Analysis Run 2/16/2021 4:14 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.003
11/30/2016	<0.003
2/16/2017	<0.003
6/2/2017	<0.003
8/17/2017	<0.003
6/20/2018	<0.003
9/27/2018	<0.003
11/7/2018	5.4E-05 (J)
8/28/2019	<0.003
10/16/2019	<0.003
3/28/2020	<0.003
10/15/2020	<0.003
1/4/2021	<0.003
Mean	0.002773
Std. Dev.	0.0008171
Upper Lim.	0.003
Lower Lim.	5.4E-05

Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 2/16/2021 4:14 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.005
11/30/2016	<0.005
2/16/2017	<0.005
6/2/2017	<0.005
8/17/2017	<0.005
6/20/2018	<0.005
9/27/2018	<0.005
11/7/2018	<0.005
8/28/2019	<0.005
10/16/2019	<0.005
3/28/2020	<0.005
10/15/2020	0.0019 (J)
1/4/2021	<0.005
Mean	0.004762
Std. Dev.	0.0008598
Upper Lim.	0.005
Lower Lim.	0.0019

Confidence Interval

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 2/16/2021 4:14 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	2.39 (D)
11/30/2016	1.66
2/16/2017	2.71
6/2/2017	1.99
8/17/2017	1.87
6/20/2018	1.95
9/27/2018	0.629 (U)
11/7/2018	1.41 (U)
8/28/2019	1.67
10/16/2019	1.92
3/28/2020	1.44 (U)
10/15/2020	2.56
1/4/2021	5.84
Mean	2.157
Std. Dev.	1.231
Upper Lim.	2.84
Lower Lim.	1.334

Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 2/16/2021 4:14 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.93
11/30/2016	0.93
2/16/2017	0.6
6/2/2017	0.34
8/17/2017	0.52
6/20/2018	0.5
9/27/2018	0.32
11/7/2018	0.35
3/24/2019	0.32
8/28/2019	0.36
10/16/2019	0.41
11/20/2019	0.34
3/28/2020	0.34
10/15/2020	0.22
1/4/2021	<0.1
Mean	0.4353
Std. Dev.	0.2376
Upper Lim.	0.5768
Lower Lim.	0.2622

Confidence Interval

Constituent: Lead (mg/L) Analysis Run 2/16/2021 4:14 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	<0.005
11/30/2016	0.0002 (J)
2/16/2017	<0.005
6/2/2017	<0.005
8/17/2017	<0.005
6/20/2018	<0.005
9/27/2018	<0.005
11/7/2018	<0.005
8/28/2019	<0.005
10/16/2019	<0.005
3/28/2020	<0.005
10/15/2020	<0.005
1/4/2021	<0.005
Mean	0.004631
Std. Dev.	0.001331
Upper Lim.	0.005
Lower Lim.	0.0002

Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 2/16/2021 4:14 PM View: Addendum

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.0219 (J)
11/30/2016	0.0333 (J)
2/16/2017	0.0376 (J)
6/2/2017	0.0346 (J)
8/17/2017	0.0367 (J)
6/20/2018	0.034 (J)
9/27/2018	0.023 (J)
11/7/2018	0.022 (J)
8/28/2019	0.023 (J)
10/16/2019	0.021 (J)
3/28/2020	0.014 (J)
10/15/2020	0.57
1/4/2021	0.043 (J)
Mean	0.07032
Std. Dev.	0.1504
Upper Lim.	0.043
Lower Lim.	0.021

Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 2/16/2021 4:14 PM View: Addendum
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-05
8/31/2016	0.002 (J)
11/30/2016	0.0023 (J)
2/16/2017	0.002 (J)
6/2/2017	<0.01
8/17/2017	<0.01
6/20/2018	<0.01
9/27/2018	<0.01
11/7/2018	<0.01
8/28/2019	<0.01
10/16/2019	<0.01
3/28/2020	<0.01
10/15/2020	0.0028 (J)
1/4/2021	<0.01
Mean	0.007623
Std. Dev.	0.003716
Upper Lim.	0.01
Lower Lim.	0.0023