



Prepared for

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**ASSESSMENT OF CORRECTIVE
MEASURES REPORT**

**GEORGIA POWER COMPANY
PLANT HAMMOND ASH POND 3
(AP-3)**

Prepared by

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ASSESSMENT OF CORRECTIVE MEASURES REPORT

GEORGIA POWER COMPANY - PLANT HAMMOND

ASH POND 3 (AP-3)

This Assessment of Corrective Measures Report, Georgia Power Company - Plant Hammond Ash Pond 3 (AP-3), 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).

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LIST OF ACRONYMS

ACM	Assessment of Corrective Measures
AP	ash pond
CCR	coal combustion residuals
CFR	Code of Federal Regulations
cm/sec	centimeters per second
EPD	Environmental Protection Division
ft	feet
ft bgs	feet below ground surface
ft/day	feet per day
ft/ft	feet per foot
Georgia Power	Georgia Power Company
GWPS	Groundwater Protection Standard
HAR Rev 01	Hydrogeologic Assessment Report (Revision 01)
ISS	in-situ solidification/stabilization
K_h	horizontal hydraulic conductivity
MNA	monitored natural attenuation
O&M	operations and maintenance
P&T	pump and treat
PE	professional engineer
PRB	permeable reactive barriers
RCRA	Resource Conservation and Recovery Act
SSL	statistically significant level
US EPA	United States Environmental Protection Agency
ZVI	zero-valent iron

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (US EPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D] and the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management 391-3-4-.10, Geosyntec Consultants, Inc. (Geosyntec) has prepared this *Assessment of Corrective Measures (ACM) Report* for Georgia Power Company (Georgia Power) Plant Hammond (Site) Ash Pond 3 (AP-3). Pursuant to 40 CFR § 257.96 and Georgia Rule 391-3-4-.10(6)(a), this ACM evaluates potential corrective measures to address a statistically significant level (SSL) of molybdenum identified in the *2020 Annual Groundwater Monitoring and Corrective Action Report* (Geosyntec, 2020a), which is the target constituent for corrective measures presented in this report. Of note, EPD Rules for Solid Waste Management 391-3-4-.10(6)(a) adopt the Federal CCR rule by reference. For ease of reference, the USEPA CCR rules are cited within this report.

The ACM was initiated on July 9, 2020, within 90 days of identifying the SSL on May 8, 2020. A 60-day extension until December 4, 2020 for completion of the ACM was documented on October 7, 2020. This ACM is the first step in identifying viable corrective measures to address the SSL in groundwater at the Site. Based on the results of the ACM, further evaluation may be performed, site-specific studies completed, and a corrective action plan developed and implemented pursuant to 40 CFR § 257.97 and § 257.98. Due to the presence of a surface water feature in the downgradient direction of MW-41, installation of wells to horizontally characterize this area is infeasible. Georgia Power proactively collected surface water samples in July 2020 from three locations along Cabin Creek, two of which are applicable to evaluating the AP-3 groundwater/surface water conditions. Molybdenum was not detected in the three Cabin Creek surface water samples collected. Therefore, based on molybdenum results for data collected to date, no molybdenum impacts to surface water have been detected, and horizontal delineation is complete. Vertical delineation is currently in progress.

Georgia Power conducted a human health and ecological risk evaluation to evaluate constituents that exhibit SSLs in groundwater (i.e., molybdenum) at AP-3. The risk evaluation used a conservative, health-protective approach that is consistent with US EPA risk assessment guidance, EPD regulations and guidance, and standard practice for risk assessment in the State of Georgia. As part of the risk evaluation, a well survey of potential groundwater wells within a three-mile radius of AP-3 was conducted and consisted of reviewing federal, state, and county records and online sources in addition to conducting a windshield survey of the area. The risk evaluation relied on groundwater data collected by Georgia Power from August 2016 to March 2020 in compliance with

the federal and state CCR rules. Based upon this risk evaluation, which included multiple conservative assumptions, concentrations of molybdenum detected in groundwater at AP-3 are not expected to pose a risk to human health or the environment. The *Risk Evaluation Report – Georgia Power Company – Plant Hammond Ash Pond 3* (Geosyntec, 2020d) and associated well survey are provided as **Appendix A**.

1.1 Purpose

The purpose of this ACM is to begin the process of selecting corrective measure(s) for groundwater. This process is typically iterative and may be composed of multiple steps to analyze the effectiveness of corrective measures to address the potential migration of CCR constituents in groundwater at AP-3.

Once potential corrective measures are identified in this ACM, they are further evaluated using the criteria outlined in 40 CFR § 257.96 (c), which state that corrective measures assessment should include an analysis of the effectiveness of potential corrective measures that considers the following:

- Performance;
- Reliability;
- Ease of implementation;
- Potential impacts (including safety, cross-media, and exposure);
- The time required to begin and complete the remedy; and
- Any institutional requirements (e.g., permitting or environmental and public health requirements) that could affect implementation of the remedy.

These evaluation criteria are considered for each potential corrective measure. Further evaluation of the technologies will be required to select a corrective measure(s).

1.2 Site Location and Description

Plant Hammond is located in Floyd County, Georgia, approximately 10 miles west of Rome and is bordered by Georgia Highway 20 (GA-20) on the north, the Coosa River on the south, Cabin Creek and industrial land on the east, and sparsely populated, forested,

rural and industrial land on the west (**Figure 1**). The physical address of the plant is 5963 Alabama Highway, Rome, Georgia, 30165.

Plant Hammond is a four-unit, coal-fired electric generating facility. Georgia Power has submitted a new Integrated Resource Plan to the Georgia Public Service Commission in January 2019 which calls for the decertification of Plant Hammond. All four units are included in the decertification. The four units at Plant Hammond were retired on July 29, 2019 and no longer produce electricity.

AP-3 is a 25-acre former ash pond that was constructed in 1973 and 1974. Ash sluicing and placement operations at AP-3 commenced in June 1977. In the early 1980s, AP-3 was converted into a dry ash stacking area and, in the early 1990s, the pond stopped receiving CCR materials (i.e., AP-3 ceased receiving waste prior to the effective date of the CCR rule promulgated in April 2015).

1.3 Pond Closure

Georgia Power commenced closure of AP-3 in 2016 via closure in place and capping. A notification of intent to close AP-3 was placed in the Operating Record on December 7, 2015 and posted to Plant Hammond's CCR website within 30 days. The Closure Plan was submitted to the EPD as part of the closure permit application package, which described the closure activities and requirements in accordance with 40 CFR § 257.102. The Closure Plan and notification of closure completion are posted on Plant Hammond's publicly available website.

Because AP-3 was converted to a dry stacking operation in the early 1980s and operated as such until the early 1990s when the unit ceased receiving CCR material, AP-3 did not contain standing water and minimal liquid removal was required to prepare the subgrade for final cover system construction. The CCR material remaining in AP-3 was graded and a final cover system installed in the second quarter of 2018. The final cover system consists of a 60-mil high density polyethylene (HDPE) liner, geocomposite drainage media, a minimum 18-inch thick protective soil cover, and a 6-inch thick vegetative layer. The final cover system was designed to limit infiltration of precipitation by providing sufficient grades and slopes to promote precipitation runoff to discharge points along the intake and discharge canals along the perimeter of AP-3.

The closure of AP-3 in the manner described above provides a source control measure that reduces the potential for migration of CCR constituents to groundwater. Corrective

measures discussed in this ACM are being evaluated to address SSLs in groundwater at the waste boundary.

2.0 CONCEPTUAL SITE MODEL

The following section summarizes the geologic and hydrogeologic conditions at the Site as described in the *Hydrogeologic Assessment Report Revision 01 – Ash Pond 3* (HAR Rev 01) submitted to EPD under separate cover in support of the AP-3 closure permit application (Geosyntec, 2020b).

2.1 Geology

The Site is located within the Great Valley District of the Valley and Ridge Physiographic Province (Valley and Ridge) in northwest Georgia, which is characterized by Paleozoic sedimentary rocks that have been folded and faulted into the ridges and valleys that gave this region its name. Geologic mapping performed at the Site by Petrologic Solutions, Inc. under the direction of Golder (Golder, 2018) indicates that AP-3 is underlain by the middle units of the Cambrian age Conasauga Formation, consisting of mostly shaley limestone. Based on review of site-specific subsurface investigations, the bedrock at AP-3 was identified as limestone or shaley limestone. AP-3 is underlain primarily by five lithologic units: (i) fill material, (ii) terrace alluvium, (iii) residuum, (iv) highly weathered/fractured limestone bedrock, and (v) unweathered limestone bedrock. The extent of these units in vicinity of AP-3 is presented in cross-sections A-A', B-B', C-C', and D-D', presented as **Figures 2A** through **2D**, respectively. Boring logs and well construction diagrams used to generate the cross-sections are provided in the HAR Rev 01.

Based on subsurface investigations the fill is composed of lean clay or gravelly lean clay with sand, sometimes identified by the presence of wood or roots. The terrace alluvium consists of unconsolidated sediments with high sand and gravel content associated with deposition from the Coosa River and Cabin Creek. Residual or native soils have been derived from the in-place weathering of the shaley limestone bedrock. The residuum is generally described as fat clay with typically only trace amounts of sand and rarely gravel. Just below the residuum clay layer is a gradational zone of varying proportions of clayey residuum and sand, gravel, and cobble-sized angular pieces of partially weathered limestone, grading into a zone of fractured limestone, before grading into unweathered, fresh limestone. The upper highly weathered zone appears more as residuum with various sized rock fragments. The lower zone becomes less clayey with depth and is estimated to be approximately 5 feet thick. Most of the limestone is described as medium to dark gray with a slabby or flaggy habit when broken in pieces by the sonic drilling. The limestone is very finely laminated with lighter and darker gray layers and also contains interbeds of calcareous shale.

2.2 Hydrology and Groundwater Flow

The uppermost aquifer at AP-3 is a regional groundwater aquifer that occurs within the residuum and the weathered and fractured bedrock. The uppermost aquifer is considered to be unconfined; however, localized, semi-confined conditions may be encountered due to the low-permeability clayey nature of the residual soils or as a result of perched groundwater or poorly interconnected fracture networks in the bedrock. Based on observations of soil types and horizontal conductivity values, the movement of groundwater in the soil and, to some degree, the highly weathered bedrock zone can be characterized as low-to moderately permeable, porous media flow. Groundwater flow in the more competent underlying bedrock is characterized as fracture flow. Flow direction within the area of AP-3 is generally from west to east. Groundwater level data are recorded during each groundwater sampling event from the AP-3 well network, depicted on **Figure 3**, and discussed in detail in Section 3.1.1. Well construction details are presented in **Table 1**. The data are used to generate potentiometric surface maps that depict the groundwater flow direction and to calculate hydraulic gradients. The potentiometric surface maps representing the March 2020 and September 2020 groundwater level data are provided on **Figure 4** and **Figure 5**, respectively. Based on the March 2020 groundwater elevations, the hydraulic gradient across AP-3 was 0.01 feet per foot (ft/ft) and the groundwater flow velocity across AP-3 was approximately 0.18 ft/day (Geosyntec, 2020a).

3.0 NATURE AND EXTENT DELINEATION

The following describes monitoring-related field and assessment activities performed to date in support of (i) delineating the nature and extent of SSLs in groundwater and (ii) evaluating potential corrective measures to address them.

3.1 Groundwater Monitoring & Constituents of Concern

3.1.1 Groundwater Monitoring Program

In accordance with 40 CFR § 257.91, a groundwater monitoring system was installed at AP-3 that (1) consists of a sufficient number of wells, (2) is installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer, and (3) represents the groundwater quality both upgradient of the units (i.e., background conditions) and passing the waste boundary of the units. The number, spacing, and depths of the groundwater monitoring wells were selected based on the characterization of site-specific hydrogeologic conditions.

The current groundwater monitoring well network consists of seven upgradient compliance monitoring wells (HGWA-1, HGWA-2, HGWA-3, HGWA-43D, HGWA-44D, HGWA-45D, and HGWA-122) and five downgradient compliance monitoring wells (HGWC-120, HGWC-121A, HGWC-124, HGWC-125, and HGWC-126). Prior to November 2019, the certified compliance monitoring well network for AP-3 consisted of only four compliance monitoring wells (HGWA-122, HGWC-120, HGWC-121A, and HGWC-124). The original well network was certified by a professional engineer (PE) on April 17, 2019; the certification is maintained in the AP-3 Operating Records and posted on Georgia Power's website. Wells HGWC-125 and HGWC-126 were added to the network in May 2020 at the request of EPD. Wells HGWA-1, HGWA-2, HGWA-3, HGWA-43D, HGWA-44D, and HGWA-45D were incorporated into the AP-3 compliance well network in September 2020 to supplement HGWA-122 and further characterize background groundwater conditions upgradient of AP-3. Of this subset, wells HGWA-1, HGWA-2, and HGWA-3 were installed before January 2016 and also establish background groundwater conditions for Plant Hammond AP-1 and AP-2. Wells HGWA-43D, HGWA-44D, and HGWA-45D were installed in August 2020 and screened in bedrock to characterize groundwater conditions within lower portions of the aquifer than that provided by HGWA-1, HGWA-2, HGWA-3, and HGWA-122. Data from these three deeper wells will be used to better characterize background conditions for AP-3.

In addition, three delineation wells (MW-32, MW-41, and MW-46D) and three piezometers (MW-21, MW-23, and MW-39) are used to characterize groundwater conditions upgradient and downgradient of AP-3. The locations of the monitoring wells, delineation wells, and piezometers associated with AP-3 are shown on **Figure 3**; well construction details are listed in **Table 1**. Boring logs and well construction diagrams for the wells are provided in the HAR Rev 01. Additional groundwater monitoring details are provided in the *2020 Annual Groundwater and Corrective Action Monitoring Report* (Geosyntec, 2020a).

3.1.2 SSLs for Appendix IV Constituents

Groundwater monitoring data collected during the initial Appendix IV sampling event in August 2019 and semiannual monitoring events in October 2019 and March 2020 were statistically analyzed pursuant to 40 CFR § 257.93(f) and in general accordance with the US EPA document *Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance* (Unified Guidance) (US EPA, 2009). Following federal and state rule requirements, separate groundwater protection standards (GWPS) were established for statistical comparisons of Appendix IV assessment monitoring parameters. Appendix IV GWPS are provided in **Table 2**. Appendix IV parameters detected during the semiannual monitoring event were compared to GWPS to assess if concentrations in compliance wells statistically exceeded the GWPS. Details regarding the statistical analyses are provided in the *2020 Annual Groundwater and Corrective Action Monitoring Report* (Geosyntec, 2020a).

Based on the statistical analysis of Appendix IV constituents, the following constituents exceeded the state or federal GWPS for the identified assessment monitoring event:

October 2019 Assessment Monitoring Event

AP-3 (Federal CCR Rule):

- No SSLs were reported above federal GWPS.

AP-3 (State CCR Rule):

- Lithium: HGWC-120
- Molybdenum: HGWC-120

March 2020 Assessment Monitoring Event

AP-3 (Federal CCR Rule):

- No SSLs were reported above federal GWPS.

AP-3 (State CCR Rule):

- Molybdenum: HGWC-120

A groundwater exceedance notification acknowledging the October 2019 SSLs of lithium and molybdenum was placed in the Operating Record on May 8, 2020 pursuant to 40 CFR § 257.95(g) and § 257.105(h)(8). A reduced lithium groundwater concentration reported in March 2020 for HGWC-120 reduced the lower confidence interval to below the state GWPS of 0.03 mg/L, thereby no longer triggering an SSL status for the constituent. A notification acknowledging the March 2020 SSL of molybdenum was placed in the Operating Record on August 7, 2020.

3.2 Field Investigation Activities

Pursuant to 40 CFR § 257.96, groundwater in the vicinity of AP-3 continues to be monitored during the ACM phase in accordance with the assessment monitoring program established for AP-3 in 2019. The following summarizes the field investigation activities and data evaluations completed since submitting the *2020 Annual Groundwater Monitoring and Corrective Action Report* in July 2020 (Geosyntec, 2020a).

- *August 19-26, 2020:* HGWA-43D, 44D, and 45D were installed as background compliance wells. MW-46D was installed as a piezometer to evaluate groundwater conditions near HGWC-120.
- *September 2020:* Piezometers MW-32 and MW-41 were reclassified as horizontal delineation wells to horizontally characterize Appendix IV constituents downgradient of HGWC-120, and MW-46D was reclassified as a vertical delineation well to vertically characterize conditions of HGWC-120.
- *August and September 2020:* Two routine assessment monitoring events were conducted. The groundwater samples from the September 2020 event were analyzed for Appendix III and Appendix IV constituents, as well as the major cations and anions and select additional constituents (i.e., iron, manganese, and sulfide). The major ions and supplemental constituents were collected to characterize the geochemical conditions of groundwater. These data can also be

used to evaluate and compare downgradient conditions to background conditions, as well as in support of evaluating the corrective measures presented in Section 4.

The groundwater analytical results for the August and September 2020 events are summarized in **Table 3**. Also included in **Table 3** are data from prior sampling conducted throughout the installation of MW-32, MW-41, and MW-46D. Laboratory reports associated with the August and September 2020 data are provided in **Appendix B**.

3.3 Delineation Summary

Groundwater data from the semiannual assessment monitoring events conducted in March 2020 and September 2020 were used to generate the molybdenum iso-concentration maps presented on **Figure 6** and **Figure 7**, respectively. The data set includes delineation wells MW-32 and MW-41 in addition to the compliance monitoring wells. HGWA-43D, HGWA-44D, HGWA-45D, and MW-46D are screened at deeper intervals of the aquifer and therefore the September 2020 molybdenum data were not used to develop the iso-concentration map.

The data indicate molybdenum concentrations in excess of the state GWPS of 0.010 mg/L are reported in wells HGWC-120, MW-32, and MW-41. Due to the presence of a surface water feature in the downgradient direction of MW-41 (refer to **Figure 7**), installation of an additional well to horizontally characterize this area is infeasible. Georgia Power proactively collected surface water samples in July 2020 from three locations along Cabin Creek, two of which are applicable to evaluating the AP-3 groundwater/surface water conditions. The surface water locations are shown on **Figure 7**. Sample location H-SCC NBR is located upstream of the Site, and therefore the data are considered representative of background conditions. Sample location H-SCC E41 is located immediately downgradient of MW-41. The surface water sample collected from both locations indicate molybdenum is not detected. Based on molybdenum results for data collected to date, no molybdenum impacts to surface water have been detected, and horizontal delineation is complete. The laboratory report associated with the surface water sampling event conducted July 17, 2020 is provided in **Appendix B**. Georgia Power anticipates sampling these locations on a semiannual basis to coincide with the semiannual assessment monitoring events.

4.0 GROUNDWATER CORRECTIVE MEASURES

4.1 Objectives of the Corrective Measures

In evaluating the effectiveness of potential corrective measures using the criteria listed in 40 CFR § 257.96(c), including performance, reliability, ease of implementation, potential impacts, time required, and institutional and public health requirements, the following criteria listed in 40 CFR § 257.97(b) must be met by the corrective measure when selected:

- Be protective of human health and the environment;
- Attain applicable groundwater protection standards as specified pursuant to 40 CFR § 257.95(h);
- Control the sources of releases to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV to this part to the environment;
- Remove from the environment as much of the contaminated material that was released from the CCR unit as is feasible, taking into account factors such as avoiding inappropriate disturbance of sensitive ecosystems; and
- Comply with standards for management of wastes as specified in 40 CFR § 257.98(d).

Corrective measures selected for evaluation herein for potential use at AP-3 are anticipated to satisfy the above criteria to varying degrees of effectiveness.

4.2 Summary of Corrective Measures

The closure of AP-3, as described in Section 1.3, is a source control measure that reduces the potential for migration of CCR constituents to groundwater. Georgia Power has decided to install a *TreeWell*[®] system as an Advanced Engineering Method (AEM). The process of final design and installation of that *TreeWell* system is underway. While the purpose of the AEMs are different than corrective measures, Georgia Power plans to evaluate their effectiveness before determining if additional *TreeWell* or enhancements to the *TreeWell* system should be incorporated into this ACM. Corrective measures discussed in this ACM are being evaluated to address SSLs in groundwater at and downgradient of the compliance boundary.

This section presents potential corrective measures capable of remediating the molybdenum detected in groundwater above background concentrations. Each corrective measure is evaluated relative to criteria specified in 40 CFR § 257.96(c) and 40 CFR § 257.97(b). **Table 4** provides a comparative screening of the corrective measures discussed in Section 4.

The following potential corrective measures are considered in this ACM:

- Geochemical Approaches (In-Situ Injection)
- Hydraulic Containment (Pump and Treat)
- In-Situ Solidification/Stabilization
- Monitored Natural Attenuation (MNA)
- Permeable Reactive Barrier
- Phytoremediation
- Subsurface Vertical Barrier Walls

While in-situ solidification/stabilization (ISS) is generally considered a viable option for either small source areas or targeted zones within a larger footprint, this potential corrective measure is not a viable corrective measure at AP-3. The closure of AP-3 as previously described caps the CCR materials beneath an engineered cover system that minimizes the potential mobilization of CCR constituents into groundwater.

Phytoremediation is the use of plants to degrade, immobilize, or contain constituents in soil, groundwater, surface water, and sediments. Over recent decades, phytoremediation has emerged as a viable alternative to more active environmental cleanup technologies, especially for large areas with relatively low levels of constituents in shallow soils or groundwater. The effectiveness of groundwater remediation using traditional phytoremediation approaches may be limited by compacted soil conditions that impede root penetration or target groundwater that is too deep for root access. Given that groundwater wells at AP-3 that exhibited SSLs for molybdenum are screened to depths greater than 15 ft bgs, traditional plantings for phytoremediation are not expected to be successful.

Therefore, ISS and traditional phytoremediation are not considered applicable groundwater corrective measure for AP-3 and no detailed evaluations are discussed below or provided in **Table 4**.

4.2.1 Geochemical Approaches (In-Situ Injection)

Molybdenum can be precipitated and/or immobilized under different combinations of pH and redox conditions. A variety of pH and/or redox-altering technologies are available, with the most promising ones incorporating biological processes that promote the precipitation of insoluble minerals. Furthermore, chemical oxidants and reductants, and/or mechanical processes such as air sparging can be employed to alter geochemical conditions favorable to the attenuation of certain constituents, including molybdenum. These processes can be used to decrease the mobility of these constituents.

For example, insoluble (or sparingly soluble) molybdenite [Mo(IV)S₂] may be formed under sulfate-reducing conditions by indigenous microbial populations. These conditions can be induced or enhanced by injecting electron donors such as emulsified vegetable oil (EVO), lactate, or ethanol into groundwater together with a sufficient supply of sulfate, if needed. Molybdenum can also be sorbed to aluminum and iron oxides as well as clay minerals.

To understand the biogeochemical processes that would effectively immobilize target constituents in groundwater, site-specific bench-scale and pilot-scale treatability studies are needed to prepare an effective amendment to create the appropriate conditions for the precipitation and/or sorption of these minerals without mobilizing other naturally-occurring constituents. Once precipitated, these minerals are often stable even if geochemical conditions revert back to a different redox environment. However, if not properly designed and implemented, manipulating redox conditions without forming the desired compounds may increase the mobility of naturally-occurring constituents such as iron, manganese, and arsenic.

Air sparging can be used to provide oxygen to the subsurface in an attempt to precipitate out (or make more “sorptive”) compounds that are generally more soluble and mobile under reducing conditions. This can also support the precipitation of iron and manganese oxides, which would provide additional sorption sites for molybdenum.

Furthermore, in-situ chemical oxidation (ISCO) or in-situ chemical reduction (ISCR) can be used to chemically alter the redox environment in the subsurface to affect the mobility and/or bioavailability of certain inorganic compounds.

The main limiting process in these in-situ remedial approaches is the delivery of the compounds within the area of interest. Mixing and contact with the target constituents are necessary and can be difficult in heterogeneous materials and fine-grained materials.

While it is currently not well understood whether molybdenum can be efficiently attenuated using in-situ redox manipulations due to slow reaction kinetics, there is enough potentially supporting evidence to retain in-situ injections for further consideration as a corrective measure to address molybdenum in groundwater at AP-3, especially in smaller, more localized areas as indicated by current data.

4.2.2 Hydraulic Containment (Pump and Treat)

Generally, hydraulic containment (or control) refers to the use of groundwater extraction to artificially induce a hydraulic gradient and capture or control the migration of impacted groundwater. One example, groundwater pump and treat (P&T), is often considered to be a viable remedial technology at many sites (US EPA, 1996). This approach uses extraction wells or trenches to capture groundwater, which may subsequently require above-ground treatment and permitted discharge to a receiving water body or sewer system, reinjection into the aquifer, or reuse at the generating station. Groundwater P&T is often relatively slow as a means to restore groundwater quality over a long-term period, but can be effective as an interim measure, or combined with another measure, to provide hydraulic containment to limit constituent migration toward a potential receptor.

Groundwater extraction for hydraulic control can often effectively address the variety of inorganic constituents encountered at CCR sites, including molybdenum. Extraction technologies also have the ability to overcome the limitations of in situ injection-based technologies (i.e., mixing and contact with affected materials, and to access impacted groundwater in lower permeability geologic formations such as fractured bedrock). Space constraints are mainly limited to the above-ground conveyance and treatment component of a P&T system since extraction wells can generally be installed into relatively tight spaces at the edge of waste or other points of compliance. Proximity of the extraction wells to Cabin Creek should be considered to avoid drawing water from Cabin Creek in lieu of groundwater. Consideration should also be given to the installation of extraction wells in the immediate vicinity of AP-3 due to geotechnical considerations in the context of the site-specific geology.

Extracted groundwater may need to be treated prior to discharge (depending on discharge permit requirements) but does have the potential to be used for irrigation (e.g., of a cover system or other vegetated areas at the Site) or dust suppression purposes. It could also be used as moisture conditioning of dry ash that is being landfilled. Therefore, P&T is a potentially viable corrective measure for molybdenum in groundwater at AP-3 and will be retained for further evaluation.

4.2.3 Monitored Natural Attenuation

The US EPA defines monitored natural attenuation (MNA) as the reliance on natural attenuation processes (within the context of a carefully controlled and monitored site cleanup approach) to achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by other more active methods. The natural attenuation processes that are at work in such a remediation approach include a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater. These in-situ processes include biodegradation; dispersion; dilution; sorption; volatilization; radioactive decay; and chemical or biological stabilization, transformation, or destruction of contaminants (US EPA, 2015b).

Attenuation mechanisms for inorganic constituents, such as molybdenum, are either physical (e.g., dilution, dispersion, flushing, and related processes) or chemical (e.g., sorption or oxidation reduction reactions). Select chemical processes can be facilitated by (bio)geochemical reactions. Per US EPA (2015b) *“MNA may, under certain conditions (e.g., through sorption or oxidation-reduction reactions), effectively reduce the dissolved concentrations and/or toxic forms of inorganic contaminants in groundwater and soil. Both metals and non-metals (including radionuclides) may be attenuated by sorption reactions such as precipitation, adsorption on the surfaces of soil minerals, absorption into the matrix of soil minerals, or partitioning into organic matter. Oxidation-reduction (redox) reactions can transform the valence states of some inorganic contaminants to less soluble and thus less mobile forms (e.g., hexavalent uranium to tetravalent uranium) and/or to less toxic forms (e.g., hexavalent chromium to trivalent chromium).”* Molybdenum undergoes sorption to iron and manganese oxides and can form insoluble minerals under sulfate-reducing conditions.

The US EPA uses four phases to establish whether MNA can be successfully implemented at a given site. The phases (or steps) include:

1. Demonstration that SSLs in groundwater are delineated and stable.
2. Evaluation of the mechanisms and rates of attenuation.
3. Assessment if the capacity of the aquifer is sufficient to attenuate the mass of constituents in groundwater and that the immobilized constituents are stable and will not remobilize.

4. Design of a performance monitoring program based on the mechanisms of attenuation and including a decision framework for consideration of a contingent remedy tailored to site-specific conditions should MNA not perform adequately.

Physical and chemical MNA mechanisms for molybdenum, including dilution, dispersion, sorption, and precipitation, can be operational. A successful MNA approach requires a good understanding of hydrogeologic conditions and may require additional information and monitoring over an extended period of time. MNA may be used as a stand-alone corrective measure for groundwater impacted by dissolved molybdenum but is frequently used in combination with a second technology. At this time, MNA is a potentially viable corrective measure for molybdenum in groundwater at AP-3 and will be retained for further evaluation.

4.2.4 Permeable Reactive Barriers

Permeable reactive barriers (PRBs) can present a viable alternative for in-situ treatment of molybdenum. The technology typically involves the installation of a subsurface wall constructed with reactive media such as zero-valent iron (ZVI), biologically active media (to induce oxidizing or reducing conditions), or clays, apatite, zeolites, and/or peat moss (to promote ionic exchange and/or sorption). PRBs have proven to be effective in passively treating several inorganic constituents found at CCR sites, including arsenic, selenium, and chromium (ITRC, 2011). The use of PRBs for molybdenum has been tested, but additional site-specific testing is needed to confirm the applicability of this technology to remove molybdenum from groundwater since it has shown early breakthrough with ZVI-type media in some studies (Morrison et al., 2006).

PRBs can be installed in downgradient locations using conventional excavation methods or one-pass trenching method. Excavated trenches get backfilled with reactive media to create a barrier that treats dissolved constituents as they passively flow through the PRB with the groundwater. These systems can either be constructed as continuous “walls” or as “funnel-and-gate” systems where (impermeable) slurry walls create a “funnel” that directs groundwater to permeable “treatment gates” filled with reactive materials. Since the costs for reactive materials (e.g., ZVI or similar) are generally higher than bentonite-based slurry wall construction, these configurations with a smaller treatment area help to lower construction and maintenance costs. Similar to slurry walls (see Section 4.2.6), PRBs are typically keyed into an underlying low-permeability unit such as a clay layer or bedrock.

The installation depths of a PRB unit are generally limited to about 90 ft below ground surface (ft bgs). The installation of a PRB generally requires more space than extraction wells, but the system does not require above-ground treatment components; therefore, the overall treatment footprint is likely to be smaller compared to a P&T system.

While additional subsurface investigations, aquifer testing, reactive media testing, and compatibility testing of groundwater and a slurry wall component of a PRB will be needed to further evaluate the feasibility of installing a PRB at AP-3, the technology is currently considered to be a potentially viable corrective measure to address molybdenum in groundwater at AP-3 and will be retained for further evaluation.

4.2.5 Subsurface Vertical Barrier Walls

Subsurface vertical barrier walls (which include slurry walls) have been used for seep control and groundwater cutoff at impoundments and waste disposal units for more than three decades. In general, barrier walls are designed to provide containment; localized treatment achieved through the sorption or chemical precipitation reactions from construction of the walls are incidental to the design objective.

This approach involves placing a barrier to groundwater flow in the subsurface, frequently around the source area (or the downgradient limits of the source area), to prevent future migration of dissolved constituents in groundwater from beneath the source to downgradient areas. Barrier walls can also be used in downgradient applications to limit groundwater movement. A variety of barrier materials can be used, including cement and/or bentonite slurries or various mixtures of soil with cement or bentonite, geomembrane composite materials, or driven materials such as steel or vinyl sheet piles.

The installation of these low-permeability walls is similar to the methods described for PRBs above. In general, sheet piling and trenching are typically limited to depths of approximately 50 ft bgs, even though specialty drilling/installation techniques can achieve depths up to 90 ft bgs. However, site-specific geologic and technology-specific considerations may limit this depth to shallower installations.

Groundwater pumping is required upgradient of the barrier wall to maintain an inward hydraulic gradient. The extracted groundwater may also require treatment in an above-ground treatment system, depending on the effluent discharge strategy.

While additional subsurface investigations, aquifer testing, and wall compatibility testing with the groundwater chemistry will be needed to further evaluate the feasibility as well

as the placement of a barrier wall at AP-3, the technology is currently considered to be a potentially viable corrective measure to address molybdenum at AP-3 and will be retained for further evaluation. However, it is more likely to be a component of a potential PRB application rather than a stand-alone corrective measure.

5.0 REMEDY SELECTION PROCESS

The purpose of this ACM is to begin the process of selecting corrective measure(s) for groundwater based on further evaluation using the criteria outlined in 40 CFR § 257.96. The following sections present the pond closure and site management strategy, additional data gathering, schedule, reporting, and next steps.

5.1 Pond Closure and Site Management Strategy

As described in Section 1.3, source control at AP-3 is considered complete. Georgia Power closed AP-3 in 2018 via closure in place with the construction of a final engineered cover system, including a geomembrane component, to cap the unit. The closure of AP-3 in this manner provides a source control measure that reduces the potential for migration of CCR constituents to groundwater.

Georgia Power plans to proactively utilize adaptive management for Plant Hammond AP-3 to support the remedial strategy and to address changes in conditions (e.g., successful reduction of constituent concentrations or changing trends) as appropriate. Under an adaptive management strategy:

- A corrective measure will be installed or implemented to address current conditions;
- The performance of the corrective measure will be monitored, evaluated, and reported at least semiannually;
- The conceptual model will be updated as more data are collected; and
- Adjustments and augmentations will be made to the corrective measure(s), as needed, to assure that performance criteria and remedial goals are met.

5.2 Additional Data Gathering

Additional data gathering, data analysis, and site-specific evaluations are necessary to refine the conceptual site model and to evaluate the feasibility of each corrective measure presented herein such that an appropriate groundwater corrective measure may be selected. Some of the data needed to refine the conceptual site model may be collected concurrent with routine groundwater monitoring events under the assessment monitoring program or during supplementary sampling, if required. However, additional data collection that includes geochemical studies of the groundwater and aquifer media,

geochemical and/or groundwater flow or fate and transport modeling, material compatibility testing, bench scale studies, and pilot tests may require approximately 18 to 24 months to complete. Once sufficient data are available to arrive at a focused number of corrective measures or a combination of corrective measures that would provide an effective groundwater remedy, necessary steps will be taken to implement a remedy at the Site in accordance with 40 CFR § 257.98.

5.3 Schedule, Reporting, and Next Steps

Additional data collection will be required to further evaluate the corrective measures presented within this report. Georgia Power will prepare semiannual progress reports to document Site groundwater conditions, results associated with additional data collection in support of the ACM, results of the ongoing vertical delineation of molybdenum in groundwater, and the progress in selecting and designing the corrective measure(s) in accordance with 40 CFR § 257.97(a). The initial semiannual progress report updating this ACM will be provided in February 2021 to coincide with the next groundwater monitoring and corrective action report; the semiannual progress report will be included as an appendix to the routine monitoring report. The semiannual progress report will also be posted individually to Georgia Power's website.

At least 30 days prior to the selection of the corrective measure(s), a public meeting to discuss the results of the corrective measures assessment will be held pursuant to 40 CFR § 257.96(e). The final corrective measure selection report will be developed as outlined in 40 CFR § 257.97(a). Once the corrective measure has been selected, the implementation of the remedy will be initiated in accordance with 40 CFR § 257.98.

6.0 REFERENCES

- Geosyntec Consultants. 2019. 2018 Annual Groundwater Monitoring and Corrective Action Report - Plant Hammond Ash Ponds 1 & 2 (AP-1 and AP-2), January 2019.
- Geosyntec Consultants. 2020a. 2020 Annual Groundwater Monitoring and Corrective Action Report - Plant Hammond Ash Pond 3 (AP-3), July 2020.
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- Morrison S.J., P.S. Mushovic, and P.L. Niesen. 2006. Early Breakthrough of Molybdenum and Uranium in a Permeable Reactive Barrier. *Environ. Sci. Technol.* 40(6): 2018-2024.
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- U.S. Environmental Protection Agency. 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*. Office of Resource Conservation and Recovery – Program Implementation and Information Division, March 2009.
- U.S. Environmental Protection Agency. 2015a. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. [EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER]. RIN-2050-AE81, April 2015.
- U.S. Environmental Protection Agency. 2015b. 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 2015.

TABLES

Table 1
Monitoring Well Network Summary
Plant Hammond AP-3, Floyd County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing ⁽¹⁾	Easting ⁽¹⁾	Ground Surface Elevation ⁽²⁾ (ft)	Top of Casing Elevation ⁽²⁾ (ft)	Top of Screen Elevation ⁽²⁾ (ft)	Bottom of Screen Elevation ⁽²⁾ (ft)	Well Depth (ft BTOC) ⁽³⁾	Screen Interval Length
Compliance Monitoring Well										
HGWA-1	Upgradient	12/3/2014	1550423.32	1940770.00	592.32	595.21	573.12	563.12	32.49	10
HGWA-2	Upgradient	12/2/2015	1549796.87	1939845.15	585.29	587.92	570.29	560.29	27.95	10
HGWA-3	Upgradient	12/2/2015	1549794.41	1939833.39	585.23	587.74	553.23	543.23	44.51	10
HGWA-43D	Upgradient	8/26/2020	1550422.85	1940753.80	592.08	595.08	544.08	534.08	61.25	10
HGWA-44D	Upgradient	8/25/2020	1550409.13	1940756.18	592.01	594.79	491.76	481.76	113.28	10
HGWA-45D	Upgradient	8/19/2020	1551157.68	1941907.54	584.08	586.95	535.23	525.23	62.87	10
HGWA-122	Upgradient	11/20/2014	1551251.42	1941887.11	585.04	587.90	570.54	560.54	27.76	10
HGWC-120	Downgradient	6/27/2016	1551067.24	1942926.62	602.83	605.82	548.83	538.83	67.00	10
HGWC-121A	Downgradient	7/17/2017	1550607.97	1943030.44	582.31	584.69	556.71	546.71	37.98	10
HGWC-124	Downgradient	11/13/2014	1551624.93	1942781.05	579.80	582.52	557.80	547.80	35.12	10
HGWC-125	Downgradient	5/4/2020	1550821.41	1942962.87	605.70	608.89	556.03	546.03	63.19	10
HGWC-126 ⁽⁴⁾	Downgradient	11/25/2019	1550422.03	1942689.40	608.72	611.24	552.72	542.72	68.52	10
Delineation Well										
MW-32	Downgradient	11/22/2019	1551092.83	1943021.47	583.10	585.46	559.30	549.30	36.16	10
MW-41	Downgradient	5/18/2020	1551158.16	1943196.47	574.87	577.25	563.20	553.20	24.38	10
MW-46D	Downgradient	8/18/2020	1551056.48	1942929.10	603.17	605.72	513.92	503.92	102.05	10
Piezometer										
MW-21	Downgradient	12/3/2014	1550270.15	1941809.76	583.60	586.27	570.40	560.40	26.28	10
MW-23	Downgradient	11/24/2014	1551641.44	1942496.83	582.13	584.91	563.03	553.03	32.28	10
MW-39	Downgradient	3/16/2020	1551111.45	1943089.26	577.60	580.42	564.93	554.93	25.82	10

Notes:

ft = feet.

ft BTOC = feet below top of casing.

(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Survey data certified May 19, 2020. HGWA-43D, HGWA-44D, HGWA-45D and MW-46D survey data certified September 10, 2020.

(2) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Survey data certified May 19, 2020. HGWA-43D, HGWA-9, HGWA-10 and MW-46D survey data certified September 10, 2020.

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

(4) Well HGWC-126 was originally installed as piezometer MW-31 but reclassified as a compliance monitoring well in May 2020.

Table 2
 Summary of Groundwater Protection Standards
 Plant Hammond AP-3, Floyd County, Georgia

Analyte	Units	Background ⁽¹⁾	Federal GWPS ⁽²⁾	State GWPS ⁽³⁾
Antimony	mg/L	0.003	0.006	0.006
Arsenic	mg/L	0.005	0.01	0.01
Barium	mg/L	0.053	2	2
Beryllium	mg/L	0.003	0.004	0.004
Cadmium	mg/L	0.0025	0.005	0.005
Chromium	mg/L	0.01	0.1	0.1
Cobalt	mg/L	0.005	0.006	0.005
Fluoride	mg/L	0.28	4	4
Lead	mg/L	0.005	0.015	0.005
Lithium	mg/L	0.03	0.04	0.03
Mercury	mg/L	0.0005	0.002	0.002
Molybdenum	mg/L	0.01	0.1	0.01
Selenium	mg/L	0.01	0.05	0.05
Thallium	mg/L	0.001	0.002	0.002
Combined Radium-226/228	pCi/L	1.81	5	5

Notes:

"mg/L" = milligrams per liter

"pCi/L" = picocuries per liter

1. The background limits were 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). The background limits were from the March 2020 monitoring event.
2. Under 40 CFR §257.95(h)(1-3) the GWPS is: (i) the maximum contaminant level (MCL) established under 141.62 and 141.66 of this title; (ii) where an MCL has not been established a rule-specific GWPS is used; or (iii) background concentrations for constituents where the background level is higher than the MCL or rule-specified GWPS.
3. Under the existing Georgia EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background concentrations for constituents where the background level is higher than the MCL.

Table 3
Summary of Analytical Data
Plant Hammond AP-3, Floyd County, Georgia

Well ID:	HGWA-1	HGWA-1	HGWA-2	HGWA-2	HGWA-3	HGWA-3	HGWA-43D	HGWA-44D	HGWA-45D	HGWA-122	HGWA-122	
Sample Date:	8/28/2020	9/15/2020	8/5/2020	9/15/2020	8/25/2020	9/15/2020	9/16/2020	9/16/2020	9/25/2020	8/24/2020	9/15/2020	
Parameter ^(1,2)												
APPENDIX III	Boron	--	0.017 J	--	0.044 J	--	0.0071 J	0.061 J	0.23	0.16	--	0.22
	Calcium	--	103	--	21.1	--	73.1	56.0	30.0	56.8	--	75.8
	Chloride	--	13.4	--	5.0	--	6.0	4.1	4.1	3.6	--	3.6
	Fluoride	0.080 J	0.082 J	<0.050	<0.050	<0.050	<0.050	0.058 J	0.22	0.21	0.075 J	0.096 J
	pH⁽³⁾	7.02	7.15	5.17	5.22	7.14	7.29	7.52	7.83	7.57	6.54	6.68
	Sulfate	--	47.3	--	51.5	--	44.7	43.0	43.0	6.8	--	41.4
	TDS	--	265	--	124	--	258	272	270	263	--	267
APPENDIX IV	Antimony	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	0.00051 J	0.00049 J	<0.00028	<0.00028	0.0010 J
	Arsenic	<0.00078	--	<0.00078	--	<0.00078	--	<0.00078	<0.00078	<0.00078	<0.00078	--
	Barium	0.036	0.035	0.11	0.12	0.11	0.12	0.26	0.24	0.49	0.041	0.039
	Beryllium	<0.000046	<0.000046	0.00014 J	0.00013 J	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046
	Cadmium	<0.00012	--	<0.00012	--	<0.00012	--	<0.00012	<0.00012	<0.00012	<0.00012	--
	Chromium	<0.00055	<0.00055	0.00067 J	<0.00055	<0.00055	<0.00055	<0.00055	0.0012 J	<0.00055	0.00093 J	0.00067 J
	Cobalt	<0.00038	<0.00038	0.018	0.021	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038	<0.00038
	Fluoride	0.080 J	0.082 J	<0.050	<0.050	<0.050	<0.050	0.058 J	0.22	0.21	0.075 J	0.096 J
	Lead	0.000070 J	<0.000036	0.000085 J	0.000080 J	<0.000036	0.000042 J	0.000050 J	0.00021 J	<0.000036	0.000077 J	0.000043 J
	Lithium	0.00087 J	0.00087 J	0.0015 J	0.0015 J	0.0027 J	0.0026 J	0.0018 J	0.014 J	0.0049 J	<0.00081	<0.00081
	Mercury	<0.000078	--	<0.000078	--	<0.000078	--	<0.000078	<0.000078	<0.000078	<0.000078	--
	Molybdenum	<0.00069	<0.00069	<0.00069	<0.00069	<0.00069	<0.00069	0.0044 J	0.0019 J	0.0014 J	0.0031 J	0.0045 J
	Combined Radium 226/228	0.000 U	0.748 U	0.778 U	0.756 U	0.330 U	0.161 U	0.531 U	0.422 U	1.07 U	0.883 U	0.375 U
	Selenium	<0.0016	--	<0.0016	--	<0.0016	--	<0.0016	<0.0016	<0.0016	<0.0016	--
Thallium	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	<0.00014	<0.00014	<0.00014	--	
GEOCHEM	Bicarbonate Alkalinity	--	307	--	26.1	--	187	251	294	272	--	202
	Iron	--	0.087	--	0.78	--	0.26	0.02 J	0.42	0.48	--	0.031 J
	Magnesium	--	4.3	--	2.5	--	4.6	18.3	15.1	19.4	--	5.6
	Manganese	--	0.18	--	0.61	--	0.22	0.010 J	0.020 J	0.053	--	0.0055 J
	Potassium	--	0.34	--	0.89	--	0.46	0.97	3.2	2.1	--	0.90
	Sodium	--	21.1	--	7.4	--	4.9	14.0	50.3	19.0	--	7.1
	Sulfide	--	<0.050	--	<0.050	--	<0.050	<0.050	0.11	0.68	--	<0.050

Notes:

-- = Parameter was not analyzed

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

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

U = Indicates the parameter was not detected above the minimum detection concentration (MDC, specific to combined radium)

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

(2) Metals were analyzed by EPA Method 6010D/6020B, Mercury was analyzed by EPA Method 7470A, anions were analyzed by EPA Method 300.0, TDS was analyzed by Standard Method 2450C-2011, and combined radium by EPA Methods 9315/9320.

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

(4) Cabin Creek surface water sampling location; refer to included Figure 3 for locations. Non-detect values reported below the RL.

Table 3
Summary of Analytical Data
Plant Hammond AP-3, Floyd County, Georgia

Well ID:		HGWC-120	HGWC-120	HGWC-121A	HGWC-121A	HGWC-124	HGWC-124	HGWC-125	HGWC-125	HGWC-126	HGWC-126
Sample Date:		8/26/2020	9/21/2020	8/26/2020	9/28/2020	8/27/2020	9/28/2020	8/25/2020	9/21/2020	8/25/2020	9/18/2020
Parameter ^(1,2)											
APPENDIX III	Boron	--	0.93	--	2.3	--	0.43	1.4	1.4	0.016 J	0.041 J
	Calcium	--	152	--	167	--	107	186	155	130	119
	Chloride	--	2.4	--	23.2	--	2.5	10.6	12.1	8.7	8.4
	Fluoride	0.48	0.33	0.16	0.15	<0.050	<0.050	0.16	0.11	0.52	0.43
	pH ⁽³⁾	6.96	6.98	6.73	6.93	7.15	7.27	6.36	6.22	6.78	6.97
	Sulfate	--	225	--	182	--	86	353	352	62.8	62.7
	TDS	--	272	--	<10.0	--	176	772	956	505	452
APPENDIX IV	Antimony	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028
	Arsenic	<0.00078	--	<0.00078	--	<0.00078	--	<0.00078	--	<0.00078	--
	Barium	0.041	0.046	0.057	0.56	0.062	0.071	0.045	0.042	0.23	0.21
	Beryllium	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046	<0.000046
	Cadmium	<0.00012	--	<0.00012	--	<0.00012	--	<0.00012	--	<0.00012	<0.00055
	Chromium	<0.00055	0.00065 J	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	0.00096 J	<0.00038
	Cobalt	0.0023 J	0.0041 J	<0.00038	<0.00038	<0.00038	<0.00038	0.0087	0.012	<0.00038	<0.00038
	Fluoride	0.48	0.33	0.16	0.15	<0.050	<0.050	0.16	0.11	0.52	0.43
	Lead	<0.000036	<0.000036	<0.000036	<0.000036	<0.000036	0.000075 J	<0.000036	<0.000036	0.000045 J	<0.000036
	Lithium	0.023 J	0.023 J	0.0071 J	0.0076 J	0.00091 J	0.0011 J	0.0037 J	0.00385 J	0.0037 J	0.0035 J
	Mercury	<0.000078	--	<0.000078	--	<0.000078	--	<0.000078	--	<0.000078	--
	Molybdenum	0.050	0.043	<0.00069	<0.00069	0.00091 J	0.00090 J	0.00099 J	<0.00069	<0.00069	<0.00069
	Combined Radium 226/228	0.357 U	0.553 U	1.96	0.761 U	0.494 U	0.477 U	1.65	1.45	1.82	0.841 U
	Selenium	<0.0016	--	<0.0016	--	<0.0016	--	<0.0016	--	<0.0016	--
Thallium	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--	<0.00014	--	
GEOCHEM	Bicarbonate Alkalinity	--	599	--	376	--	240	--	205	--	451.0
	Iron	--	0.4	--	0.044	--	0.48	--	0.13	--	1.4
	Magnesium	--	19.9	--	23.6	--	9.6	--	24.3	--	22.0
	Manganese	--	1.3	--	0.68	--	0.24	--	2.3	--	0.15
	Potassium	--	7.40	--	1.2	--	0.94	--	3.8	--	0.91
	Sodium	--	9.9	--	35.3	--	5.6	--	22.0	--	28.5
	Sulfide	--	<0.050	--	<0.050	--	<0.050	--	<0.050	--	0.068 J

Table 3
Summary of Analytical Data
Plant Hammond AP-3, Floyd County, Georgia

Well ID:		MW-32	MW-32	MW-32	MW-32	MW-32	MW-41	MW-41	MW-41	MW-46D	H-SCC NBR ⁽⁴⁾	H-SCC E41 ⁽⁴⁾
Sample Date:		1/3/2020	1/22/2020	3/25/2020	8/26/2020	9/28/2020	6/15/2020	8/26/2020	9/28/2020	9/25/2020	7/17/2020	7/17/2020
Parameter ^(1,2)												
APPENDIX III	Boron	1.1	--	1.2	--	1.3	1.2	--	1.2	0.51	--	--
	Calcium	150	--	170	--	173	174	--	173	78.3	--	--
	Chloride	2.4	--	2.2	--	2.5	2.3	--	2.5	3.7	--	--
	Fluoride	0.36	--	0.34	0.33	0.33	0.21	0.24	0.25	0.68	--	--
	pH ⁽³⁾	6.83	6.68	6.86	6.75	6.9	6.88	6.74	7.00	7.56	--	--
	Sulfate	210	--	204	--	245	219	--	154	149	--	--
TDS	645	--	641	--	272	674	--	392	449	--	--	
APPENDIX IV	Antimony	--	--	--	0.00035 J	<0.00028	--	<0.00028	<0.00028	<0.00028	--	--
	Arsenic	--	--	--	<0.00078	--	--	<0.00078	--	--	--	--
	Barium	--	--	0.062	0.055	0.053	0.074	0.066	0.071	0.040	--	--
	Beryllium	--	--	--	<0.000046	<0.000046	--	<0.000046	<0.000046	<0.000046	--	--
	Cadmium	--	--	--	<0.00012	--	--	<0.00012	--	--	--	--
	Chromium	--	--	<0.00039	<0.00055	0.00058 J	<0.00039	<0.00055	<0.00055	0.00075 J	--	--
	Cobalt	--	--	0.0031 J	0.0048 J	0.0047 J	0.0012 J	0.00068 J	0.00066 J	0.00041 J	--	--
	Fluoride	0.36	--	0.34	0.33	0.33	0.21	0.24	0.25	0.68	--	--
	Lead	--	--	<0.000046	<0.000036	<0.000036	<0.000046	<0.000036	<0.000036	0.000048 J	--	--
	Lithium	--	--	0.034	0.031	0.032	0.028 J	0.027 J	0.028 J	0.015 J	--	--
	Mercury	--	--	--	<0.000078	--	--	<0.000078	--	--	--	--
	Molybdenum	0.060	0.059	0.062	0.065	0.062	0.035	0.039	0.036	0.027	<0.010	<0.010
	Combined Radium 226/228	--	--	--	0.281 U	1.01 U	0.948 U	1.53	0.409 U	0.594 U	--	--
Selenium	--	--	--	<0.0016	--	--	<0.0016	--	--	--	--	
Thallium	--	--	--	<0.00014	--	--	<0.00014	--	--	--	--	
GEOCHEM	Bicarbonate Alkalinity	--	--	--	--	315	315	--	313	238	--	--
	Iron	--	--	--	--	0.021 J	0.20	--	0.16	0.42	--	--
	Magnesium	--	--	--	--	20.8	23.4	--	21.4	16.5	--	--
	Manganese	--	--	--	--	1.6	0.88	--	0.85	0.31	--	--
	Potassium	--	--	--	--	7.7	6.5	--	6.7	3.8	--	--
	Sodium	--	--	--	--	8.0	9.6	--	8.1	53.6	--	--
Sulfide	--	--	--	--	<0.050	<0.050	--	<0.050	0.30	--	--	

Table 4
Evaluation of Groundwater Corrective Measures
Plant Hammond AP-3, Floyd County, Georgia

Corrective Measure	Regulatory Citation for Criteria:		40 CFR 257.96(C)(1)
	Description	Performance	
Geochemical Approaches (In-Situ Injection)	Use of an injection well network, or other means of introducing reagents or air into the subsurface, to provide suitable reagents for either anaerobic or aerobic attenuation of molybdenum (Mo). Under anaerobic conditions, Mo may be attenuated within sparingly soluble sulfide minerals. Under aerobic conditions, soluble iron or manganese and oxygen (either via air sparging or through a chemical oxidant) would be injected to promote the formation of iron or manganese (oxy-) hydroxides for subsequent sorption of Mo onto these mineral phases. If sufficient iron is present in groundwater, the use of air sparging alone may be considered to precipitate iron (oxy-) hydroxides for sorption. In-situ chemical oxidation (ISCO) or in-situ chemical reduction (ISCR) can be used to chemically alter the redox environment in the subsurface to affect the mobility of certain inorganic compounds, including Mo.	The effective immobilization of Mo under promoted anaerobic condition (involving the injection of an electron donor together with iron or manganese and sulfur) requires careful study and testing. While aerobic approaches are somewhat less complex, additional aquifer characterization is needed to further evaluate these options. It is currently not well understood whether Mo can be efficiently attenuated using in-situ redox manipulations due to slow reaction kinetics. Mo attenuation under both aerobic and anaerobic conditions needs to be further evaluated but is expected to occur. Mo is more strongly sorbed to aluminum oxides than other metal oxides, and it is generally less sorptive and more mobile compared to other inorganics [e.g., arsenic (As)].	Reliability dependent on permeability of the subsurface and the amount and distribution of secondary iron or manganese (oxy-) hydroxides (for aerobic approach), or electron donors and soluble iron or manganese and sulfur that can be consistently distributed (for anaerobic approach). Reliable technology if injected materials can be distributed throughout the impacted aquifer. Bench- and/or pilot-scale treatability testing programs are needed to understand the biogeochemical processes that would effectively reduce migration of Mo in groundwater.
Hydraulic Containment (Pump and Treat)	Hydraulic containment refers to the use of groundwater extraction to induce a hydraulic gradient for hydraulic capture or control the migration of impacted groundwater. This approach uses extraction wells or trenches to capture groundwater, which may subsequently require above-ground treatment and permitted discharge to a receiving water feature, reinjection into the groundwater, or reuse (e.g., land application, CCR conditioning, etc.). It is applicable to a variable mix of inorganic constituents, including dissolved Mo.	Hydraulic containment is effective, but it is unclear whether full groundwater remediation can be achieved without further understanding attenuation mechanisms at the Site. At AP-3, implementation of the corrective measure is contingent on completing additional assessment activities (i.e. high-resolution site characterization, additional pump tests, flow modeling, and capture zone analysis). This is needed to refine the constituent distribution in the subsurface to target specific zones for pumping for improved mass recovery efficiency/ effectiveness and to further evaluate the potential remedy performance. Proximity of the extraction system to Cabin Creek needs to be considered to avoid capturing surface water.	Generally reliable for hydraulic containment, but uncertainty exists whether groundwater remediation goals can be achieved within a reasonable time frame without further understanding attenuation mechanisms.
Monitored Natural Attenuation (MNA)	MNA relies on natural attenuation processes to achieve site-specific remediation objectives within a reasonable time frame relative to more active methods. Under certain conditions (e.g., through sorption, mineral precipitation or oxidation-reduction reactions), MNA effectively reduces the dissolved concentrations of inorganic constituents in groundwater. Attenuation mechanisms for inorganic constituents at CCR sites, including Mo, are either physical (e.g. dilution, dispersion, flushing, and related processes) or chemical (sorption or oxidation reduction reactions). Chemical attenuation processes include precipitation, and sorption reactions such as adsorption on the surfaces of soil minerals, absorption into the matrix of soil minerals, or partitioning into organic matter. Further, oxidation-reduction (redox) reactions, via abiotic or biotic processes, can transform the valence states of some inorganic constituents to less soluble and thus less mobile forms. For Mo, the main attenuation process includes sorption to iron and manganese oxides and formation of insoluble minerals under sulfate-reducing conditions.	Physical and chemical MNA mechanisms for Mo, including dilution, dispersion, sorption, and oxidation reduction reactions can be effective at achieving groundwater protection standards (GWPS) within a reasonable time frame.	Reliable as long as the aquifer conditions that result in Mo attenuation remain favorable and/or are being enhanced and sufficient attenuation capacity is present. MNA may be used as a stand-alone corrective measure for groundwater impacted by dissolved Mo, but is frequently used in combination with a second technology.
Permeable Reactive Barrier	Permeable reactive barrier (PRB) technology typically involves the installation of a permeable subsurface wall constructed with reactive media for the removal of constituents as groundwater passes through. Either ZVI-Carbon matrix or solid carbon (bio-barrier) are currently proposed for the removal of Mo. The carbon could be composed of peat moss, mulch or another carbon source. Exact placement of the PRB is determined by site-specific characterization. PRB walls are typically keyed into the bedrock. While the shallow groundwater in the residuum and fractured bedrock is connected to the groundwater in more competent bedrock, the higher permeability/conductivity of the PRB is not expected to impede groundwater flow. PRBs can also be constructed as "funnel and gate" systems, where a barrier wall directs groundwater to a smaller "treatment gate" filled with reactive media.	PRBs have been tested to address Mo in groundwater, but additional testing is required to select the appropriate reactive media. The approach is expected to achieve GWPS for Mo as impacted groundwater passes through the reactive barrier. Mo redox kinetics may be slow and hence a thicker wall might be needed relative to the treatment of other inorganics (e.g., arsenic).	Reliable groundwater corrective measure technology for select inorganics, but loss of reactivity over time may require re-installation depending on the duration of the remedy. Additional data collection, including conducting a bench and/or pilot study, is needed to better characterize current attenuation mechanisms and/or select the appropriate reactive media mix for a PRB wall.
Subsurface Vertical Barrier Walls	This approach involves placing a barrier to groundwater flow in the subsurface, frequently around a source area, to prevent future migration of dissolved constituents in groundwater from beneath the source to downgradient areas. In general, barrier walls are designed to provide containment; localized treatment achieved through the sorption or chemical precipitation reactions from construction of the walls are incidental to the design objective. Barrier walls can also be used in downgradient applications to limit discharge to a surface water feature or to reduce aquifer recharge from an adjacent surface water feature when groundwater extraction wells are placed near one. A variety of barrier materials can be used, including cement and/or bentonite slurries, geomembrane composite materials, or driven materials such as steel or vinyl sheet pile. Groundwater extraction from upgradient of the barrier is required to avoid groundwater mounding behind the barrier.	Barrier walls are a proven technology for seepage control and/or groundwater cutoff at impoundments. Slurry walls are limited by the depth of installation; sheet piling and trenching are typically limited to depths of approximately 50 feet belowground surface (ft bgs); specialty drilling/installation techniques can achieve depths greater up to approximately 90 ft bgs. However, site-specific geologic and technology-specific considerations may limit this depth to shallower installations. Within the context of AP-3, a barrier wall might be used in conjunction with a "funnel and gate" system for a PRB rather than a stand-alone technology. As such, groundwater with Mo above GWPS could either be directed to "treatment gates" for passive treatment (in a PRB) or migration of impacted groundwater could be minimized via barrier wall installation. Additional subsurface investigations, aquifer testing, and compatibility testing with site-specific groundwater will be needed.	Generally reliable as a barrier to groundwater flow; however, treatment of downgradient groundwater is incidental and not the primary objective.

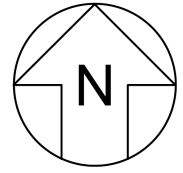
Table 4
Evaluation of Groundwater Corrective Measures
Plant Hammond AP-3, Floyd County, Georgia

Corrective Measure	40 CFR 257.96(C)(1)	40 CFR 257.96(C)(1)	40 CFR 257.96(C)(2)
	Ease of Implementation	Potential Impacts	Time Requirement to Begin/Complete
Geochemical Approaches (In-Situ Injection)	Moderate. Installation of injection well network or other injection infrastructure would be required. Alternative installation approaches may be considered, such as along the downgradient edge of impacted groundwater, which would function similar to a PRB application. Potential for clogging of aquifer matrix and/or injection well infrastructure. Chemical distribution during injections (i.e., radius of influence) needs to be evaluated.	Minimal impacts are expected if remedy works as designed, based on a thorough pre-design investigation, geochemical modeling, and bench/pilot study results. Redox-altering processes have the potential to mobilize naturally-occurring constituents as an unintended consequence if not properly studied and implemented.	Installation of the injection network can be accomplished relatively quickly (1 to 2 months). However, a thorough pre-design investigation, geochemical modeling, and/or bench- and/or pilot-testing will be required to obtain design parameters prior to design and construction of the corrective measure, which may take up to 24 months. Once installed, the time required to achieve GWPS within the treatment area may be relatively quick but depends on the attenuation process kinetics of each targeted constituent. The time for complete distribution of the injected materials throughout the treatment area is also variable.
Hydraulic Containment (Pump and Treat)	Moderate. Proven approach, and supplemental installation of extraction wells/trenches is fairly straightforward. The extracted groundwater may potentially require an above-ground treatment system. A variety of sorption and precipitation approaches exist for ex-situ treatment of Mo. Operation and maintenance (O&M) requirements are expected to include upkeep of infrastructure components (pumps, pipes, tanks, instrumentation and controls, above-ground treatment system) and handling of treatment residuals.	Moderate. The main potential impacts are related to the presence and operation of an on-site above-ground water treatment facility and related infrastructure to convey and treat extracted groundwater. Pumping activity may unintentionally alter the geochemistry within the hydraulic capture zone. Proximity of the extraction system to Cabin Creek needs to be considered to avoid capturing surface water.	Installation of extraction wells and/or trenches can be accomplished relatively quickly (1 to 2 months). However, additional aquifer testing, system design and installation, and permit approval may be required, which may take up to 24 months. The initiation of the approach would be contingent on the start-up of the wastewater treatment infrastructure. Hydraulic containment can be achieved relatively quickly after startup of the extraction system, but uncertainty exists with respect to the time to achieve GWPS without additional data collection to better understand attenuation mechanisms for Mo.
Monitored Natural Attenuation (MNA)	Reasonably implementable with respect to infrastructure, but moderate to complex with respect to documentation. Proven approach, but additional data are needed to show that the existing attenuation capacity is sufficient to meet site objectives within a reasonable timeframe. A monitoring well network already exists to implement future groundwater monitoring efforts.	None. MNA relies on the natural processes active in the aquifer matrix to reduce constituent concentrations without disturbing the surface or the subsurface.	The infrastructure to initiate MNA is already in place. Demonstrating attenuation mechanisms and capacity can be time-consuming and can take up to 24 months.
Permeable Reactive Barrier	Moderate to difficult. Trenching would be required to install a mix of reactive materials in the subsurface. Continuous trenching may be the most feasible construction method. Installation methods and materials are readily available. Once installed, treatment will be passive and O&M requirements are minimal if replacement of the PRB is not necessary. Depth to competent bedrock varies on a small-scale (feet to tens of feet) spatially depending on the weathering characteristics of the fractured bedrock, limiting the feasibility of constructing a PRB along the entire length and depth of the affected areas	Minimal impacts are expected following the construction of the remedy. However, ZVI has the potential to create anaerobic conditions downgradient of the PRB wall that may mobilize redox-sensitive naturally-occurring constituents. These conditions need to be carefully monitored. Short-term impacts during the construction of the remedy can be mitigated through appropriate planning and health and safety measures.	Installation of a PRB can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, bench- and/or pilot-testing would be required to obtain design parameters prior to design and construction of the remedy, which may take up to 24 months. Once installed, the time to achieve GWPS downgradient of the PRB is anticipated to be relatively quick.
Subsurface Vertical Barrier Walls	Moderate to difficult. Trenching will be required to fill in the various slurry mixes; alternatively, sheet pile installations can be accomplished without excavation of trenches. The application of barrier walls is limited by the depth of installation, which similar to PRBs, should be keyed into a low permeability layer such as a thick clay layer or bedrock. Installation methods and materials are readily available. Once installed, above-ground infrastructure to pump and treat groundwater will be required. O&M requirements are expected to include upkeep of infrastructure components (pumps, pipes, tanks, instrumentation and controls, above-ground treatment system) and handling of treatment residuals. Depth to competent bedrock varies on a small-scale (feet to tens of feet) spatially depending on the weathering characteristics of the fractured bedrock, limiting the feasibility of constructing a barrier wall along the entire length and depth of the affected areas	Minimal impacts are expected following the construction of the remedy. Short-term impacts during the construction of the remedy can be mitigated through appropriate planning and health and safety measures. Changes to groundwater flow patterns due to installation of the barrier wall are expected, which can affect other aspects of groundwater corrective action. Pumping activity may unintentionally alter the geochemistry within the hydraulic capture zone that may result in the mobilization of other constituents that may require treatment.	Installation of a barrier wall can be accomplished relatively quickly (6 to 12 months), depending on the final location and configuration. However, some design phase and additional aquifer and compatibility testing will be required, which may take up to 24 months. Once installed, preventing migration of constituents dissolved in groundwater is anticipated to be relatively quick. Since this approach does not treat the downgradient area of impacted groundwater but prevents migration from a source area, it will likely have to be maintained long-term and coupled with other approaches.

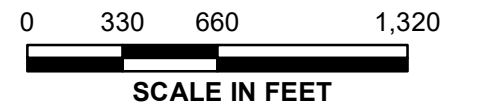
Table 4
 Evaluation of Groundwater Corrective Measures
 Plant Hammond AP-3, Floyd County, Georgia

40 CFR 257.96(C)(3)			
Corrective Measure	Institutional Requirements	Other Env or Public Health Requirements	Relative Costs
Geochemical Approaches (In-Situ Injection)	Deed restrictions may be necessary until in-situ treatment has achieved GWPS. A new UIC permit (for in-situ injections) would be required to implement this corrective measure. No other institutional requirements are expected at this time.	None expected at this point. Based on Mo results for surface water collected to date, no Mo impacts to surface water have been detected. Potential for mobilization of redox-sensitive constituents exists during implementation of an anaerobic attenuation approach. Following installation, the remedy is passive.	Medium (depending on expanse of injection network required and injectate volume required per derived design parameters)
Hydraulic Containment (Pump and Treat)	Depending on the effluent management strategy, modifications to the existing NPDES permit may be required, or obtaining a new underground injection control (UIC) permit may be needed if groundwater reinjection is chosen. In addition, deed restrictions may be required as long as groundwater conditions are above regulatory standards for unrestricted use.	Based on Mo results for surface water collected to date, no Mo impacts to surface water have been detected. Above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.	Medium to high (depending on remedy duration, complexity of above-ground treatment system, and volume of water processed)
Monitored Natural Attenuation (MNA)	MNA may require the implementation of institutional controls, such as deed restrictions, to preclude potential exposure to groundwater within the footprint of impacted groundwater until GWPS are achieved.	Little to no physical disruption to remediation areas and no adverse construction-related impacts are expected on the surrounding community. Based on Mo results for surface water collected to date, no Mo impacts to surface water have been detected.	Low to medium
Permeable Reactive Barrier	Deed restrictions may be necessary for groundwater areas upgradient of the PRB (if not installed along the waste boundary). No other institutional requirements are expected at this time.	None expected at this point. Based on Mo results for surface water collected to date, no Mo impacts to surface water have been detected. Following installation, the remedy is passive. However, certain treatment media (such as ZVI) have the potential to mobilize naturally-occurring constituents downgradient of the PRB.	Medium to high (for installation) - minimal O&M requirements if replacement is not necessary
Subsurface Vertical Barrier Walls	Deed restrictions may be necessary for groundwater areas downgradient of the barrier wall until remedial goals are met. No other institutional requirements are expected at this time.	Based on Mo results for surface water collected to date, no Mo impacts to surface water have been detected. Due to the need for groundwater extraction associated with barrier walls, above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.	Medium to high (depending on length and depth of wall, remedy duration and complexity of above-ground treatment system)

FIGURES



Note:
1. Aerial photograph source: Google Earth Pro, August 2019.



SITE LOCATION MAP

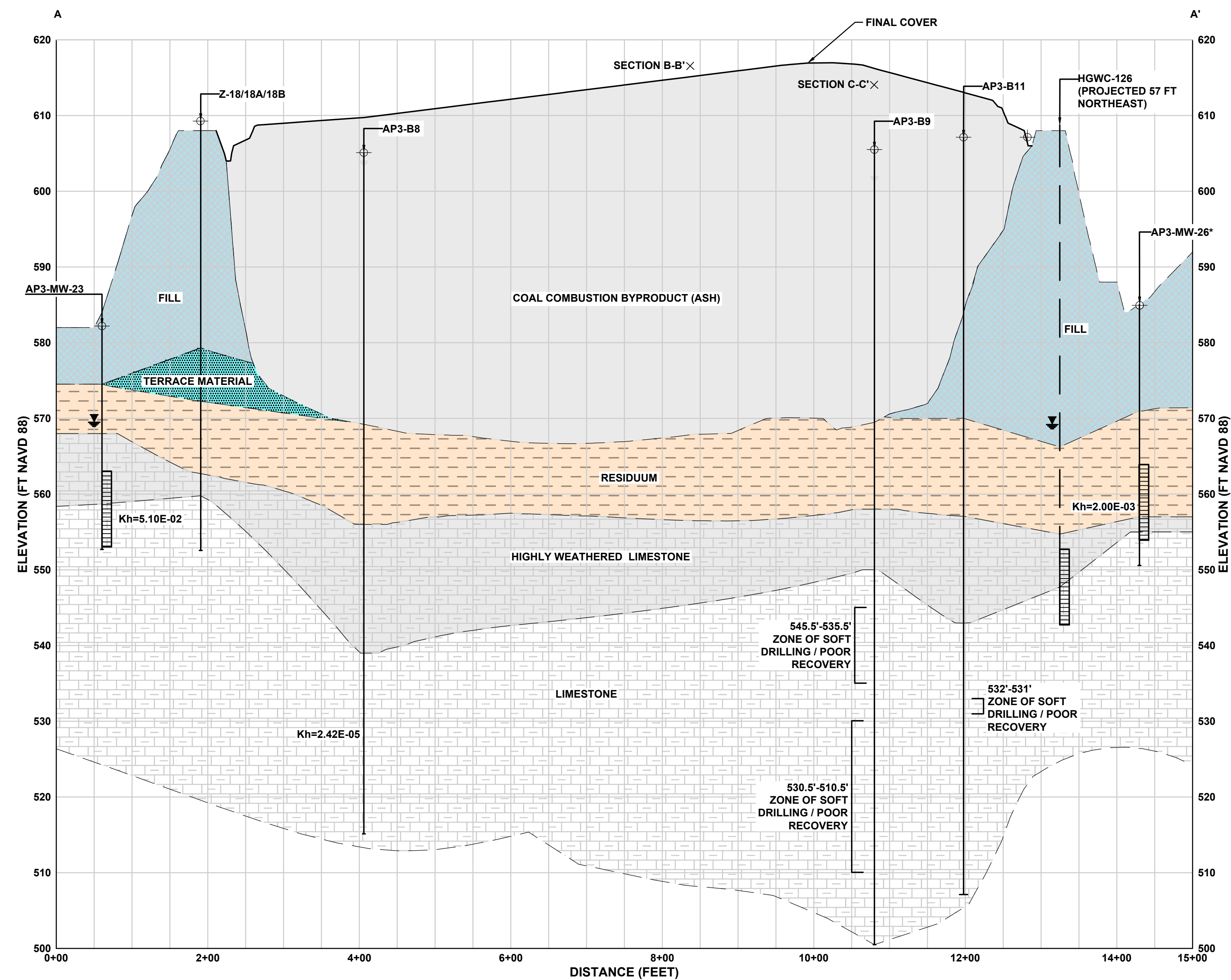
GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

Prepared By:  Geosyntec
consultants

KENNESAW, GA NOVEMBER 2020

**FIGURE
1**



1 SECTION A-A'



LEGEND

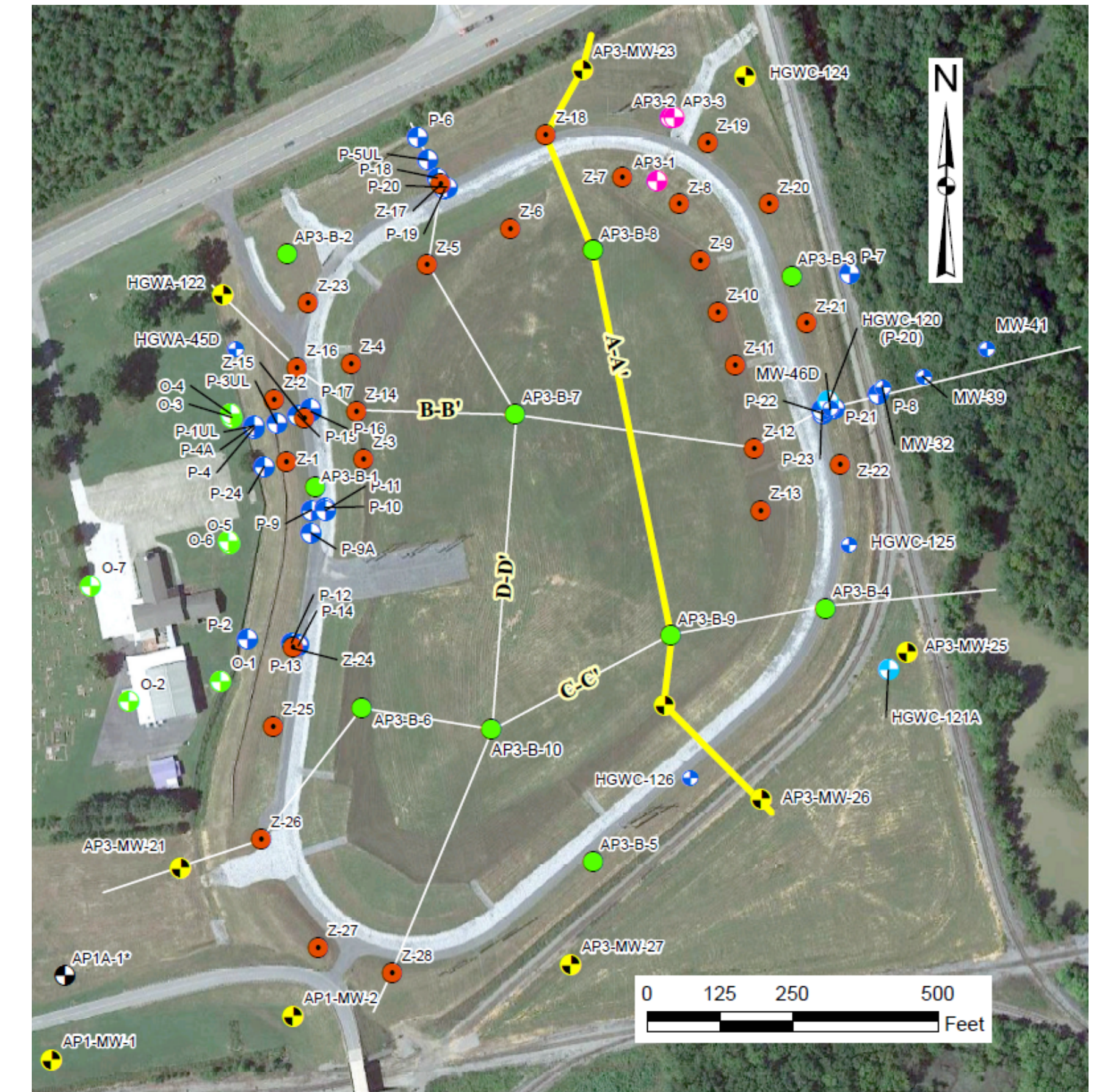
- SOIL BORING (DASHED WHERE PROJECTED)
- GROUNDWATER ELEVATION (SEPTEMBER 14, 2020)
- SCREEN INTERVAL
- FINAL COVER

SOIL LAYER DESCRIPTIONS

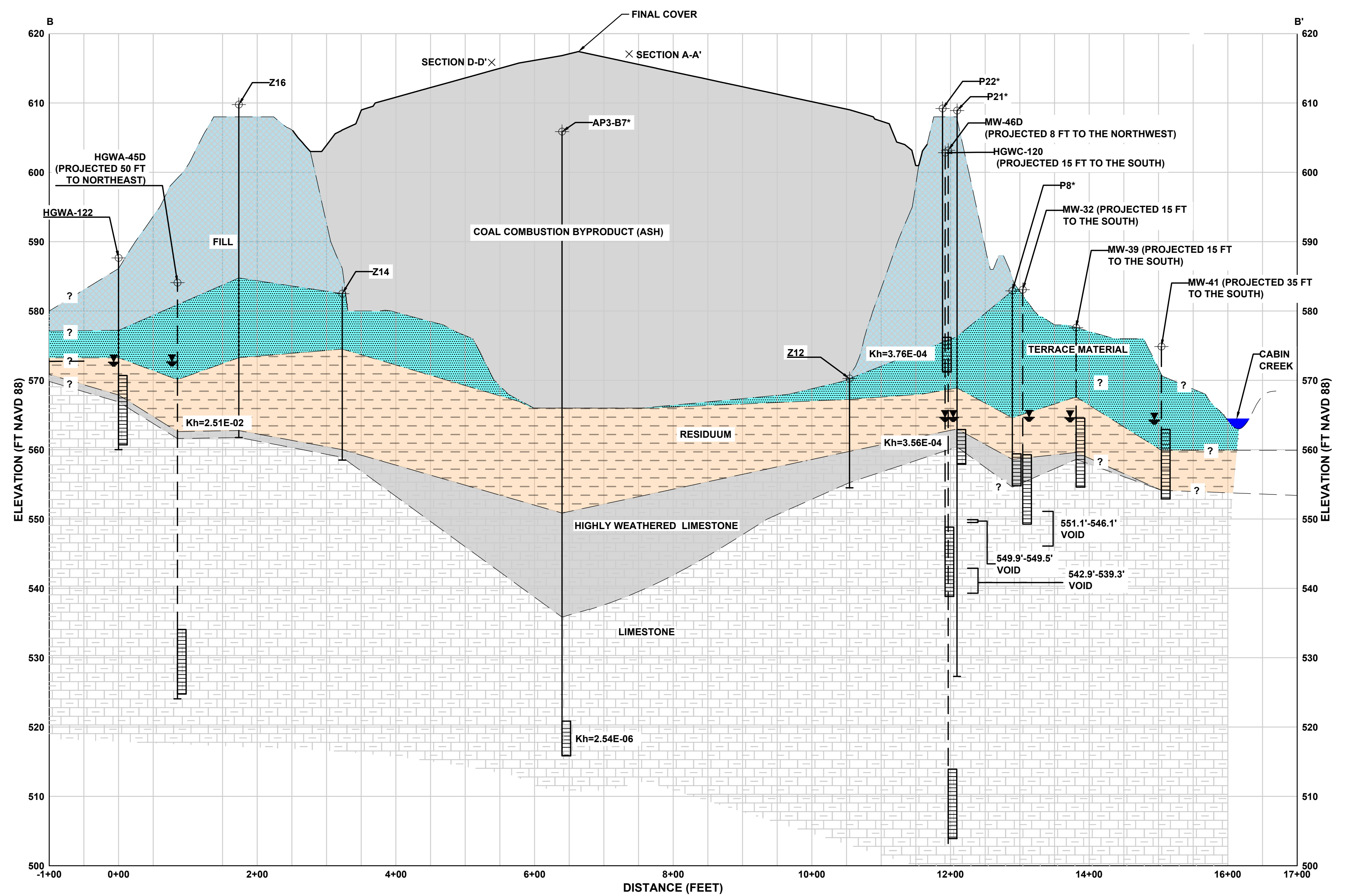
- COAL COMBUSTION BYPRODUCT (ASH)
- FILL (LEAN CLAY OR GRAVELLY LEAN CLAY WITH SAND)
- TERRACE MATERIAL (CLAYEY SAND, SANDY CLAY, GRAVELLY SILTY CLAY)
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- LIMESTONE

NOTES:

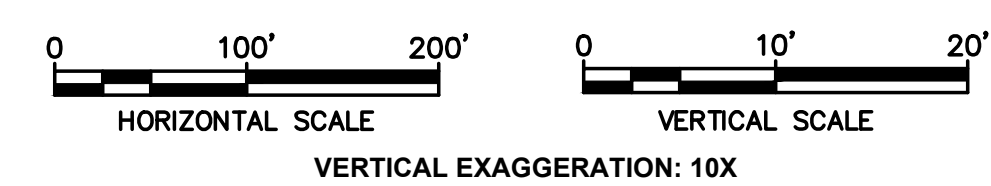
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4. HORIZONTAL HYDRAULIC CONDUCTIVITY (Kh) IN CM/SEC. VERTICAL HYDRAULIC CONDUCTIVITY (Kv) IN CM/SEC.
5. EXISTING TOPOGRAPHIC MAP USED IN THE GEOLOGIC SECTION WAS BASED ON DRAWING NUMBER ES184451 PROVIDED BY SOUTHERN COMPANY SERVICES.
6. THE FINAL COVER CONSISTS OF A 60 MIL HDPE (HIGH DENSITY POLYETHYLENE) LINER, GEOCOMPOSITE DRAINAGE MEDIA, A MINIMUM 18-INCH PROTECTIVE SOIL COVER, AND A 6-INCH VEGETATIVE LAYER TO ESTABLISH VEGETATION.
7. *: WATER LEVEL ELEVATION IS NOT KNOWN DUE TO WELL BEING ABANDONED PRIOR TO SEPTEMBER 2020.



KEY MAP



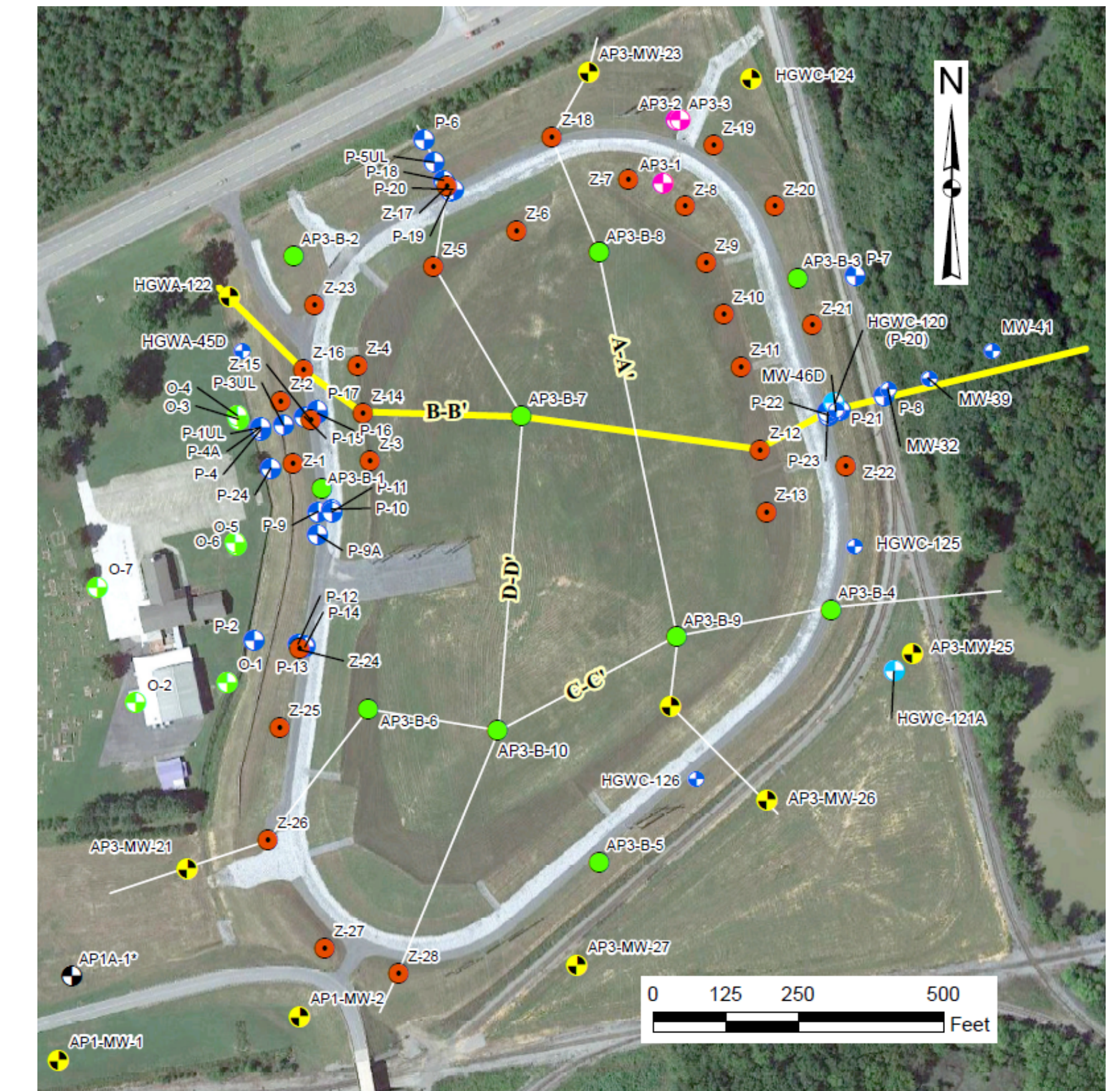
1 SECTION B-B'



- LEGEND**
- SOIL BORING (DASHED WHERE PROJECTED)
 - GROUNDWATER ELEVATION (SEPTEMBER 14, 2020)
 - SCREEN INTERVAL
 - FINAL COVER

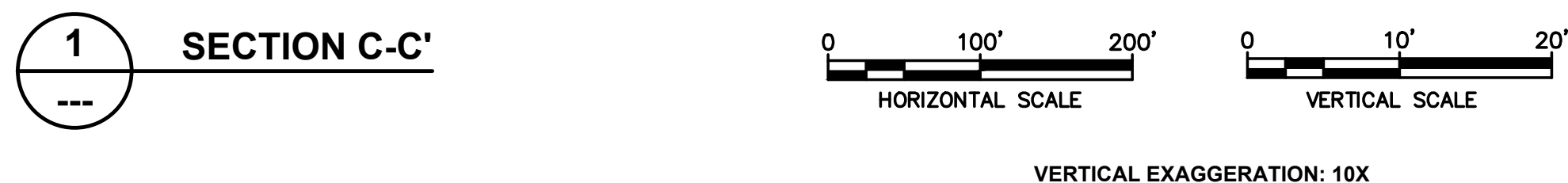
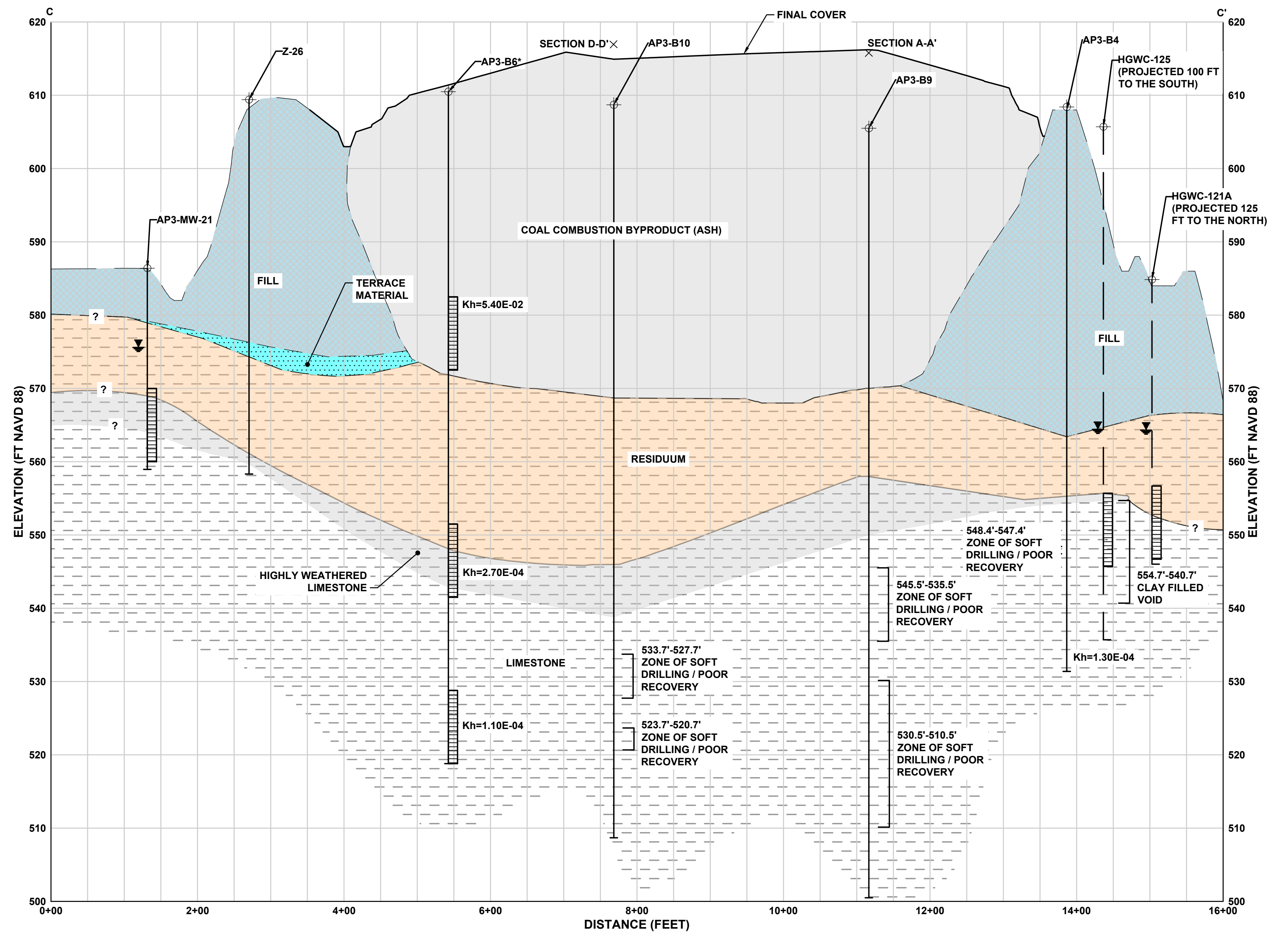
- SOIL LAYER DESCRIPTIONS**
- COAL COMBUSTION BYPRODUCT (ASH)
 - FILL (LEAN CLAY OR GRAVELLY LEAN CLAY WITH SAND)
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 6. THE FINAL COVER CONSISTS OF A 60 MIL HDPE (HIGH DENSITY POLYETHYLENE) LINER, GEOCOMPOSITE DRAINAGE MEDIA, A MINIMUM 18-INCH PROTECTIVE SOIL COVER, AND A 6-INCH VEGETATIVE LAYER TO ESTABLISH VEGETATION. WATER LEVEL ELEVATION IS NOT KNOWN DUE TO WELL BEING ABANDONED PRIOR TO SEPTEMBER 2020.
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KEY MAP

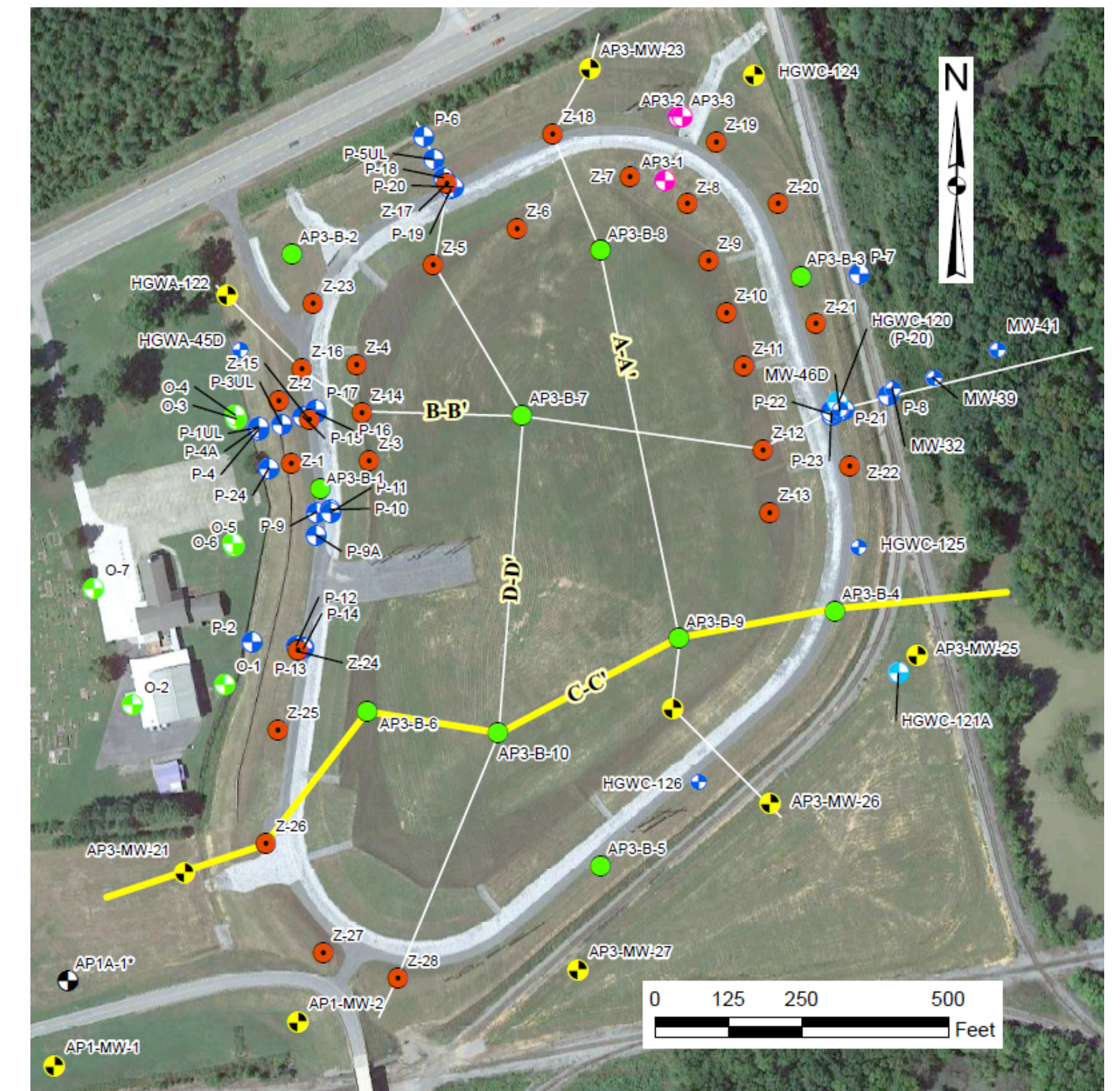
L:\CADD\GEORGIA POWER\PLANT HAMMOND_086242\GROSS_SECTION\2020-09-24\GROSS_SECTION_B-B'



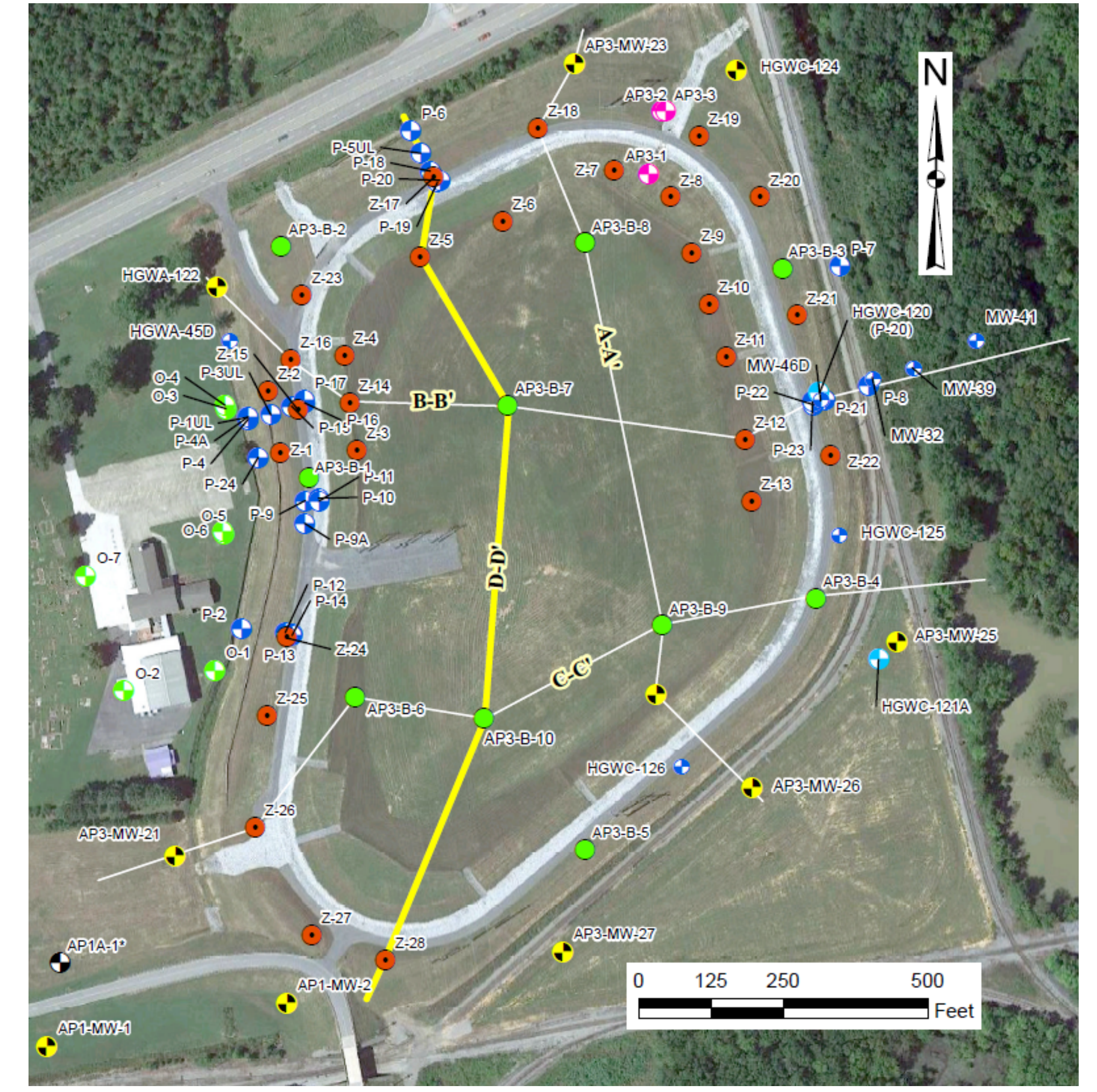
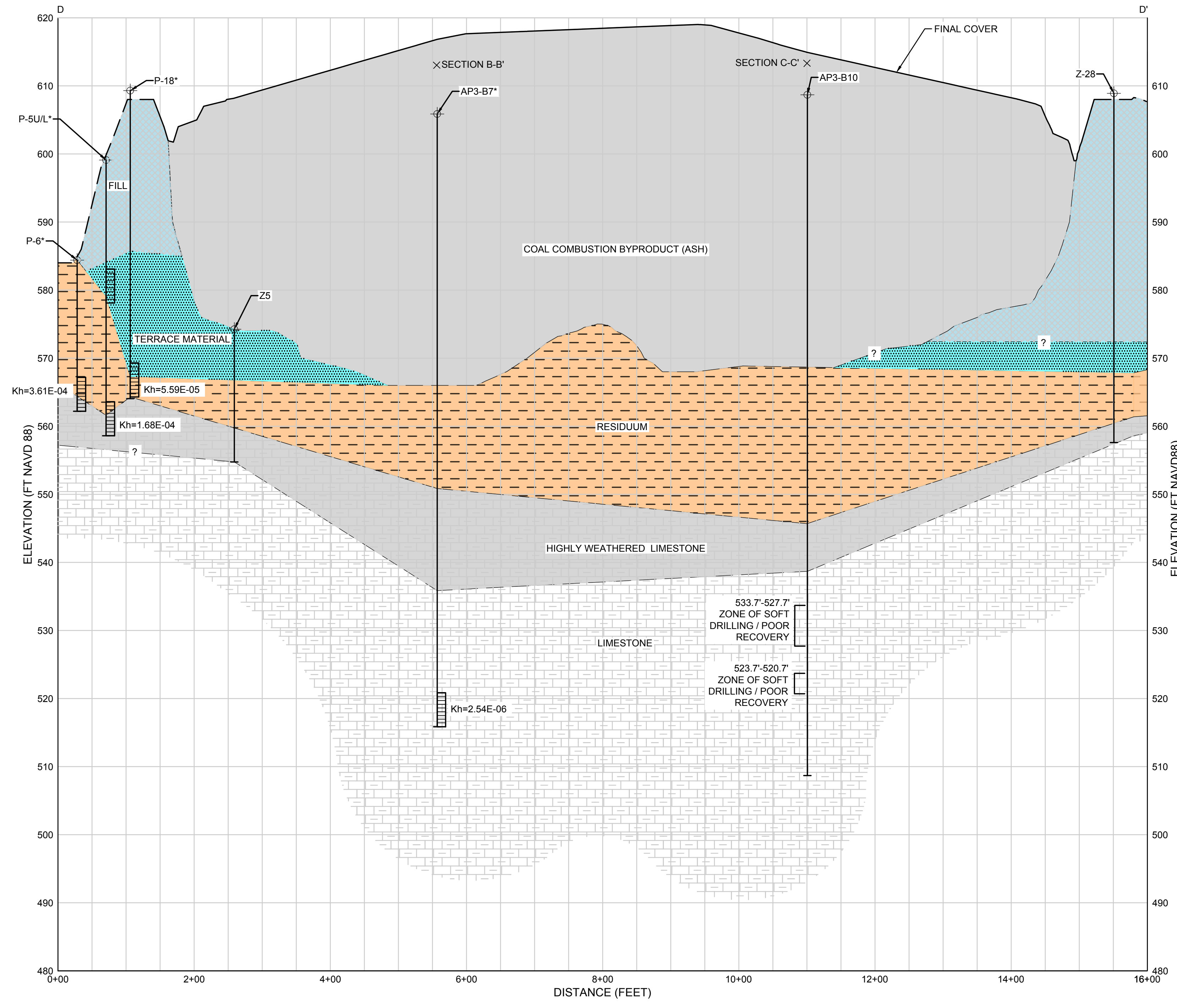
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 3. BORING LOGS AND HYDROGEOLOGIC INFORMATION FOR SOIL BORINGS Z1 THROUGH Z28 AND P1 THROUGH P24 (1976 & 1977), AP3-1, AP3-2, AND AP3-3 (2010), MONITORING WELLS AROUND ASH PONDS AP1 AND AP3 (2014), P20 AND P21 (2016) WERE PROVIDED BY SOUTHERN COMPANY SERVICES. SOIL BORINGS/PIEZOMETERS AP3-B1 THROUGH AP3-B11 WERE INSTALLED BY GEOSYNTEC CONSULTANTS IN FEBRUARY 2017. MONITORING WELL HGWC-125 WAS INSTALLED BY GEOSYNTEC CONSULTANTS IN MAY 2020.
 4. HORIZONTAL HYDRAULIC CONDUCTIVITY (Kh) IN CM/SEC. VERTICAL HYDRAULIC CONDUCTIVITY (Kv) IN CM/SEC.
 5. EXISTING TOPOGRAPHIC MAP USED IN THE GEOLOGIC SECTION WAS BASED ON DRAWING NUMBER ES1844S1 PROVIDED BY SOUTHERN COMPANY SERVICES.
 6. THE FINAL COVER CONSISTS OF A 60 MIL HDPE (HIGH DENSITY POLYETHYLENE) LINER, GEOCOMPOSITE DRAINAGE MEDIA, A MINIMUM 18-INCH PROTECTIVE SOIL COVER, AND A 6-INCH VEGETATIVE LAYER TO ESTABLISH VEGETATION.
 7. *: WATER LEVEL ELEVATION IS NOT KNOWN DUE TO WELL BEING ABANDONED PRIOR TO SEPTEMBER 2020.



KEY MAP

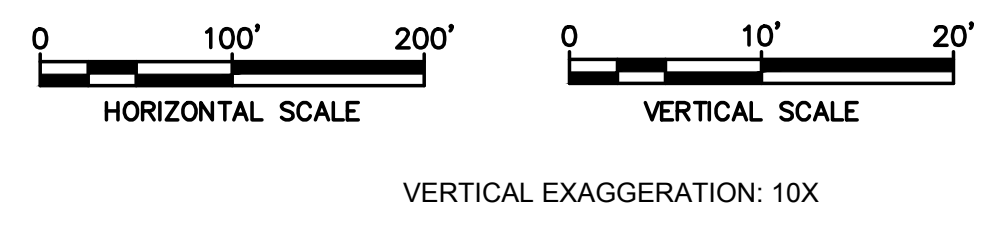


KEY MAP

- LEGEND**
- SOIL BORING (DASHED WHERE PROJECTED)
 - SCREEN INTERVAL
 - FINAL COVER

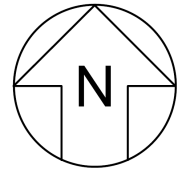
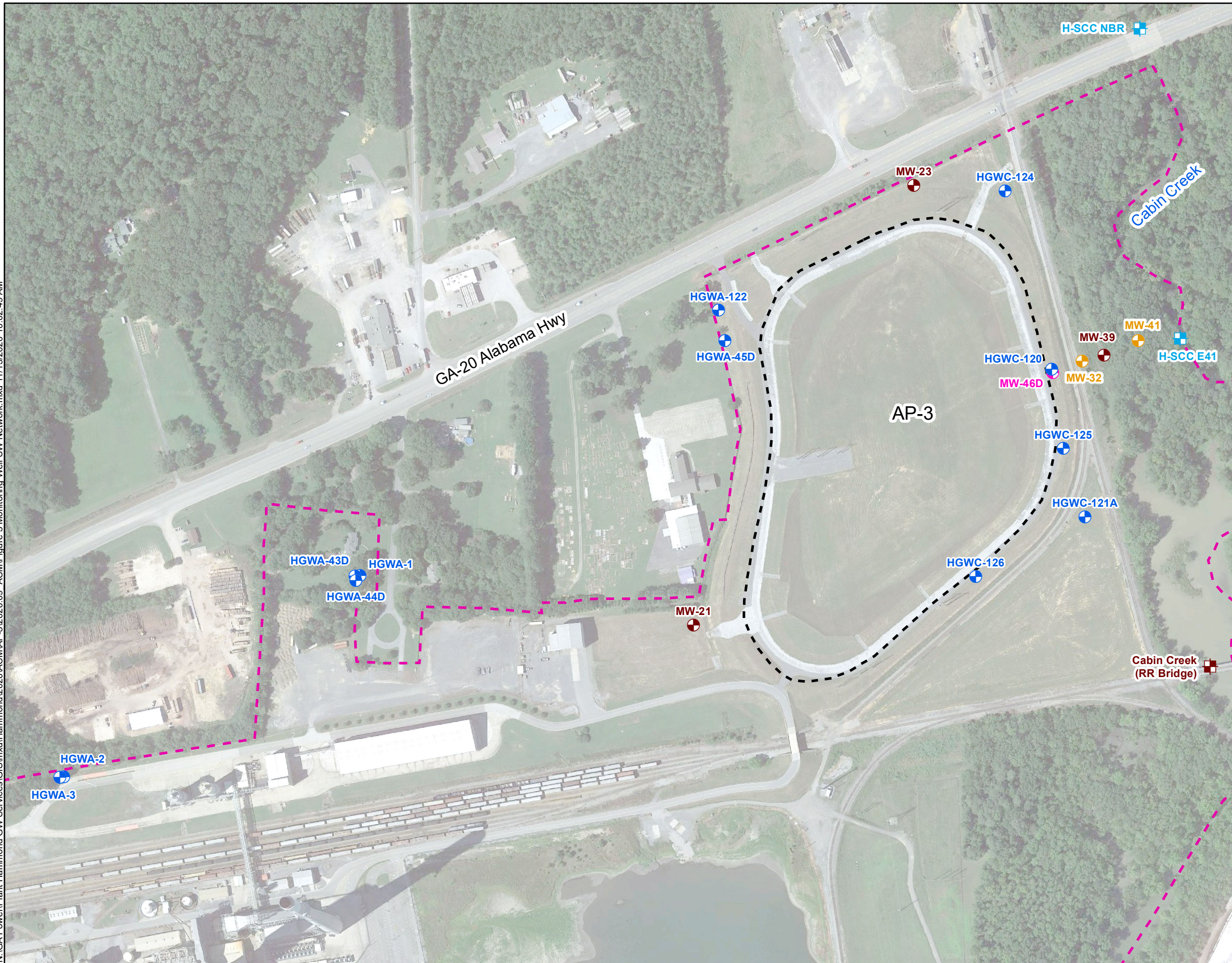
- SOIL LAYER DESCRIPTIONS**
- COAL COMBUSTION BYPRODUCT (ASH)
 - FILL (LEAN CLAY OR GRAVELLY LEAN CLAY WITH SAND)
 - TERRACE MATERIAL (CLAYEY SAND, SANDY CLAY, GRAVELLY SILTY CLAY)
 - RESIDIUM (LEAN CLAY, LEAN CLAY WITH GRAVEL, FAT CLAY OR SANDY FAT CLAY)
 - HIGHLY WEATHERED LIMESTONE (CLAYEY GRAVEL, SANDY LEAN CLAY WITH GRAVEL)
 - LIMESTONE

1 SECTION D-D'



- NOTES:**
1. SUBSURFACE LITHOLOGIC ELEVATIONS BETWEEN BORINGS ARE INTERPRETED BASED ON AVAILABLE INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE.
 2. ELEVATIONS OF LITHOLOGIC UNITS WERE ESTIMATED BASED ON GROUND SURFACE ELEVATIONS OF SOIL BORINGS.
 3. BORING LOGS AND HYDROGEOLOGIC INFORMATION FOR SOIL BORINGS Z1 THROUGH Z28 AND P1 THROUGH P24 (1976 & 1977), AP3-1, AP3-2, AND AP3-3 (2010), MONITORING WELLS AROUND ASH PONDS AP1 AND AP3 (2014), P20 AND P21 (2016) WERE PROVIDED BY SOUTHERN COMPANY SERVICES. SOIL BORINGS/PIEZOMETERS AP3-B1 THROUGH AP3-B11 WERE INSTALLED BY GEOSYNTEC CONSULTANTS IN FEBRUARY 2017.
 4. HORIZONTAL HYDRAULIC CONDUCTIVITY (Kh) IN CM/SEC. VERTICAL HYDRAULIC CONDUCTIVITY (Kv) IN CM/SEC.
 5. EXISTING TOPOGRAPHIC MAP USED IN THE GEOLOGIC SECTION WAS BASED ON DRAWING NUMBER ES1844S1 PROVIDED BY SOUTHERN COMPANY SERVICES.
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 7. *: WATER LEVEL ELEVATION IS NOT KNOWN DUE TO WELL BEING ABANDONED PRIOR TO SEPTEMBER 2020.

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\ACMAP-3\2020.09_ACM\Figure 3 Monitoring Well SW Network.mxd 11/13/2020 10:02:49 AM



LEGEND

- Compliance Monitoring Well
- Horizontal Delineation Well
- Vertical Delineation Well
- Piezometer
- Surface Water Sample Point
- Surface Water Level Gauge Point
- Approximate AP-3 Boundary
- Plant Hammond Property Boundary

Notes:
1. Aerial photograph source: Google Earth Pro, August 2019.



**MONITORING WELL NETWORK
AND SAMPLING LOCATION MAP**

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

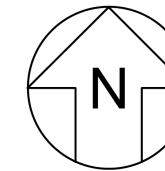
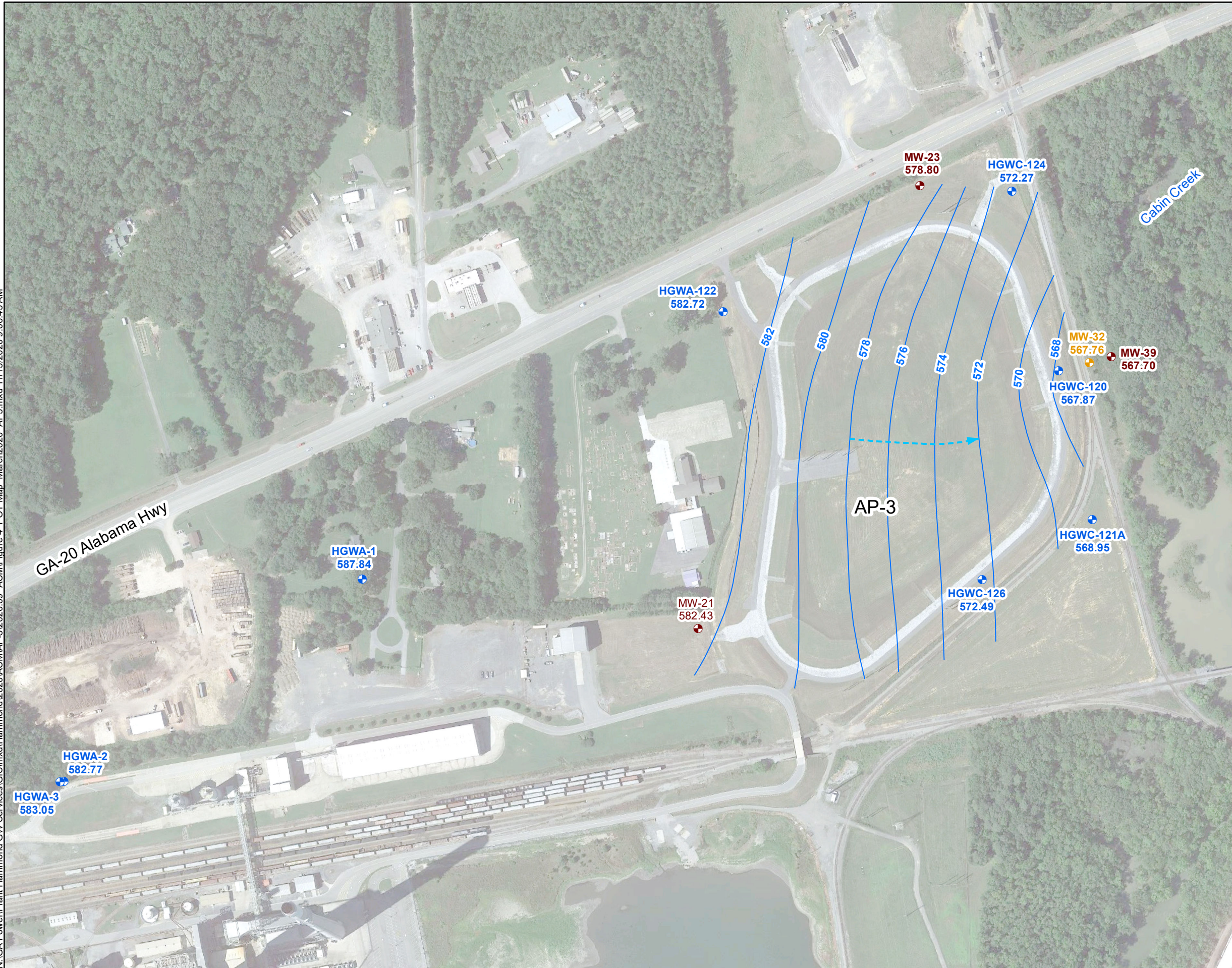
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

**FIGURE
3**

KENNESAW, GA NOVEMBER 2020

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\ACMAP-3\2020.09_ACM\Figure 4 POT Map_March2020_AP3.mxd 11/13/2020 9:06:43 AM



- LEGEND**
- + Compliance Monitoring Well
 - + Horizontal Delineation Well
 - + Piezometer
 - Groundwater Elevation Iso-Contour
 - Approximate Groundwater Flow Direction

- Notes:**
1. Water level elevation recorded on March 23, 2020. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
 2. The map shows only the wells/piezometers installed at the time of the gauging event. Surface water sampling and gauging points along Cabin Creek were not established until after the March 2020 event.
 3. Aerial photograph source: Google Earth Pro, August 2019.



**POTENTIOMETRIC SURFACE CONTOUR
MAP - MARCH 2020**

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

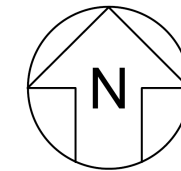
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA NOVEMBER 2020

**FIGURE
4**

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\ACMAP-3\2020.09_ACM\Figure 5 AP-3 Aquifer Potentiometric Surface - September 2020.mxd 11/13/2020 9:10:32 AM



- LEGEND**
- ⊕ Compliance Monitoring Well
 - ⊕ Horizontal Delineation Well
 - ⊕ Vertical Delineation Well
 - ⊕ Piezometer
 - ⊕ Surface Water Sample Point
 - ⊕ Surface Water Level Gauge Point
 - Groundwater Elevation Iso-Contour
 - ➔ Approximate Groundwater Flow Direction

- Notes:**
1. Water level elevation recorded on September 14, 2020. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
 2. Water elevation in parentheses were not used in development of groundwater contours due to wells being screened at a different elevation in the formation/aquifer.
 3. Aerial photograph source: Google Earth Pro, August 2019.



**POTENTIOMETRIC SURFACE
CONTOUR MAP – SEPTEMBER 2020**

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

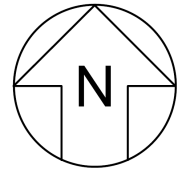
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA NOVEMBER 2020

**FIGURE
5**

N:\GA Power\Plant Hammond\GW Services\GIS\mxd\Hammond\2020\ACMAP-3\2020.09_ACM\Figure 6 AP3 Plume Map_Mo_Mar2020_data.mxd 11/13/2020 9:56:49 AM



LEGEND

- Compliance Monitoring Well
- Horizontal Delineation Well
- Piezometer
- State GWPS Molybdenum Iso-Concentration Contour (mg/L)
- Groundwater Elevation Iso-Contour
- Approximate Groundwater Flow Direction
- Approximate AP-3 Boundary
- Plant Hammond Property Boundary

Notes:

1. Concentration data from groundwater samples collected during the March 2020 semiannual monitoring event. Concentrations are reported in mg/L.
2. Water level elevation recorded on March 23, 2020. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
3. State Groundwater Protection Standard (GWPS) for molybdenum is 0.010 mg/L; federal GWPS is 0.10 mg/L. The GWPS is from March 2020.
4. HGWA-1, HGWA-2, and HGWA-3 data shown for reference. The wells were not incorporated into the AP-3 well network until September 2020.
5. Aerial photograph source: Google Earth Pro, August 2019.

0 150 300 600



SCALE IN FEET

**ISO-CONCENTRATION MAP
MOLYBDENUM - MARCH 2020**

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

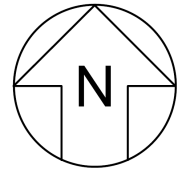
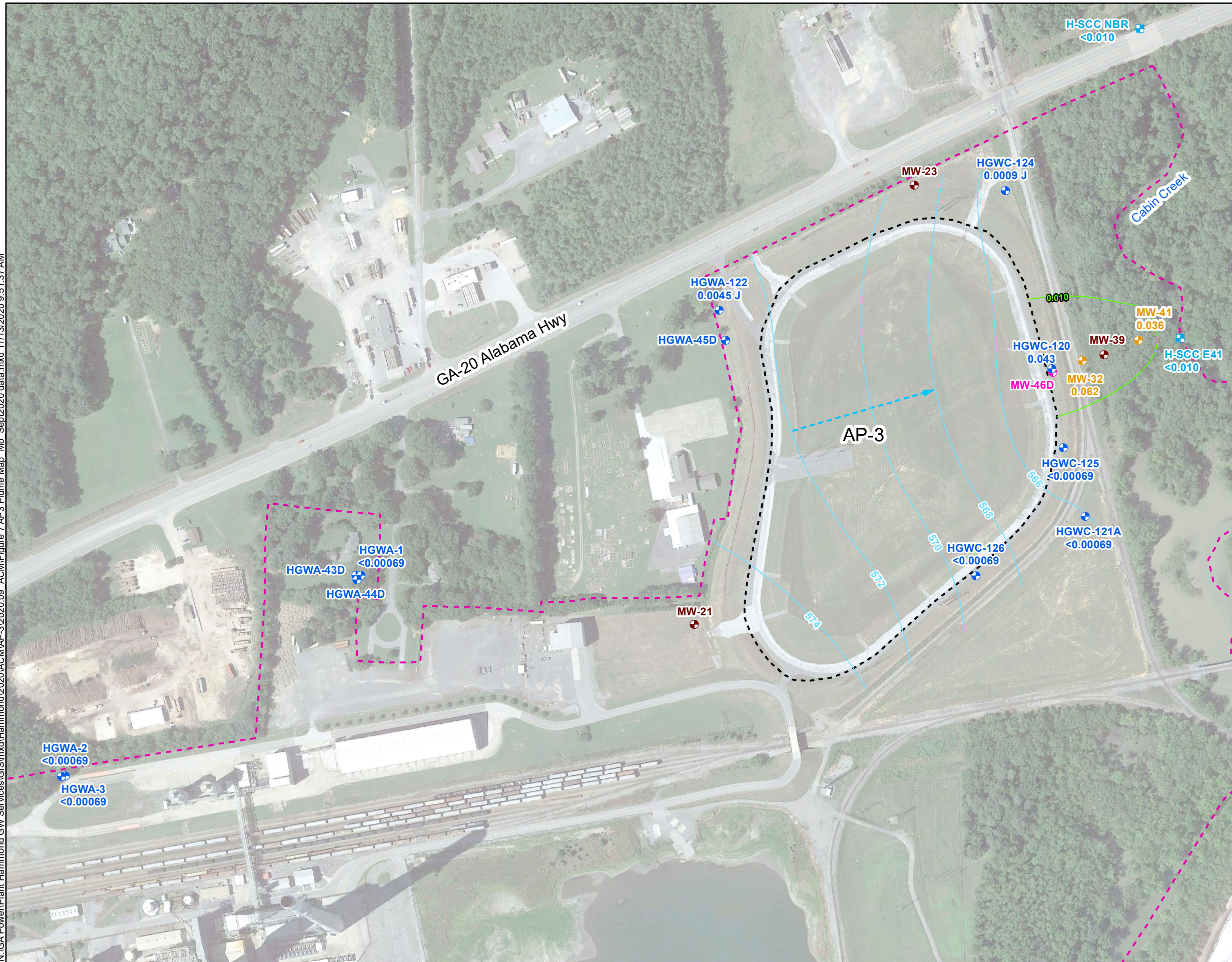
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

**FIGURE
6**

KENNESAW, GA NOVEMBER 2020

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\ACM\AP-3\2020.09_ACM\Figure 7 AP3 Plume Map_Mo_Sep2020\data.mxd 11/19/2020 9:51:37 AM

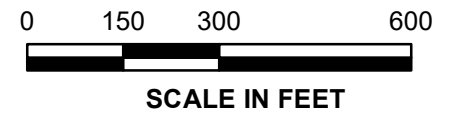


LEGEND

- Compliance Monitoring Well
- Horizontal Delineation Well
- Vertical Delineation Well
- Piezometer
- Surface Water Sample Point
- State GWPS Molybdenum Iso-Concentration Contour (mg/L)
- Groundwater Elevation Iso-Contour
- Approximate Groundwater Flow Direction
- Approximate AP-3 Boundary
- Plant Hammond Property Boundary

Notes:

1. Concentration data from groundwater samples collected during the September 2020 semiannual monitoring event. Surface water data collected in July 2020. Data reported for wells screened deeper in the aquifer were not used to generate the iso-concentration contour (HGWA-43D, HGWA-44D, HGWA-45D, MW-46D). Concentrations are reported in mg/L.
2. Water level elevation recorded on September 14, 2020. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
3. State Groundwater Protection Standard (GWPS) for molybdenum is 0.010 mg/L; federal GWPS is 0.10 mg/L. The GWPS is from March 2020.
4. Aerial photograph source: Google Earth Pro, August 2019.



**ISO-CONCENTRATION MAP
MOLYBDENUM - SEPTEMBER 2020**

GEORGIA POWER COMPANY
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA NOVEMBER 2020

**FIGURE
7**

APPENDIX A

Risk Evaluation Report



RISK EVALUATION REPORT

PLANT HAMMOND

ASH POND 3

ROME, FLOYD COUNTY, GEORGIA

Prepared for

Georgia Power
241 Ralph McGill Boulevard
Atlanta, Georgia 30308

Prepared by

Geosyntec Consultants
1255 Roberts Blvd., Suite 200,
Kennesaw, Georgia 30144

Project Number GZ7112H

December 2020

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LIST OF ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
AP	Ash Pond
CCR	Coal combustion residual
CEM	Conceptual Exposure Model
COPI	constituent of potential interest
EPD	[Georgia] Environmental Protection Division
ft	feet
GWPS	groundwater protection standards
HSRA	Hazardous Site Response Act
HDPE	high-density polyethylene
HAR	Hydrogeologic Assessment Report
IRIS	Integrated Risk Information System
MCL	Maximum Contaminant Level
mg/l	milligrams per liter
PE	Professional Engineer
RRS	Risk Reduction Standard
RSL	Regional Screening Levels
RME	Resonable Maximum Exposure
SSL	statistically significant level
USEPA	United States Environmental Protection Agency
VRP	Voluntary Remediation Program

EXECUTIVE SUMMARY

Georgia Power's Plant Hammond (site) is a former four-unit, coal-fired electric generating facility owned and operated by Georgia Power that was retired on July 29, 2019. The site is located along the Coosa River, approximately 10 miles west of Rome, Floyd County, Georgia. Coal combustion residual (CCR) material resulting from such power generation have historically been transferred and stored in four ash ponds (AP) AP-1, AP-2, AP-3, and AP-4 in compliance with applicable regulations. This report focuses on AP-3.

AP-3 was constructed in 1974, and CCR sluicing and placement began in June 1977. In the early 1980s, AP-3 was converted into a dry CCR stacking area and the pond ceased receiving CCR material in the early 1990s. Georgia Power has closed AP-3 in place pursuant to the Federal CCR Rule¹, 40 Code of Federal Regulations (CFR) Part 257 Subpart D - *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments*, and the Georgia Environmental Protection Division (EPD) *Coal Combustion Residuals* Rule 391-3-4-.10 (State CCR Rule). The closure of AP-3 was initiated on December 7, 2015. Following the closure of AP-3 and the installation of a geomembrane cap system, Georgia Power submitted a Construction Certification Report to EPD on December 13, 2018 to document the closure activities. Pursuant to Rule 391-3-4.10(2)(a), which incorporates the definitions under the 40 C.F.R. § 257.53, AP-3 meets the definition of an inactive CCR surface impoundment. Georgia Power submitted a permit application for the closure of AP-3 to EPD on November 20, 2018. Post closure care including semiannual groundwater monitoring and reporting is required for at least 30 years following closure in place per Federal and State CCR rules.

This report presents the results of a risk evaluation for molybdenum, the only CCR constituent exhibiting a statistically significant level (SSL) in groundwater at AP-3 from samples collected between 2016 through March 2020. Using methods consistent with United States Environmental Protection Agency (USEPA) guidance, concentrations of molybdenum detected in groundwater at AP-3 are not expected to pose a risk to human health or the environment. Molybdenum is not an SSL-related constituent based on the federal groundwater protection standards (GWPS) established pursuant to 40 C.F.R. § 257.95(h)(2) and does not exceed health-based criteria. USEPA revised the Federal CCR

¹ The full citation for the Federal CCR Rule is: 40 C.F.R. § 257, Subpart D – *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments*. The rule was finalized with an effective date of October 14, 2015 and last amended August 28, 2020 with an effective date of September 28, 2020 (USEPA, 2020a).

Rule on July 30, 2018, updating the GWPS for cobalt, lead, lithium, and molybdenum values (USEPA, 2018). While the updated federal health-based GWPS are expected to govern molybdenum, it was identified as an SSL-related constituent using the background-based GWPS established for AP-3 pursuant to the State CCR Rule. The risk evaluation relies on groundwater data collected by Georgia Power in compliance with the Federal and State CCR rules. For the purposes of the risk evaluation, a conservative (i.e., health-protective) approach was used that is consistent with Georgia EPD regulations and guidance, USEPA guidance, and accepted practices for risk assessment in the State of Georgia.

Consistent with USEPA guidance, this risk evaluation used a tiered approach to evaluate potential risks, which included the following steps:

1. Development of a conceptual exposure model (CEM) for AP-3.
2. Initial groundwater risk screening: Comparison of groundwater concentrations of molybdenum (the only SSL-related constituent) to conservative, health-protective criteria and/or background concentrations to assess whether it may pose a risk to human health.
3. Development of risk conclusions and identification of associated uncertainties.

Using this approach that includes multiple conservative assumptions, molybdenum in on-site groundwater monitoring wells was detected at concentrations below its health-protective screening criterion within the AP-3 property boundary. Accordingly, concentrations of molybdenum detected in groundwater at AP-3 are not expected to pose a risk to human health or the environment. Therefore, further risk evaluation of groundwater is not warranted. Compliance groundwater monitoring for AP-3 under the Federal and State CCR rules will continue. Georgia Power will evaluate the data and update this evaluation, if necessary.

1 INTRODUCTION

This report summarizes a risk evaluation of AP-3 at Plant Hammond (site) (**Figure 1**). AP-3 is located on the east side of the site property and is upgradient of Cabin Creek. Georgia Power has closed AP-3 in place in accordance with the Federal CCR Rule, 40 CFR § 257.102(d) and the State CCR Rule, 391-3-4-.10(7). The CCR material remaining in AP-3 was graded and a final cover system including a high-density polyethylene (HDPE) liner was installed to prevent infiltration to the maximum extent feasible and promote surface runoff from the unit.

This report presents the results of a risk evaluation for molybdenum, the only CCR constituent exhibiting a statistically significant level (SSL) in groundwater at AP-3. Using methods consistent with USEPA guidance, concentrations of molybdenum detected in groundwater at AP-3 are not expected to pose a risk to human health or the environment. Molybdenum is not an SSL-related constituent based on the federal GWPS established pursuant to 40 C.F.R. § 257.95(h)(2) and does not exceed health-based criteria. USEPA revised the Federal CCR Rule on July 30, 2018, updating the GWPS for cobalt, lead, lithium, and molybdenum values (USEPA, 2018b). While the updated federal health-based GWPS are expected to govern molybdenum, it was identified as an SSL-related constituent using the background-based GWPS established for AP-3 pursuant to the Georgia EPD Rule 391-3-4-.10(6)(a).

The risk evaluation includes the development of a site-specific CEM and a stepwise risk screening process for molybdenum, the SSL-related constituent identified in HGWC-120. The evaluation relies on a conservative, health-protective approach that is consistent with the risk evaluation approaches outlined in the Voluntary Remediation Program (VRP) (Georgia Voluntary Remediation Act, OCGA 12-8-100) and USEPA Regional Screening Levels (RSLs) User's Guide (USEPA, 2020b). This evaluation also incorporated principles and assumptions consistent with Georgia EPD's Rules for Solid Waste Management (EPD, 2018b). Based on the results of the risk evaluation for molybdenum, a site-specific recommended path forward is provided.

The remainder of the report is organized as follows:

Section 2, Basis and Background for the Development of the Conceptual Exposure Model – Presents site-specific information related to the site history, monitoring network, topography and surface hydrology, geology and hydrogeology, potential transport pathways, and receptors that could potentially be exposed to the SSL-related constituent.

Section 3, Risk Evaluation Screening – Describes the process for the risk-based screening of SSL-related constituents to identify constituents of potential interest (COPIs).

Section 4, Uncertainty Assessment – Describes the uncertainties associated with the risk screening process.

Section 5, Conclusions – Presents the conclusions of the risk evaluation.

Section 6, References – Provides reference information for the sources cited in this document.

2 BASIS AND BACKGROUND FOR THE DEVELOPMENT OF THE CONCEPTUAL EXPOSURE MODEL

This section provides a brief overview of the site location and operational history, site regulatory status, and geology/hydrogeology.

A CEM representing the site-specific processes and conditions that are relevant to the potential migration of groundwater and potential exposure to SSL-related constituents has been developed based on a review and compilation of information previously presented in AP-3 documents, including the *Hydrogeologic Assessment Report (HAR) (Revision 01) for Ash Pond 3* (Geosyntec, 2020a), *2019 Semiannual Groundwater Monitoring & Corrective Action Report – Plant Hammond - Ash Pond 3* (Geosyntec, 2020b); *2020 Annual Groundwater Monitoring & Corrective Action Report – Plant Hammond - Ash Pond 3* (Geosyntec, 2020c). The CEM includes a conservative evaluation of assumed potential transport pathways, potential exposure pathways and potential human and ecological receptors.

2.1 Site Description

The site is located in Floyd County, Georgia, approximately 10 miles west of the city of Rome. The site occupies about 1,100 acres and is bordered by Georgia Highway 20 (GA-20) on the north, the Coosa River on the south, Cabin Creek and industrial land on the east, and sparsely populated, forested, rural and industrial land on the west. A site location map and a detailed site map is included as **Figure 1**.

AP-3 was constructed in 1974, and CCR sluicing and placement began in June 1977. In the early 1980s, AP-3 was converted into a dry CCR stacking area and the pond ceased receiving CCR material in the early 1990s. The closure of AP-3 was initiated on December 7, 2015. Following the closure of AP-3 and the installation of a geomembrane cap system, Georgia Power submitted a Construction Certification Report on December 13, 2018 to document the closure activities. Pursuant to the State CCR Rule, 391-3-4.10(2)(a), which incorporates the definitions under the Federal CCR Rule 40 C.F.R. § 257.53, AP-3 meets the definition of an inactive CCR surface impoundment. Georgia Power submitted a permit application for the closure of AP-3 to EPD on November 20, 2018. Per CCR rules for closure in place, post closure care including semiannual groundwater monitoring and reporting is required at AP-3 for at least 30 years following closure.

As detailed in the *2020 Annual Groundwater Monitoring & Corrective Action Report – Plant Hammond - Ash Pond 3* (Geosyntec, 2020c), the groundwater monitoring network at AP-3

consists of 12 wells for the upgradient and downgradient groundwater monitoring system at the site. Seven of these wells (HGWA-1, HGWA-2, HGWA-3, HGWA-43D, HGWA-44D, HGWA-45D, and HGWA-122) are designated for monitoring of background conditions upgradient of the ash ponds, and five wells (HGWC-124, HGWC-120, HGWC-121A, HGWC-125, and HGWC-126) are intended for monitoring of conditions downgradient of AP-3. The monitoring well network for AP-3 is shown on **Figure 2**. Based on the conceptual site model and the observed hydrogeologic conditions at the site, downgradient well locations are distributed along the eastern, outside perimeter of the site, in the general direction of groundwater flow. Both background and downgradient wells are screened in the same water-bearing horizon along the zone of primary groundwater transport within the highly weathered bedrock and upper portion of the competent bedrock. In addition to the wells designated for the detection monitoring network, there are five piezometers located around the perimeter of AP-3 that are utilized for monitoring of groundwater elevations (Geosyntec, 2020c).

Semiannual groundwater monitoring and reporting for AP-3 is performed in accordance with the monitoring program requirements of the Georgia EPD Solid Waste Management Program.

2.1.1 Topography and Surface Hydrology

Generally, the property slopes very gently southeastward towards the Coosa River and Cabin Creek. The natural topographic relief across the facility is less than 20 feet, with higher elevations north of the site towards GA-20, and lower elevations south toward the Coosa River. The artificial fill berms around the perimeter of AP-3 reach elevations of approximately 610 feet above mean sea level (ft amsl), with stacked and capped CCR within AP-3 reaching nearly 615 ft amsl. Surface water drainage is oriented generally north to south in the area of the Site, with tributaries, including Cabin Creek, feeding into the westward flowing Coosa River (Geosyntec, 2019).

2.1.2 Geology and Hydrogeology

The following information is provided in the 2020 *Annual Groundwater Monitoring & Corrective Action Report – Plant Hammond - Ash Pond 3* (Geosyntec, 2020c) and presented below:

The Site is located within the Great Valley District of the Valley and Ridge Physiographic Province (Valley and Ridge) in northwest Georgia, which is characterized by Paleozoic sedimentary rocks that have been folded and faulted into the ridges and valleys that gave this region its name. Geologic mapping performed at the Site by Petrologic Solutions, Inc. under the direction of Golder (Golder, 2018) indicates that AP-3 is underlain by the middle units of the Cambrian age Conasauga Formation, consisting of mostly shaley limestone. Based on review of site-specific subsurface investigations, the bedrock at AP3 was identified as limestone or shaley limestone. AP-3 is underlain primarily by five lithologic units; (i) fill material, (ii) terrace alluvium, (iii) residuum, (iv) highly weathered/fractured limestone bedrock, and (v) unweathered limestone bedrock.

.....

The uppermost aquifer at AP-3 is a regional groundwater aquifer that occurs within the residuum and the weathered and fractured (limestone) bedrock. The uppermost aquifer is considered to be unconfined; however, localized, semi-confined conditions may be encountered due to the low-permeability clayey nature of the residual soils, or as a result of perched groundwater or poorly interconnected fracture networks in the bedrock. Based on observations of soil types and horizontal conductivity values, the movement of groundwater in the soil, and to some degree the highly weathered bedrock zone, can be characterized as low-to moderate permeability, porous media flow. Groundwater flow in the more competent underlying bedrock is characterized as fracture flow. Flow direction within the area of AP-3 is generally from west to east.

The potentiometric surface contours provided in the 2020 *Annual Groundwater Monitoring & Corrective Action Report – Plant Hammond - Ash Pond 3* (Geosyntec, 2020c) are provided on **Figure 3**.

2.2 Potential Exposure Pathways and Receptors

A variety of geologic, hydrogeologic, and geochemical mechanisms can occur in the subsurface and serve to attenuate constituent concentrations in groundwater such as soil or rock characteristics, the local geology and hydrogeology, and the distance the groundwater must travel before reaching a potential receptor. The CEM (**Figure 4**) depicts the conservative potential exposure pathways and receptors included in the risk evaluation.

The following potential exposure pathways and receptors were considered:

- On-site industrial worker: The groundwater exposure pathway for the on-site industrial worker was considered incomplete because there are no wells on-site that are classified for potential use as potable wells.
- On-site construction worker: While there is a potential for limited exposure to groundwater by a future construction worker through dermal contact with on-site shallow groundwater during subsurface activities, future construction workers would be expected to have little to no direct contact with on-site groundwater due to safety procedures outlined in their site-specific health and safety plans.
- On-site resident: The groundwater exposure pathway for on-site residents was considered incomplete because the site is zoned heavy-industrial and there is no residential use on-site under current site conditions and future residential use of the site is considered unlikely (Floyd County, 2019).
- Off-site industrial/construction worker: The potential for off-site worker exposure through direct contact with groundwater was addressed qualitatively through the evaluation of hypothetical off-site residential receptors. Health-protective screening levels for residential receptors would be more conservative than industrial and construction worker screening levels.
- Off-site resident: The groundwater exposure pathway for hypothetical off-site residential receptors was assumed to be potentially complete. Nearby zoning is Agricultural Residential with the exception of some Community Commercial zoning across Alabama Highway to the north of the site (Floyd County, 2019). An off-site well survey of potential groundwater wells within a three-mile radius of the site (as well as AP-1, AP-2, and AP-4) was conducted and consisted of reviewing Federal, State, and County records and online sources, in addition to conducting a windshield survey of the area (Newfields, 2020). The off-site well survey is included as

Appendix A. Results of the survey are presented on **Figure 5**. Hypothetical off-site residential receptors in the downgradient groundwater flow direction identified in the well survey are located on the opposite side of Cabin Creek, which may be a hydraulic discharge boundary for groundwater downgradient of AP-3.

Concentrations of the state SSL-related constituent molybdenum in on-site groundwater monitoring wells and piezometers are below health-protective screening levels within the site property boundary (i.e., on-site at AP-3). As a conservative measure, assumed potential off-site residential exposure to molybdenum was evaluated using on-site groundwater wells inside the perimeter of the property boundary and downgradient of AP-3. This comparison makes the conservative assumption that on-site groundwater has the potential to migrate to off-site drinking water wells through advective transport in groundwater without any attenuation in the aquifer media through factors such as dilution, dispersion, or adsorption. Accordingly, the risk evaluation screening for the off-site resident receptor assumed that this receptor may be potentially exposed by ingestion and dermal contact with groundwater to concentrations of the state SSL-related constituent molybdenum in groundwater through its hypothetical use as a future potable water source.

- Off-site recreational surface water receptor: The surface water exposure pathway for hypothetical recreational receptors was addressed qualitatively through the evaluation of on-site groundwater data. Molybdenum concentrations are below the health-protective screening criteria in on-site groundwater. Therefore, evaluation of the surface water pathway was not necessary.
- Off-site ecological surface water receptors: The surface water exposure pathway for off-site ecological receptors was addressed qualitatively through the evaluation of on-site groundwater data. Molybdenum concentrations are below health-protective screening criteria in on-site groundwater. Therefore evaluation of the surface water pathway was not necessary.

3 RISK EVALUATION SCREENING

The CEM developed in Section 2 was used to identify the potential exposure pathways to human receptors that should be considered in the risk evaluation. The initial step in the risk evaluation is the comparison of SSL-related constituent concentrations from groundwater samples collected between 2016 through March 2020 to relevant, health-protective levels. The approach used is consistent with the Georgia EPD regulations and guidance, USEPA guidance, and standard practice for risk assessment in the State of Georgia. Georgia EPD allows for the site-specific evaluation of risk in programs such as the Voluntary Remediation Program (VRP) (EPD, 2009).

The initial risk evaluation screening was performed for the potential groundwater exposure pathway by comparing the concentrations of molybdenum in groundwater samples from monitoring well HGWC-120 (identified as a state SSL-related constituent and not a federal SSL-related constituent²) to health-protective screening criteria. These criteria included risk reduction standards (RRS) established in accordance with the Hazardous Site Response Act (HSRA) for drinking water and site-specific background for the protection of human health. If the maximum concentration of the SSL-related constituent exceeded the screening criterion, the constituent was identified as a COPI for further evaluation in the refined risk evaluation. The methodology and screening criteria used were identified in accordance with regulatory guidance and standard risk assessment practices using an approach designed to conservatively overestimate possible exposures and risks, providing an additional level of confidence in the conclusions. The methodology is summarized on **Figure 6** and discussed in more detail below.

3.1 Data Used in Risk Evaluation Screening

This section provides information on the groundwater dataset used in the risk evaluation screening and refined risk evaluation.

3.1.1 Groundwater Data

For the initial risk screening evaluation, groundwater data from samples collected between 2016 through March 2020 from a single on-site well that was identified to have

² A state SSL-related constituent is determined by comparing the confidence intervals developed to either the constituent's Maximum Contaminant Level (MCL), if available, or the calculated background interwell prediction limit. A federal SSL-related constituent is determined by comparing the confidence intervals developed to either the constituent's MCL, if available, the USEPA RSL, if no MCL is available, or the calculated background interwell prediction limit.

a state SSL-related constituent, molybdenum, were used in the risk screening evaluation for hypothetical off-site residential exposure. The data for the well with the identified state SSL-related constituent, HGWC-120, was screened against the relevant health-protective screening criteria.

Groundwater data used in the risk screening level evaluation were collected from the uppermost aquifer and are considered to be representative of groundwater conditions at the site. The groundwater dataset used in the risk evaluation and is presented in **Appendix B**. Method detection limits for the groundwater datasets used in the risk evaluation were reviewed and confirmed to be less than the screening levels.

3.1.2 Background Groundwater Quality

Statistical analysis of groundwater monitoring data are performed at the site pursuant to §257.93-95 following the professional engineer (PE)-certified Statistical Analysis Method Certification (October, 2017, revised January 2020) (Geosyntec, 2020d) and the Unified Guidance (USEPA, 2009) for AP-3; background values are routinely updated under the program. For the data set presented, seven monitoring wells in the certified monitoring well network are designated as an upgradient (background) location for AP-3, HGWA-1, HGWA-2, HGWA-3, HGWA-43D, HGWA-44D, HGWA-45D, and HGWA-122. The statistical analyses performed on the groundwater data were described most recently in the *2020 Annual Groundwater Monitoring & Corrective Action Report* (Geosyntec, 2020c); text from that document is presented below.

The Sanitas groundwater statistical software was used to perform the analyses. Sanitas is a decision-support software package, that incorporates the statistical tests required of Subtitle C and D facilities by USEPA regulations and guidance as recommended in the USEPA document Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance (Unified Guidance) (USEPA, 2009). Time series plots generated by Sanitas are used to identify suspected outliers, or extreme values that would result in limits that are not representative of the current background data population. Suspected outliers at all wells are formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits. Background well data were updated following the Unified Guidance recommendation, evaluating recent background data using Tukey's box plot method for outliers and Sen's Slope/Mann-Kendall methods for potential trends.

3.2 Groundwater Screening Evaluation

The process of screening constituents detected in groundwater against human health screening levels for groundwater is discussed below and presented in **Figure 6**. The risk based drinking water screening level for molybdenum evaluated under the VRP approach presented herein was calculated following the HSRA methodology for Type 2 RRSs for residential receptors. The Hazardous Site Response Act, Rule 391-3-19.07(1) notes that “[a]ll risk reduction standards will, when implemented, provide adequate protection of human health and the environment.” In addition, Rule 391-3-19.07(3) notes a corrective action, if needed, may be considered complete when “a site meets any or a combination of the applicable risk reduction standards described in Rule 391-3-19-.07.”

In accordance with standard methodologies approved by the Georgia EPD and because RRS have not already been established for molybdenum under HSRA, a site-specific risk-based screening value was calculated using the default exposure factors for residential receptors and the methodology found in Appendix III of the HSRA rule (EPD, 2018b). Accordingly, the calculated screening value is equivalent to a Type 2 groundwater RRS protective of potential residential exposures. Toxicity values for molybdenum used in the calculations were identified in the Integrated Risk Information System (IRIS). The risk-based screening value was calculated using USEPA’s RSL calculator (USEPA, 2020b) assuming a target hazard quotient of 1, consistent with Georgia EPD guidance applicable in other contexts (EPD, 2018b). The calculations of the risk-based screening value for molybdenum are presented in **Appendix C**.

As a conservative measure, groundwater data collected from the well, HGWC-120, identified to have a state SSL-related constituent (i.e., molybdenum) were compared to the calculated residential screening criteria and the site-specific background value for groundwater.

Table 1 presents the maximum detected concentration of the SSL-related constituent (0.04 mg/L), which was used to represent potential off-site groundwater quality for comparison to the risk-based screening level of 0.10 mg/L for hypothetical off-site residential receptors. As noted in **Table 1**, molybdenum was not detected at concentrations that exceeded its screening level and was not retained as a COPI. Since molybdenum was not retained as a COPI, a refined risk evaluation was not necessary.

4 UNCERTAINTY ASSESSMENT

USEPA guidance stresses the importance of providing an analysis of uncertainties so that risk managers are better informed when evaluating risk assessment conclusions (USEPA, 1989). The uncertainty assessment provides a better understanding of the key uncertainties that are most likely to affect the risk assessment results and conclusions.

The potential uncertainties associated with the risk evaluation are as follows:

Health-Protective Screening Criteria Uncertainties:

- In accordance with standard methodologies approved by the Georgia EPD, an equivalent Type 2 risk-based value was selected as the screening criterion for molybdenum. Selection of the screening criteria is considered appropriate for risk quantification for AP-3. Georgia EPD Rule 391-3-19.07(1) notes that “[a]ll risk reduction standards will, when implemented, provide adequate protection of human health and the environment.” Thus, this approach is likely to overestimate risks for hypothetical off-site receptors.
- Screening criteria based on RRSs, such as that used for molybdenum, represent the reasonable maximum exposure (RME), which are the highest exposures that are reasonably expected to occur at a site. The RME is defined as “the highest exposure that is reasonably expected to occur at a site but that is still within the range of possible exposures” (USEPA, 1989). USEPA (1989) states that the “intent of the RME is to estimate a conservative exposure case (i.e., well above the average case) that is still within the range of possible exposures.” Potential receptors will likely have lower exposures than those presented in this risk evaluation (i.e., a majority of the site concentrations will be less than the maximum), which means that this risk evaluation likely overestimates potential exposure.

Exposure Uncertainties:

- The maximum detected concentration of molybdenum was compared to conservative risk-based screening criterion to identify if it was a COPI. Use of the maximum detected concentration is consistent with standard practice; however, use of the maximum detected concentration for exposure likely overestimates potential risk.

- The constituent included in the risk evaluation, molybdenum, may occur naturally in the site geologic setting. Although background concentrations were evaluated and used in the screening process, contributions to exposure and risk were assumed to be entirely CCR-related and natural background sources were not quantified. Thus, molybdenum (state SSL-related constituent) exposures were likely overestimated.
- Hypothetical off-site residential exposure was evaluated using on-site groundwater data from wells around the perimeter and downgradient of AP-3. This comparison makes the conservative assumption that on-site groundwater may potentially migrate to off-site drinking water wells through advective transport in groundwater, but without any attenuation within the aquifer media through factors such as dilution, dispersion, or adsorption. This assumption likely overestimates potential exposure and risk to hypothetical off-site receptors. Concentrations above screening criteria are not migrating off-site as all wells had molybdenum concentrations less than health-protective criteria.
- Concentrations of molybdenum in groundwater was assumed to be 100 percent bioavailable by the ingestion exposure route. This assumption tends to overestimate risk.
- An off-site well survey of potential groundwater wells within a three-mile radius of the site was conducted by NewFields in 2019 and consisted of reviewing publicly available federal, state, and county records as well as a windshield survey of the area (**Appendix A**). Geosyntec relied on the data collected by NewFields.
- The evaluation used on-site groundwater data to represent hypothetical off-site exposure, which is a conservative approach that likely results in overestimation of assumed exposure and assumed potential risk. Although off-site potable wells identified in the well survey were not included in the risk evaluation, the presence of these wells do not change the conclusions of the risk evaluation because the molybdenum (state SSL-related constituent) concentrations were below health-protective screening levels.

5 CONCLUSIONS

This risk evaluation for molybdenum at the site was conducted using methods consistent with Georgia EPD and USEPA guidance and included multiple conservative assumptions. As noted above, this risk evaluation addressed only molybdenum because it was the sole CCR constituent identified as an SSL-related constituent during compliance groundwater monitoring. Based on this evaluation, molybdenum is not expected to pose a risk to human health or the environment.

Accordingly, no further risk evaluation of groundwater is warranted. Compliance groundwater monitoring for AP-3 under the Federal and State CCR rules will continue. Georgia Power will proactively evaluate the data and update this evaluation, if necessary.

6 REFERENCES

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Minimum Criteria (Phase One, Part One)." Fed. Reg.83(146):36435-36456. (Revising 40 CFR 257, Subpart D). July 30, 2018.

USEPA, 2020a. *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments.* 40 C.F.R. § 257, Subpart D. Effective Date October 14, 2015 (as amended). Last amended August 28, 2020 with a final Effective Date of September 28, 2020.

USEPA, 2020b. *USEPA Regional Screening Levels and supporting online RSL Calculator and User's Guide.* Revised May 2020. Available at: www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.

TABLES

Table 1
SSL-Related Constituent Groundwater Screening
Plant Hammond AP-3 Risk Evaluation Report^[1]
Plant Hammond, Rome, GA

CCR Rule Designation	Constituent	CAS No.	Detection Frequency	Exceedance Frequency ^[2]	Maximum Concentration (mg/L)	Screening Level (mg/L)	Screening Level Source ^[3]	Site-Specific Background (mg/L)	COPI? (Y/N)	Rationale ^[4]
Appendix IV	Molybdenum	7439-98-7	11 / 11	0 / 11	0.04	0.1	Site-Specific	0.01	N	BSL

Notes:

[1] Evaluation includes 2016 to 2020 groundwater analytical data from downgradient wells HGWC-120.

[2] The exceedance frequency is based on the number of samples with detected concentrations that exceed the identified screening level.

[3] The screening values are the maximum value from the following sources:

- Type 1 RRSs listed in HSRA Appendix III, Table 1 (HSRA-regulated substances only).
- Type 2 RRSs are calculated by the EPA RSL calculator with exposure factors inputs from HSRA Appendix III.
- Site-Specific values calculated using the USEPA RSL calculator with default residential exposure factor listed in the RSL Users Guide.
- Site-specific background levels for Molybdenum were calculated as described in the document "*Statistical Analysis Method Certification, 40 CFR §257.93(f), Plant Hammond - Ash Pond 3 (AP-3)*" (Georgia Power Company, 2020).

[4] Rationale for classification of constituent as a COPI or exclusion as a COPI:

ASL = Above respective screening level

BSL = Equal to or below respective screening level

Definitions:

CAS = Chemical Abstract Service

CCR = Coal Combustion Residuals

COPI = Constituent of Potential Interest

EPA = United States Environmental Protection Agency

GA EPD= Georgia Environmental Protection Division

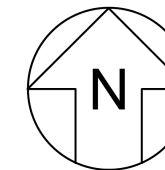
HSRA = [GA EPD] Hazardous Site Response Act

mg/L = milligram(s) per liter

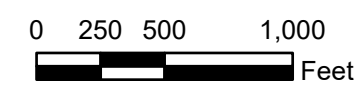
RRS = [GA EPD] Risk Reduction Standard

RSL = [EPA] Regional Screening Level

FIGURES



Note:
1. Aerial photography source: Google Earth, February 2018



SITE LOCATION

GEORGIA POWER
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

Prepared For:  Georgia Power

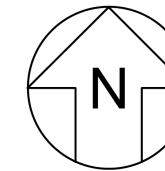
Prepared By:  Geosyntec
consultants

KENNESAW, GA DECEMBER 2020

**FIGURE
1**

I:\Arc-01\proj\GA Power\CCR Risk Evaluations\GIS\Hammond\MDAP3\Figure_1_SiteMap.mxd 11/16/2020 2:01:19 PM

N:\GA Power\Plant Hammond GW Services\GIS\mxd\Hammond\2020\CCR Reports\AP-3\Figure 2 WellMap.mxd 7/17/2020 9:08:42 AM



LEGEND
 + Compliance Monitoring Well
 ⊕ Piezometer



Note:
 1. Aerial photograph source: Google Earth Pro, August 2019.



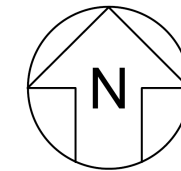
SITE LAYOUT AND MONITORING WELL NETWORK
 GEORGIA POWER
 PLANT HAMMOND AP-3
 FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power
 Prepared By: Geosyntec consultants

KENNESAW, GA DECEMBER 2020

FIGURE 2

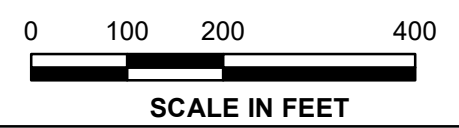
\\aro-01\pr1\S\GA Power\CCR Risk Evaluations\GIS\Hammond\MXD\AP3\Figure 3 POT Map_March2020_AP3.mxd_10/7/2020_12:56:48 PM



- LEGEND**
- ⊕ Piezometer
 - ⊕ Compliance Monitoring Well
 - Groundwater Elevation Iso-Contour
 - ➔ Approximate Groundwater Flow Direction



- Notes:**
1. Water level elevation recorded on March 23, 2020. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
 2. The map shows only the wells/piezometers installed at the time of the gauging event.
 3. Aerial photograph source: Google Earth Pro, August 2019.



**POTENTIOMETRIC SURFACE CONTOUR
MAP - MARCH 2020**

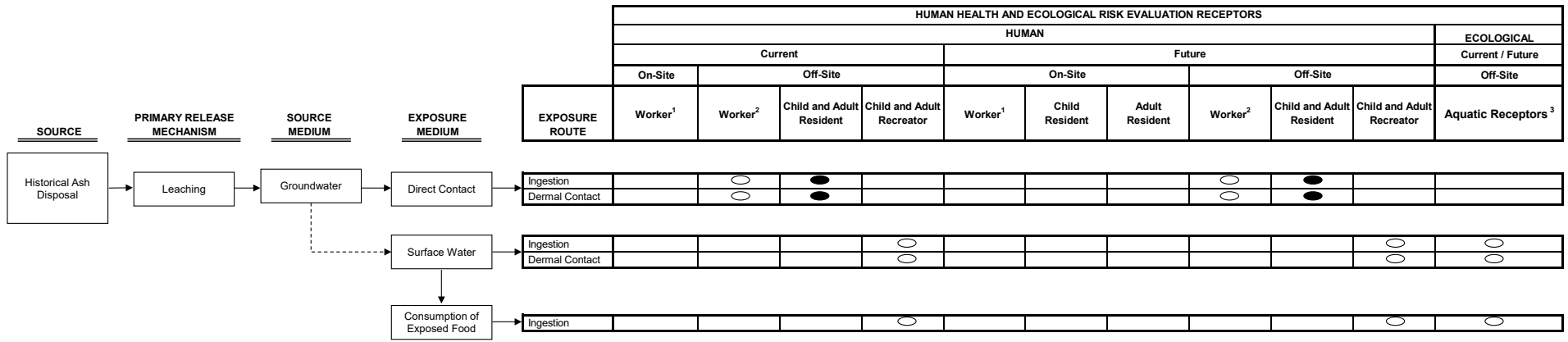
GEORGIA POWER
FORMER PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

**FIGURE
3**

KENNESAW, GA DECEMBER 2020



Legend

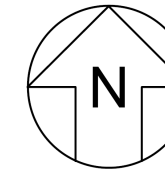
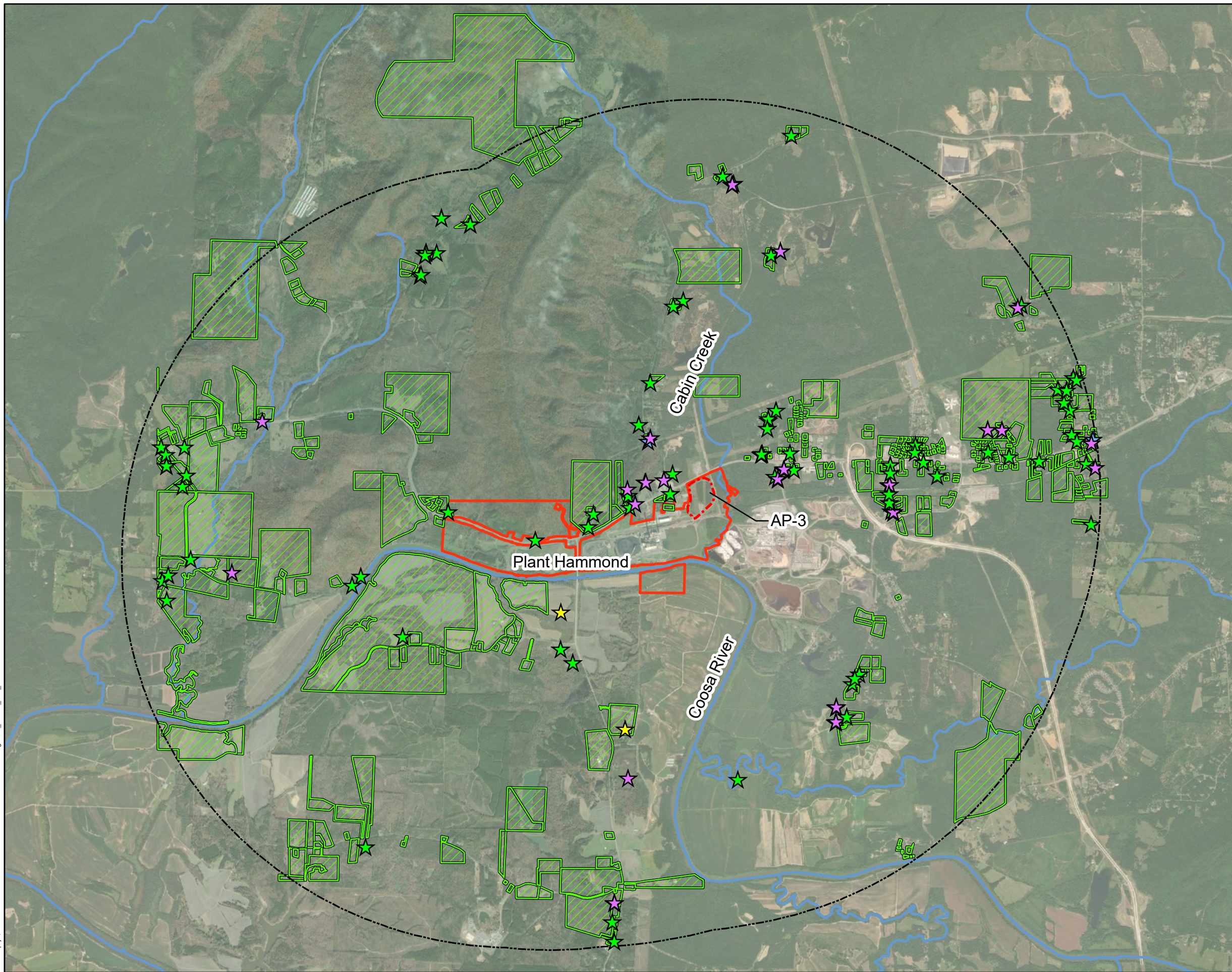
- > A conservative assumption for this assessment was made that groundwater from the site flows to the downgradient surface water.
- Indicates potentially complete pathway to receptors, which are evaluated quantitatively.
- Indicates potentially complete pathway to receptors, which are evaluated qualitatively.

Footnotes

1. Industrial worker was considered incomplete because there are no wells on-site that are classified for use as potable wells. On-site construction workers would be expected to have little to no direct contact with on-site groundwater due to safety procedures outlined in their site-specific health and safety plans.
2. Off-site industrial/construction worker addressed through the evaluation of hypothetical off-site residential receptors as health-protective screening levels for residential receptors would be more conservative than industrial and construction worker screening levels.
3. Generalized receptor for ecological health risk evaluation.

Figure 4 Conceptual Exposure Model		
		PRGJ NO. GZ7112H
Kennesaw, GA	December 2020	TASK / PHASE: 01 / 03

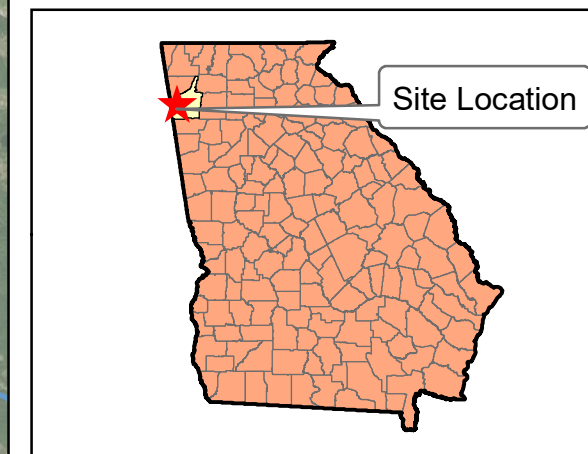
\\arc-01\proj1\GA Power\CCR Risk Evaluations\GIS\Hammond\MDAP3\Figure 5_Offsite_well_Locations.mxd 10/27/2020 12:51:45 PM



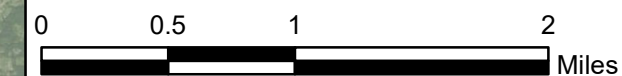
LEGEND

Off Site Wells

- ★ Industrial Well
- ★ Monitoring Well
- ★ Private Drinking Well
- ★ Private Irrigation Well
- River or Stream
- 3-Mile Radius
- ▨ Parcel Identified as Likely Having Well
- - - Approximate AP-3 Boundary
- ▭ Approximate Plant Hammond Site Boundary



Notes:
1. Aerial photograph source: ESRI World Imagery - Maxar, October 2017.



OFF-SITE WELL SURVEY RESULTS

GEORGIA POWER
PLANT HAMMOND AP-3
FLOYD COUNTY, GEORGIA

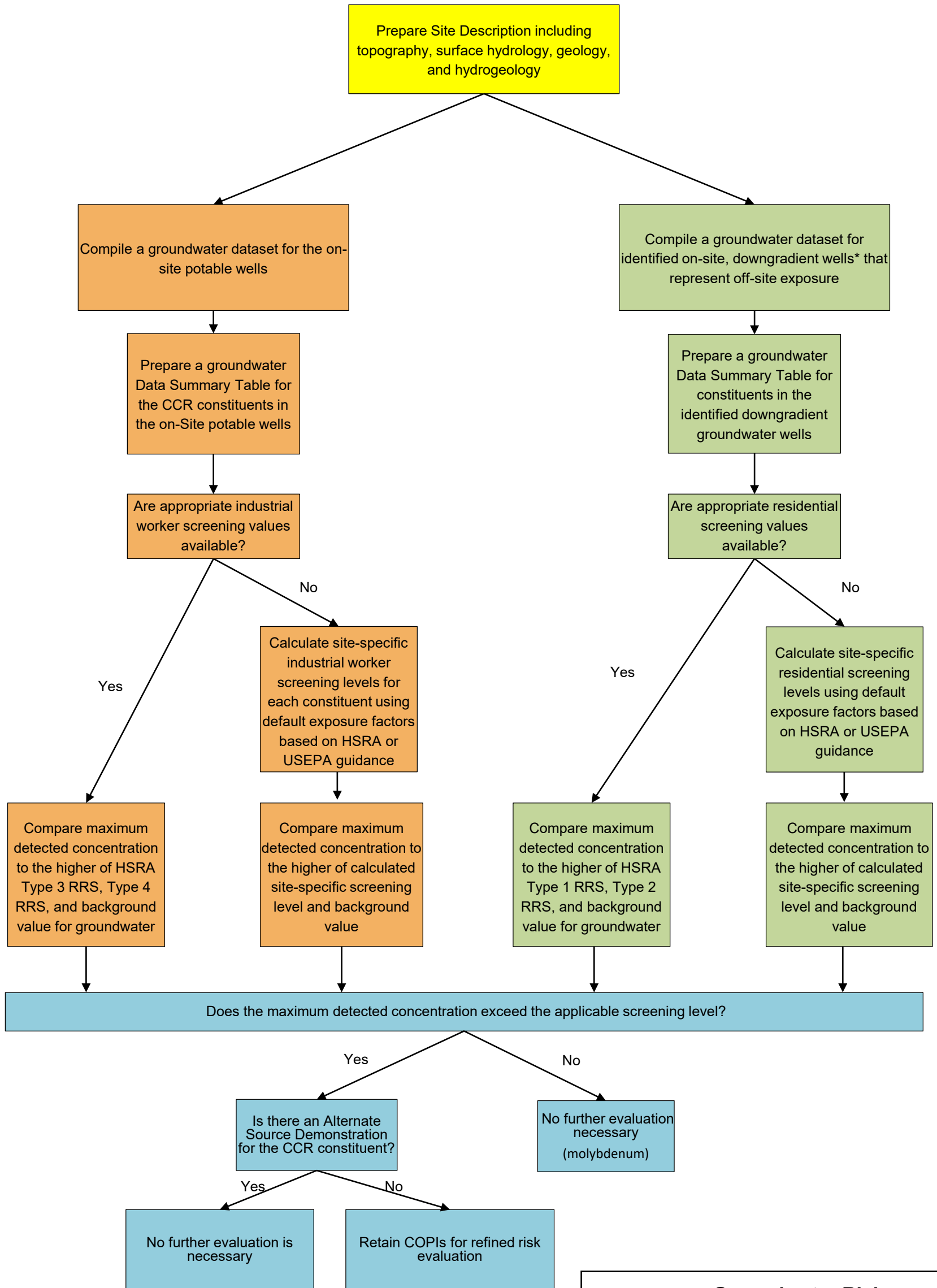
Prepared For: Georgia Power

Prepared By: Geosyntec
consultants

KENNESAW, GA | DECEMBER 2020

FIGURE
5

Risk Screening Approach (Groundwater)



• Includes the certified set of wells with identified SSL-related constituents from data collected between 2016 and March 2020.

Groundwater Risk Screening Approach

Figure 6

Project Number: GZ7112H

December 2020

APPENDIX A

Plant Hammond Well Survey (Off-Site)

Well Survey

Plant Hammond

Ash Pond 1, Ash Pond 2, Ash Pond 3, Ash Pond 4

Rome, GA

Prepared for

Georgia Power Company

241 Ralph McGill Blvd., Atlanta, GA 30308

Prepared by

NewFields Companies, LLC

1349 W. Peachtree Street, Suite 2000

Atlanta, GA 30309

March 5, 2020

Introduction

Plant Hammond is located at 5963 Alabama Highway SW, Rome, GA 30165 and situated on an approximately 430-acre parcel along the Coosa River.

The Plant has four current and former ash ponds. Newfields conducted a well survey of potential drinking water wells within a three-mile radius of Ash Pond 1 (AP-1), Ash Pond 2 (AP-2), Ash Pond 3 (AP-3), and Ash Pond 4 (AP-4). This area, referred to in this report as the Investigated Area, is shown on Figure 1.

As part of the survey, NewFields reviewed information from a number of Federal, State, and County records and online sources, as well as a windshield survey of the Investigated Area. Information from each identified well was then compiled into a geographic information system (GIS) database.

Information Collection

This section summarizes the sources utilized to identify potential drinking water wells within the Investigated Area.

1. Federal Sources

- a. **United States Geological Survey (USGS).** The USGS maintains an inventory database of wells sampled by a USGS-affiliated program for ground-water levels or water quality parameters at any time in the past.¹ Well information and coordinates were downloaded for the state of Georgia and compiled into the GIS database. All of the wells in this database in the Investigated Area were identified in the database simply as ‘monitoring wells’; however, many of these appear to be co-located with drinking water wells. Some of these USGS monitoring wells may in fact be private drinking water wells utilized for monitoring purposes by USGS.
- b. **Safe Drinking Water Information System (SDWIS).** This EPA database has listings of public water systems but does not have well location information. SDWIS information was used to help identify the suppliers of public water in the vicinity of each facility. The water supplier for the Investigated Area is the Floyd County Water Utility.

2. State Sources

Georgia Environmental Protection Division (EPD)

- a. **Drinking Water Branch.** EPD Drinking Water Branch maintains records about municipal and industrial wells, whose presence or absence within a radius of a site can be ascertained by contacting the agency. NewFields contacted Vicki Trent of EPD on October 3rd, 2019 requesting information about wells in the Investigated Area. Ms. Trent confirmed that there were no wells in the Investigated Area.

¹ <http://waterdata.usgs.gov/ga/nwis/inventory?introduction>

- b. **EPD Pesticide Sampling Project.** From 2000 to 2004, EPD undertook a project to sample private drinking water wells for pesticides. EPD solicited volunteers state-wide to participate in the well sampling program. The final report includes the list of private water wells sampled, their coordinates, and depths when available.² Information about wells within the Investigated Area were compiled into the GIS database.
 - c. **Hazardous Site Inventory (HSI) Files.** EPD maintains files for Hazardous Site Inventory files for site which are undergoing state-led corrective action. These files usually contain groundwater data and well surveys. The EPD's online, interactive HSI map was reviewed. The only nearby HSI site is the Berryhill Landfill, 1.3 miles to the northwest of the northern impoundment. This site was added to the GIS databases. Reports associated with this site were reviewed, and wells identified in site files were added to the GIS database.
 - d. **Hazardous Site Response Act (HSRA) Notifications.** EPD maintains non-HSI HSRA notification reports (i.e., notifications submitted after releases of reportable substances). NewFields reviewed reports associated with sites in Floyd County within a 5-mile radius of Plant Hammond were scanned. Wells identified on these surveys were compiled into the GIS database. NewFields omitted the four monitoring wells shown to be located on Plant Hammond's property by past non-HSI well surveys, as we considered it unlikely Georgia Power would be utilizing their monitoring wells for irrigation or drinking purposes.
3. Floyd County Sources
- a. **Health Department Records.** Floyd County Health Department (DOH) maintains records of the permits for "on-site sewage management systems" (septic tanks). These permits indicate whether the permittee has private or public water supply, and often identify the exact location of the well on a map. NewFields communicated with Timothy Hendrix with the Department of Environmental Health, who stated that it was not feasible for the DOH to search the septic records themselves, and they would not allow NewFields direct access to the files. However, Mr. Hendrix said he did not believe there was any public water available to the west of Huffaker Road.
 - b. **Floyd County Water Department.** NewFields communicated with Floyd County Utilities Administrator Stephen Hulseley who stated, "[w]e have nothing in the Coosa area west from Hwy 100 South." Hwy 100 South, also known as Foster Mill Road, is the road that runs between AP-2 and AP-4 and is the next major road to the west of Huffaker Rd. Mr. Hulseley stated he was not sure exactly how long the water system has been in place, but that he believed it was operating "since the 1970s."
 - c. **Tax Assessor Records.** Floyd County GIS department provided parcel data for the county that was joined with full WINGap data from the tax assessor's office. The tax assessor's data included improvement values for parcels (indicating the presence of a structure) and the

² https://epd.georgia.gov/sites/epd.georgia.gov/files/related_files/site_page/PR-55.pdf

year of construction. Parcels with structures built prior to 1970 were identified as potentially containing active or abandoned drinking water wells.

4. Windshield Surveys

- a. A windshield survey of the Investigated Area was conducted on October 9th, 2019. During the survey a number of wells were visually identified, which were subsequently compiled into the GIS database. It is impossible to determine whether the wells seen are irrigation wells, drinking water wells, or are currently active.

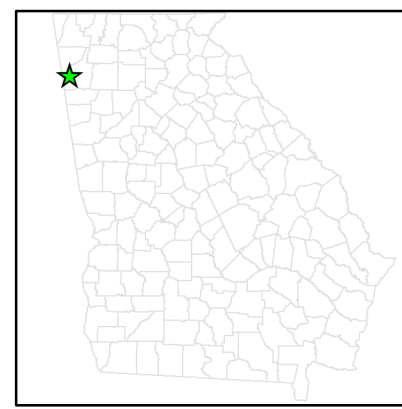
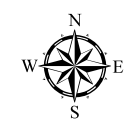
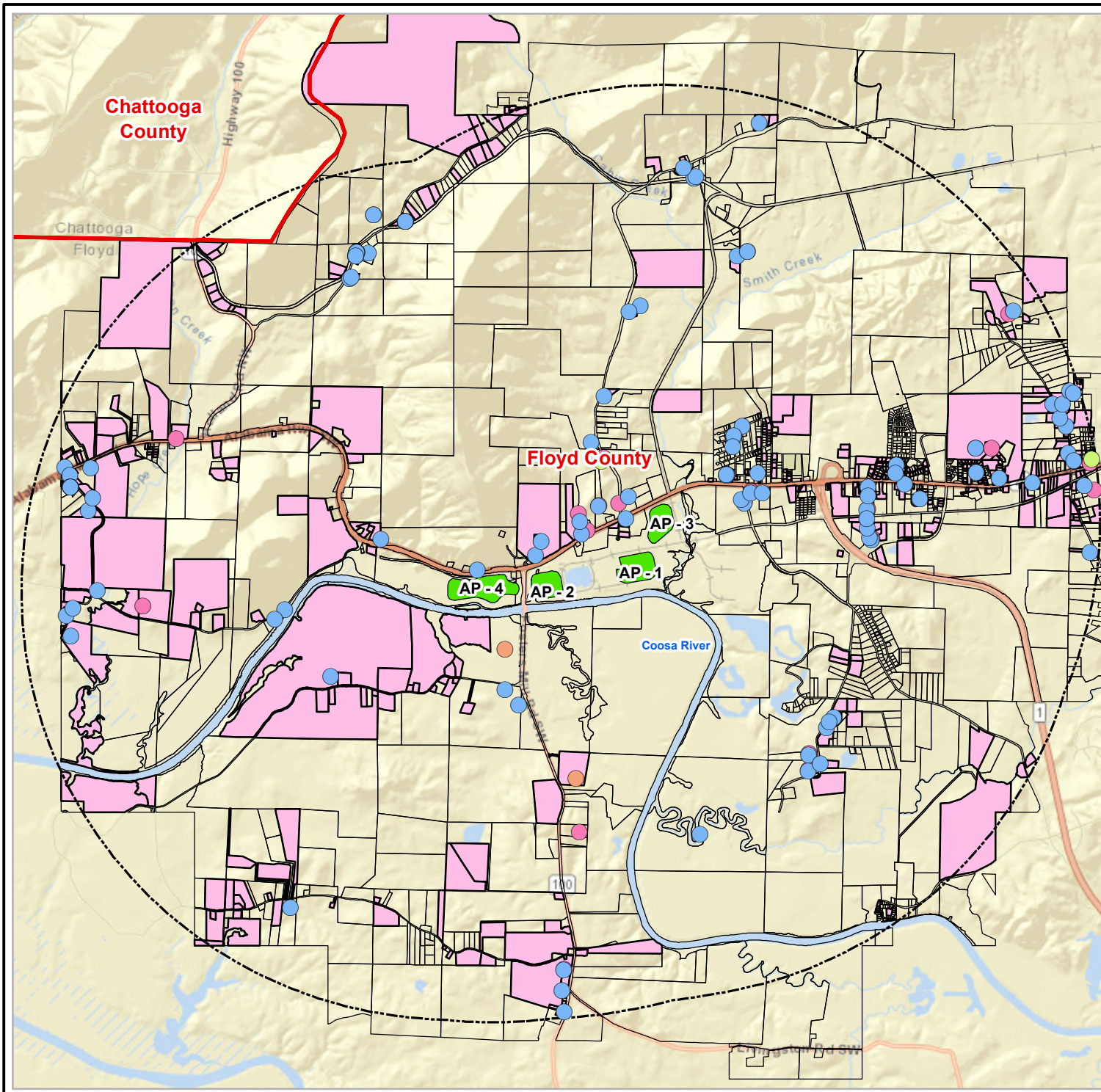
Summary

In addition to identifying specific wells from the above listed sources, NewFields used a combination of parcel data and information about the presence and age of public water infrastructure to identify parcels that most likely are using well water as their drinking water source or had drinking water wells at some time. Parcels may be (or have been) sharing wells, so a well may not exist for each identified parcel. These wells may or may not be active for drinking water and/or irrigation. Many wells were visible in the windshield surveys.

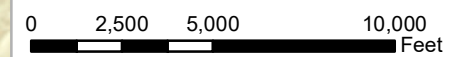
NewFields identified 707 actual and potential wells within the Investigated Area, the majority of which are likely private drinking water wells, but also some monitoring wells and commercial wells.³ There were no public drinking water wells within the Investigated Area.

Figure 1 shows points for identified wells in the Investigated Area. The shaded parcels are parcels that were identified from parcel data as likely to contain wells. When viewed as a PDF file, the figure is interactive, and wells identified using different sources can be turned on and off.

³ USGS monitoring wells located on Georgia Power property were considered not to be drinking water wells and omitted from the figures and tables in this report.



- Commercial Well
- Private Drinking Well
- Irrigation Well
- Monitoring Well
- County Line
- 3-Mile Radius
- Ash Pond
- Parcels
- Parcel identified as likely having a well



Title		Plant Hammond - Ash Ponds 1 - 4	
Project		GPC Plants Georgia	
		Two Midtown Plaza 1349 W. Peachtree St. #2000 Atlanta, Georgia 30309 Tel: 404-347-9050	
Date	02/13/2020	Rev. No.	2
MXD	gpc_ccr_2019/agis	Figure No.	1

APPENDIX B
Groundwater Data

Appendix B
Groundwater Data
Plant Hammond AP-3 Risk Evaluation Report
Plant Hammond, Rome, GA

Well ID	Sample Date	Constituent	Molybdenum
		Units	mg/L
		Ash Pond	
HGWC-120	8/31/2016	Ash Pond 3	0.018
HGWC-120	10/26/2016	Ash Pond 3	0.019
HGWC-120	1/27/2017	Ash Pond 3	0.021
HGWC-120	5/25/2017	Ash Pond 3	0.023
HGWC-120	10/2/2017	Ash Pond 3	0.026
HGWC-120	11/15/2017	Ash Pond 3	0.028
HGWC-120	6/5/2018	Ash Pond 3	0.033
HGWC-120	10/2/2018	Ash Pond 3	0.036
HGWC-120	8/22/2019	Ash Pond 3	0.039
HGWC-120	10/22/2019	Ash Pond 3	0.040
HGWC-120	3/25/2020	Ash Pond 3	0.034

Notes:

Bold = the constituent was detected in the sample.

"--" = No analysis conducted.

mg/L milligrams(s) per liter

APPENDIX C

USEPA RSL Calculator Generated Residential Screening Levels

Appendix C
USEPA RSL Calculator Generated Residential Screening Levels
Plant Hammond AP-3 Risk Evaluation Report
Plant Hammond, Rome, GA

Variable	Value
THQ (target hazard quotient) unitless	1
TR (target risk) unitless	0.00001
LT (lifetime) years	70
K (volatilization factor of Andelman) L/m3	0.5
Isc (apparent thickness of stratum corneum) cm	0.001
EDres (exposure duration - resident) years	26
EDres-c (exposure duration - child) years	6
EDres-a (exposure duration - adult) years	20
ED0-2 (mutagenic exposure duration first phase) years	2
ED2-6 (mutagenic exposure duration second phase) years	4
ED6-16 (mutagenic exposure duration third phase) years	10
ED16-26 (mutagenic exposure duration fourth phase) years	10
EFres (exposure frequency) days/year	350
EFres-c (exposure frequency - child) days/year	350
EFres-a (exposure frequency - adult) days/year	350
EF0-2 (mutagenic exposure frequency first phase) days/year	350
EF2-6 (mutagenic exposure frequency second phase) days/year	350
EF6-16 (mutagenic exposure frequency third phase) days/year	350
EF16-26 (mutagenic exposure frequency fourth phase) days/year	350
EEvent-res-adj (age-adjusted exposure time) hours/event	0.67077
EEvent-res-madj (mutagenic age-adjusted exposure time) hours/event	0.67077
ETres (exposure time) hours/day	24
ETres-c (dermal exposure time - child) hours/event	0.54
ETres-a (dermal exposure time - adult) hours/event	0.71
ETres-c (inhalation exposure time - child) hours/day	24
ETres-a (inhalation exposure time - adult) hours/day	24
ET0-2 (mutagenic inhalation exposure time first phase) hours/day	24
ET2-6 (mutagenic inhalation exposure time second phase) hours/day	24
ET6-16 (mutagenic inhalation exposure time third phase) hours/day	24
ET16-26 (mutagenic inhalation exposure time fourth phase) hours/day	24
ETO-2 (mutagenic dermal exposure time first phase) hours/event	0.54
ET2-6 (mutagenic dermal exposure time second phase) hours/event	0.54
ET6-16 (mutagenic dermal exposure time third phase) hours/event	0.71
ET16-26 (mutagenic dermal exposure time fourth phase) hours/event	0.71
BWres-a (body weight - adult) kg	80
BWres-c (body weight - child) kg	15
BW0-2 (mutagenic body weight) kg	15
BW2-6 (mutagenic body weight) kg	15
BW6-16 (mutagenic body weight) kg	80
BW16-26 (mutagenic body weight) kg	80
IFWres-adj (adjusted intake factor) L/kg	327.95
IFWres-adj (adjusted intake factor) L/kg	327.95
IFWMres-adj (mutagenic adjusted intake factor) L/kg	1019.9
IFWMres-adj (mutagenic adjusted intake factor) L/kg	1019.9
IRWres-c (water intake rate - child) L/day	0.78
IRWres-a (water intake rate - adult) L/day	2.5
IRW0-2 (mutagenic water intake rate) L/day	0.78
IRW2-6 (mutagenic water intake rate) L/day	0.78
IRW6-16 (mutagenic water intake rate) L/day	2.5
IRW16-26 (mutagenic water intake rate) L/day	2.5
EVres-a (events - adult) per day	1
EVres-c (events - child) per day	1
EVO-2 (mutagenic events) per day	1
EV2-6 (mutagenic events) per day	1
EV6-16 (mutagenic events) per day	1
EV16-26 (mutagenic events) per day	1
DFWres-adj (age-adjusted dermal factor) cm2-event/kg	2610650
DFWMres-adj (mutagenic age-adjusted dermal factor) cm2-event/kg	8191633
SAres-c (skin surface area - child) cm2	6365
SAres-a (skin surface area - adult) cm2	19652
SA0-2 (mutagenic skin surface area) cm2	6365
SA2-6 (mutagenic skin surface area) cm2	6365
SA6-16 (mutagenic skin surface area) cm2	19652
SA16-26 (mutagenic skin surface area) cm2	19652

Notes:
cm2 = centimeters squared
cm2-event/kg = centimeters squared per event per kilogram
kg = kilograms
L/kg = liters per kilogram
L = liters per day

Appendix C
USEPA RSL Calculator Generated Residential
Plant Hammond AP-3 Risk Evaluation Report
Plant Hammond, Rome, GA

Chemical	Molybdenum
CAS Number	7782-49-2
Mutagen?	No
Volatile?	No
Chemical Type	Inorganics
Sfo (mg/kg-day)-1	-
Sfo Ref	
IUR (ug/m3)-1	-
IUR Ref	
RfD (mg/kg-day)	0.005
RfD Ref	I
RfC (mg/m3)	0.02
RfC Ref	C
GIABS	1
Kp (cm/hr)	0.001
MW	79
B (unitless)	0.00342
t* (hr)	0.699
tevent (hr/event)	0.291
FA (unitless)	1
In EPD?	Yes
DAevent (ca)	-
DAevent (nc child)	0.0123
DAevent (nc adult)	0.0212
MCL (ug/L)	50
Ingestion SL TR=1E-05 (ug/L)	-
Dermal SL TR=1E-05 (ug/L)	-
Inhalation SL TR=1E-05 (ug/L)	-
Carcinogenic SL TR=1E-05 (ug/L)	-
Ingestion SL Child THQ=1 (ug/L)	100
Dermal SL Child THQ=1 (ug/L)	22800
Inhalation SL Child THQ=1 (ug/L)	-
Noncarcinogenic SL Child THI=1 (ug/L)	99.8
Ingestion SL Adult THQ=1 (ug/L)	167
Dermal SL Adult THQ=1 (ug/L)	29900
Inhalation SL Adult THQ=1 (ug/L)	-
Noncarcinogenic SL Adult THI=1 (ug/L)	166
Screening Level (ug/L)	9.98E+01 nc

Notes:

cm/hr = centimeters per hour
hr = hour
mg/kg-day = milligram per kilogram per day
nc = noncarcinogenic
ug/L = micrograms per liter
ug/m3 = micrograms per meter cubed

APPENDIX B

Laboratory Analytical Reports

November 10, 2020

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

RE: Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2020 and August 31, 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
- Pace Analytical Services - Peachtree Corners, GA

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

Sincerely,



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

Enclosures

cc: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

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

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, 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: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92492418001	HGWA-122	Water	08/24/20 16:52	08/25/20 11:25
92492418002	HGWA-2	Water	08/25/20 10:38	08/26/20 12:00
92492418003	HGWA-3	Water	08/25/20 09:29	08/26/20 12:00
92492418004	HGWC-125	Water	08/25/20 14:51	08/26/20 12:00
92492418005	HGWC-126	Water	08/25/20 12:55	08/26/20 12:00
92492418006	FB-01	Water	08/25/20 16:00	08/26/20 12:00
92492418007	HGWC-121A	Water	08/26/20 15:17	08/27/20 08:56
92492418008	MW-32	Water	08/26/20 13:10	08/27/20 08:56
92492418009	MW-39	Water	08/26/20 10:23	08/27/20 08:56
92492418010	MW-41	Water	08/26/20 11:37	08/27/20 08:56
92492418011	HGWC-120	Water	08/26/20 16:50	08/27/20 08:56
92492418012	FD-01	Water	08/26/20 00:00	08/27/20 08:56
92492418013	HGWC-124	Water	08/27/20 11:17	08/28/20 11:08
92492418014	HGWA-1	Water	08/28/20 09:26	08/31/20 12:08

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92492418001	HGWA-122	EPA 6020B	CW1, KH	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	CDC	1
92492418002	HGWA-2	EPA 6020B	CW1, KH	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1
92492418003	HGWA-3	EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	BRJ	1
92492418004	HGWC-125	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92492418005	HGWC-126	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92492418006	FB-01	EPA 6010D	DRB	1
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		EPA 300.0 Rev 2.1 1993	BRJ	3
92492418007	HGWC-121A	EPA 6020B	CW1, KH	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	CDC	1
92492418008	MW-32	EPA 6020B	CW1	12
		EPA 7470A	VB	1
92492418009	MW-39	EPA 300.0 Rev 2.1 1993	CDC	1
		EPA 6020B	CW1	12
		EPA 7470A	VB	1
92492418010	MW-41	EPA 300.0 Rev 2.1 1993	CDC	1
		EPA 6020B	CW1	12
		EPA 7470A	VB	1
92492418011	HGWC-120	EPA 300.0 Rev 2.1 1993	CDC	1
		EPA 6020B	CW1	12

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92492418012	FD-01	EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	CDC	1
		EPA 6020B	CW1	12
		EPA 7470A	VB	1
92492418013	HGWC-124	EPA 300.0 Rev 2.1 1993	CDC	1
		EPA 6020B	CW1	12
		EPA 7470A	VB	1
92492418014	HGWA-1	EPA 300.0 Rev 2.1 1993	BRJ	1
		EPA 6020B	CW1	12
		EPA 7470A	VB	1
		EPA 300.0 Rev 2.1 1993	CDC	1

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte
PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92492418001	HGWA-122					
	pH	6.54	Std. Units		09/08/20 11:50	
EPA 6020B	Barium	0.041	mg/L	0.010	08/28/20 16:22	
EPA 6020B	Chromium	0.00093J	mg/L	0.010	08/28/20 16:22	
EPA 6020B	Lead	0.000077J	mg/L	0.0050	08/28/20 16:22	
EPA 6020B	Molybdenum	0.0031J	mg/L	0.010	08/28/20 16:22	
EPA 300.0 Rev 2.1 1993	Fluoride	0.075J	mg/L	0.10	08/26/20 20:34	
92492418002	HGWA-2					
	pH	5.17	Std. Units		09/08/20 11:50	
EPA 6020B	Barium	0.11	mg/L	0.010	08/28/20 16:27	
EPA 6020B	Beryllium	0.00014J	mg/L	0.0030	08/28/20 16:27	
EPA 6020B	Chromium	0.00067J	mg/L	0.010	08/28/20 16:27	
EPA 6020B	Cobalt	0.018	mg/L	0.0050	08/28/20 16:27	
EPA 6020B	Lead	0.000085J	mg/L	0.0050	08/28/20 16:27	
EPA 6020B	Lithium	0.0015J	mg/L	0.030	08/28/20 16:27	
92492418003	HGWA-3					
	pH	7.14	Std. Units		09/08/20 11:50	
EPA 6020B	Barium	0.11	mg/L	0.010	08/28/20 16:33	
EPA 6020B	Lithium	0.0027J	mg/L	0.030	08/28/20 16:33	
92492418004	HGWC-125					
	pH	6.36	Std. Units		09/08/20 11:50	
EPA 6010D	Calcium	186	mg/L	1.0	09/08/20 21:53	M1
EPA 6020B	Barium	0.045	mg/L	0.010	08/28/20 17:06	
EPA 6020B	Boron	1.4	mg/L	0.10	08/28/20 17:06	
EPA 6020B	Cobalt	0.0087	mg/L	0.0050	08/28/20 17:06	
EPA 6020B	Lithium	0.0037J	mg/L	0.030	08/28/20 17:06	
EPA 6020B	Molybdenum	0.00099J	mg/L	0.010	08/28/20 17:06	
SM 2450C-2011	Total Dissolved Solids	772	mg/L	10.0	08/31/20 18:02	
EPA 300.0 Rev 2.1 1993	Chloride	10.6	mg/L	1.0	08/27/20 17:11	
EPA 300.0 Rev 2.1 1993	Fluoride	0.16	mg/L	0.10	08/27/20 17:11	
EPA 300.0 Rev 2.1 1993	Sulfate	353	mg/L	1.0	08/27/20 17:11	
92492418005	HGWC-126					
	pH	6.78	Std. Units		09/08/20 11:50	
EPA 6010D	Calcium	130	mg/L	1.0	09/08/20 22:11	
EPA 6020B	Barium	0.23	mg/L	0.010	08/28/20 17:12	
EPA 6020B	Boron	0.016J	mg/L	0.10	08/28/20 17:12	
EPA 6020B	Chromium	0.00096J	mg/L	0.010	08/28/20 17:12	
EPA 6020B	Lead	0.000045J	mg/L	0.0050	08/28/20 17:12	
EPA 6020B	Lithium	0.0037J	mg/L	0.030	08/28/20 17:12	
SM 2450C-2011	Total Dissolved Solids	505	mg/L	10.0	08/31/20 18:02	
EPA 300.0 Rev 2.1 1993	Chloride	8.7	mg/L	1.0	08/27/20 17:26	
EPA 300.0 Rev 2.1 1993	Fluoride	0.52	mg/L	0.10	08/27/20 17:26	
EPA 300.0 Rev 2.1 1993	Sulfate	62.8	mg/L	1.0	08/27/20 17:26	
92492418006	FB-01					
EPA 6020B	Barium	0.0022J	mg/L	0.010	08/28/20 17:18	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92492418007	HGWC-121A					
	pH	6.73	Std. Units		09/08/20 11:50	
EPA 6020B	Barium	0.057	mg/L	0.010	09/01/20 19:53	
EPA 6020B	Lithium	0.0071J	mg/L	0.030	09/01/20 19:53	
EPA 300.0 Rev 2.1 1993	Fluoride	0.16	mg/L	0.10	08/29/20 01:52	
92492418008	MW-32					
	pH	6.75	Std. Units		09/08/20 11:50	
EPA 6020B	Antimony	0.00035J	mg/L	0.0030	09/01/20 19:59	
EPA 6020B	Barium	0.055	mg/L	0.010	09/01/20 19:59	
EPA 6020B	Cobalt	0.0048J	mg/L	0.0050	09/01/20 19:59	
EPA 6020B	Lithium	0.031	mg/L	0.030	09/01/20 19:59	
EPA 6020B	Molybdenum	0.065	mg/L	0.010	09/01/20 19:59	
EPA 300.0 Rev 2.1 1993	Fluoride	0.33	mg/L	0.10	08/29/20 02:07	
92492418009	MW-39					
	pH	6.74	Std. Units		09/08/20 11:50	
EPA 6020B	Barium	0.059	mg/L	0.010	09/01/20 20:04	
EPA 6020B	Cobalt	0.0026J	mg/L	0.0050	09/01/20 20:04	
EPA 6020B	Lithium	0.031	mg/L	0.030	09/01/20 20:04	
EPA 6020B	Molybdenum	0.064	mg/L	0.010	09/01/20 20:04	
EPA 300.0 Rev 2.1 1993	Fluoride	0.32	mg/L	0.10	08/29/20 02:22	
92492418010	MW-41					
	pH	6.74	Std. Units		09/08/20 11:50	
EPA 6020B	Barium	0.066	mg/L	0.010	09/01/20 20:10	
EPA 6020B	Cobalt	0.00068J	mg/L	0.0050	09/01/20 20:10	
EPA 6020B	Lithium	0.027J	mg/L	0.030	09/01/20 20:10	
EPA 6020B	Molybdenum	0.039	mg/L	0.010	09/01/20 20:10	
EPA 300.0 Rev 2.1 1993	Fluoride	0.24	mg/L	0.10	08/29/20 02:37	
92492418011	HGWC-120					
	pH	6.96	Std. Units		09/08/20 11:50	
EPA 6020B	Barium	0.041	mg/L	0.010	09/01/20 20:27	
EPA 6020B	Cobalt	0.0023J	mg/L	0.0050	09/01/20 20:27	
EPA 6020B	Lithium	0.023J	mg/L	0.030	09/01/20 20:27	
EPA 6020B	Molybdenum	0.050	mg/L	0.010	09/01/20 20:27	
EPA 300.0 Rev 2.1 1993	Fluoride	0.48	mg/L	0.10	08/29/20 03:22	
92492418012	FD-01					
EPA 6020B	Barium	0.057	mg/L	0.010	09/01/20 20:33	
EPA 6020B	Cobalt	0.0046J	mg/L	0.0050	09/01/20 20:33	
EPA 6020B	Lithium	0.031	mg/L	0.030	09/01/20 20:33	
EPA 6020B	Molybdenum	0.067	mg/L	0.010	09/01/20 20:33	
EPA 300.0 Rev 2.1 1993	Fluoride	0.33	mg/L	0.10	08/29/20 03:37	
92492418013	HGWC-124					
	pH	7.15	Std. Units		09/08/20 11:50	
EPA 6020B	Barium	0.062	mg/L	0.010	09/01/20 20:44	
EPA 6020B	Lithium	0.00091J	mg/L	0.030	09/01/20 20:44	
EPA 6020B	Molybdenum	0.00091J	mg/L	0.010	09/01/20 20:44	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492418014	HGWA-1					
EPA 6020B	pH	7.02	Std. Units		09/08/20 11:50	
EPA 6020B	Barium	0.036	mg/L	0.010	09/02/20 17:11	
EPA 6020B	Lead	0.000070J	mg/L	0.0050	09/02/20 17:11	
EPA 6020B	Lithium	0.00087J	mg/L	0.030	09/02/20 17:11	
EPA 300.0 Rev 2.1 1993	Fluoride	0.080J	mg/L	0.10	09/03/20 19:50	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: HGWA-122		Lab ID: 92492418001		Collected: 08/24/20 16:52		Received: 08/25/20 11:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.54	Std. Units			1		09/08/20 11:50		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/18/20 15:00	09/18/20 18:07	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/27/20 17:10	08/28/20 16:22	7440-38-2	
Barium	0.041	mg/L	0.010	0.00071	1	08/27/20 17:10	08/28/20 16:22	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/27/20 17:10	08/28/20 16:22	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/27/20 17:10	08/28/20 16:22	7440-43-9	
Chromium	0.00093J	mg/L	0.010	0.00055	1	08/27/20 17:10	08/28/20 16:22	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/27/20 17:10	08/28/20 16:22	7440-48-4	
Lead	0.000077J	mg/L	0.0050	0.000036	1	08/27/20 17:10	08/28/20 16:22	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/27/20 17:10	08/28/20 16:22	7439-93-2	
Molybdenum	0.0031J	mg/L	0.010	0.00069	1	08/27/20 17:10	08/28/20 16:22	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/27/20 17:10	08/28/20 16:22	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/27/20 17:10	08/28/20 16:22	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	08/26/20 12:00	08/27/20 10:26	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.075J	mg/L	0.10	0.050	1		08/26/20 20:34	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

Sample: HGWA-2 **Lab ID: 92492418002** Collected: 08/25/20 10:38 Received: 08/26/20 12:00 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.17	Std. Units			1		09/08/20 11:50		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/18/20 15:00	09/18/20 18:12	7440-36-0	M1, R1
Arsenic	ND	mg/L	0.0050	0.00078	1	08/27/20 17:10	08/28/20 16:27	7440-38-2	
Barium	0.11	mg/L	0.010	0.00071	1	08/27/20 17:10	08/28/20 16:27	7440-39-3	
Beryllium	0.00014J	mg/L	0.0030	0.000046	1	08/27/20 17:10	08/28/20 16:27	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/27/20 17:10	08/28/20 16:27	7440-43-9	
Chromium	0.00067J	mg/L	0.010	0.00055	1	08/27/20 17:10	08/28/20 16:27	7440-47-3	
Cobalt	0.018	mg/L	0.0050	0.00038	1	08/27/20 17:10	08/28/20 16:27	7440-48-4	
Lead	0.00085J	mg/L	0.0050	0.000036	1	08/27/20 17:10	08/28/20 16:27	7439-92-1	
Lithium	0.0015J	mg/L	0.030	0.00081	1	08/27/20 17:10	08/28/20 16:27	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/27/20 17:10	08/28/20 16:27	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/27/20 17:10	08/28/20 16:27	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/27/20 17:10	08/28/20 16:27	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 10:06	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/27/20 16:41	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: HGWA-3		Lab ID: 92492418003		Collected: 08/25/20 09:29		Received: 08/26/20 12:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.14	Std. Units			1		09/08/20 11:50		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/27/20 17:10	08/28/20 16:33	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/27/20 17:10	08/28/20 16:33	7440-38-2	
Barium	0.11	mg/L	0.010	0.00071	1	08/27/20 17:10	08/28/20 16:33	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/27/20 17:10	08/28/20 16:33	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/27/20 17:10	08/28/20 16:33	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/27/20 17:10	08/28/20 16:33	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/27/20 17:10	08/28/20 16:33	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/27/20 17:10	08/28/20 16:33	7439-92-1	
Lithium	0.0027J	mg/L	0.030	0.00081	1	08/27/20 17:10	08/28/20 16:33	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/27/20 17:10	08/28/20 16:33	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/27/20 17:10	08/28/20 16:33	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/27/20 17:10	08/28/20 16:33	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 10:08	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/27/20 16:56	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: HGWC-125 Lab ID: 92492418004 Collected: 08/25/20 14:51 Received: 08/26/20 12:00 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.36	Std. Units			1		09/08/20 11:50		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	186	mg/L	1.0	0.070	1	09/08/20 13:08	09/08/20 21:53	7440-70-2	M1
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/27/20 17:10	08/28/20 17:06	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/27/20 17:10	08/28/20 17:06	7440-38-2	
Barium	0.045	mg/L	0.010	0.00071	1	08/27/20 17:10	08/28/20 17:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/27/20 17:10	08/28/20 17:06	7440-41-7	
Boron	1.4	mg/L	0.10	0.0052	1	08/27/20 17:10	08/28/20 17:06	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/27/20 17:10	08/28/20 17:06	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/27/20 17:10	08/28/20 17:06	7440-47-3	
Cobalt	0.0087	mg/L	0.0050	0.00038	1	08/27/20 17:10	08/28/20 17:06	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/27/20 17:10	08/28/20 17:06	7439-92-1	
Lithium	0.0037J	mg/L	0.030	0.00081	1	08/27/20 17:10	08/28/20 17:06	7439-93-2	
Molybdenum	0.00099J	mg/L	0.010	0.00069	1	08/27/20 17:10	08/28/20 17:06	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/27/20 17:10	08/28/20 17:06	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/27/20 17:10	08/28/20 17:06	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 10:15	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	772	mg/L	10.0	10.0	1		08/31/20 18:02		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	10.6	mg/L	1.0	0.60	1		08/27/20 17:11	16887-00-6	
Fluoride	0.16	mg/L	0.10	0.050	1		08/27/20 17:11	16984-48-8	
Sulfate	353	mg/L	1.0	0.50	1		08/27/20 17:11	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: HGWC-126		Lab ID: 92492418005		Collected: 08/25/20 12:55		Received: 08/26/20 12:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.78	Std. Units			1		09/08/20 11:50		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	130	mg/L	1.0	0.070	1	09/08/20 13:08	09/08/20 22:11	7440-70-2	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/27/20 17:10	08/28/20 17:12	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/27/20 17:10	08/28/20 17:12	7440-38-2	
Barium	0.23	mg/L	0.010	0.00071	1	08/27/20 17:10	08/28/20 17:12	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/27/20 17:10	08/28/20 17:12	7440-41-7	
Boron	0.016J	mg/L	0.10	0.0052	1	08/27/20 17:10	08/28/20 17:12	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/27/20 17:10	08/28/20 17:12	7440-43-9	
Chromium	0.00096J	mg/L	0.010	0.00055	1	08/27/20 17:10	08/28/20 17:12	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/27/20 17:10	08/28/20 17:12	7440-48-4	
Lead	0.000045J	mg/L	0.0050	0.000036	1	08/27/20 17:10	08/28/20 17:12	7439-92-1	
Lithium	0.0037J	mg/L	0.030	0.00081	1	08/27/20 17:10	08/28/20 17:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/27/20 17:10	08/28/20 17:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/27/20 17:10	08/28/20 17:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/27/20 17:10	08/28/20 17:12	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 10:18	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	505	mg/L	10.0	10.0	1		08/31/20 18:02		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	8.7	mg/L	1.0	0.60	1		08/27/20 17:26	16887-00-6	
Fluoride	0.52	mg/L	0.10	0.050	1		08/27/20 17:26	16984-48-8	
Sulfate	62.8	mg/L	1.0	0.50	1		08/27/20 17:26	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: FB-01		Lab ID: 92492418006		Collected: 08/25/20 16:00	Received: 08/26/20 12:00	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	09/08/20 13:08	09/08/20 22:15	7440-70-2		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	08/27/20 17:10	08/28/20 17:18	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	08/27/20 17:10	08/28/20 17:18	7440-38-2		
Barium	0.0022J	mg/L	0.010	0.00071	1	08/27/20 17:10	08/28/20 17:18	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	08/27/20 17:10	08/28/20 17:18	7440-41-7		
Boron	ND	mg/L	0.10	0.0052	1	08/27/20 17:10	08/28/20 17:18	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	08/27/20 17:10	08/28/20 17:18	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	08/27/20 17:10	08/28/20 17:18	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	08/27/20 17:10	08/28/20 17:18	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	08/27/20 17:10	08/28/20 17:18	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	08/27/20 17:10	08/28/20 17:18	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	08/27/20 17:10	08/28/20 17:18	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	08/27/20 17:10	08/28/20 17:18	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	08/27/20 17:10	08/28/20 17:18	7440-28-0		
7470 Mercury		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 10:20	7439-97-6		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		08/31/20 18:02			
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		08/27/20 17:41	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		08/27/20 17:41	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		08/27/20 17:41	14808-79-8		

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: HGWC-121A Lab ID: 92492418007 Collected: 08/26/20 15:17 Received: 08/27/20 08:56 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.73	Std. Units			1		09/08/20 11:50		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/18/20 15:00	09/18/20 18:47	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 19:53	7440-38-2	
Barium	0.057	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 19:53	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 16:53	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 19:53	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 19:53	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 19:53	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 19:53	7439-92-1	
Lithium	0.0071J	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 19:53	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 19:53	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 19:53	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 19:53	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 10:22	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Fluoride	0.16	mg/L	0.10	0.050	1		08/29/20 01:52	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: MW-32		Lab ID: 92492418008		Collected: 08/26/20 13:10		Received: 08/27/20 08:56		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.75	Std. Units			1		09/08/20 11:50		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00035J	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 19:59	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 19:59	7440-38-2	
Barium	0.055	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 19:59	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 16:58	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 19:59	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 19:59	7440-47-3	
Cobalt	0.0048J	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 19:59	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 19:59	7439-92-1	
Lithium	0.031	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 19:59	7439-93-2	
Molybdenum	0.065	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 19:59	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 19:59	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 19:59	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 10:25	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.33	mg/L	0.10	0.050	1		08/29/20 02:07	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: MW-39		Lab ID: 92492418009		Collected: 08/26/20 10:23		Received: 08/27/20 08:56		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.74	Std. Units			1		09/08/20 11:50		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 20:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 20:04	7440-38-2	
Barium	0.059	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 20:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 17:04	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 20:04	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 20:04	7440-47-3	
Cobalt	0.0026J	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 20:04	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 20:04	7439-92-1	
Lithium	0.031	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 20:04	7439-93-2	
Molybdenum	0.064	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 20:04	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 20:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 20:04	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	08/31/20 11:00	09/01/20 11:36	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.32	mg/L	0.10	0.050	1		08/29/20 02:22	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: MW-41		Lab ID: 92492418010		Collected: 08/26/20 11:37		Received: 08/27/20 08:56		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.74	Std. Units			1		09/08/20 11:50		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 20:10	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 20:10	7440-38-2	
Barium	0.066	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 20:10	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 17:10	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 20:10	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 20:10	7440-47-3	
Cobalt	0.00068J	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 20:10	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 20:10	7439-92-1	
Lithium	0.027J	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 20:10	7439-93-2	
Molybdenum	0.039	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 20:10	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 20:10	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 20:10	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/08/20 11:15	09/09/20 11:08	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.24	mg/L	0.10	0.050	1		08/29/20 02:37	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: HGWC-120		Lab ID: 92492418011		Collected: 08/26/20 16:50		Received: 08/27/20 08:56		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.96	Std. Units			1		09/08/20 11:50		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 20:27	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 20:27	7440-38-2	
Barium	0.041	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 20:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 17:15	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 20:27	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 20:27	7440-47-3	
Cobalt	0.0023J	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 20:27	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 20:27	7439-92-1	
Lithium	0.023J	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 20:27	7439-93-2	
Molybdenum	0.050	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 20:27	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 20:27	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 20:27	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/08/20 11:15	09/09/20 11:10	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.48	mg/L	0.10	0.050	1		08/29/20 03:22	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: FD-01 Lab ID: 92492418012 Collected: 08/26/20 00:00 Received: 08/27/20 08:56 Matrix: Water										
Parameters	Results	Units	Report Limit		MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS										
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA										
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 20:33	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 20:33	7440-38-2		
Barium	0.057	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 20:33	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 17:21	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 20:33	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 20:33	7440-47-3		
Cobalt	0.0046J	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 20:33	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 20:33	7439-92-1		
Lithium	0.031	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 20:33	7439-93-2		
Molybdenum	0.067	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 20:33	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 20:33	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 20:33	7440-28-0		
7470 Mercury										
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA										
Mercury	ND	mg/L	0.00050	0.000078	1	09/08/20 11:15	09/09/20 11:13	7439-97-6		
300.0 IC Anions 28 Days										
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville										
Fluoride	0.33	mg/L	0.10	0.050	1		08/29/20 03:37	16984-48-8		

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: HGWC-124		Lab ID: 92492418013		Collected: 08/27/20 11:17		Received: 08/28/20 11:08		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.15	Std. Units			1		09/08/20 11:50		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:03	09/01/20 20:44	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:03	09/01/20 20:44	7440-38-2	
Barium	0.062	mg/L	0.010	0.00071	1	09/01/20 14:03	09/01/20 20:44	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:03	09/02/20 17:33	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:03	09/01/20 20:44	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:03	09/01/20 20:44	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/01/20 14:03	09/01/20 20:44	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/01/20 14:03	09/01/20 20:44	7439-92-1	
Lithium	0.00091J	mg/L	0.030	0.00081	1	09/01/20 14:03	09/01/20 20:44	7439-93-2	
Molybdenum	0.00091J	mg/L	0.010	0.00069	1	09/01/20 14:03	09/01/20 20:44	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:03	09/01/20 20:44	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:03	09/01/20 20:44	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/08/20 11:15	09/09/20 11:15	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/29/20 20:26	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Sample: HGWA-1		Lab ID: 92492418014		Collected: 08/28/20 09:26		Received: 08/31/20 12:08		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.02	Std. Units			1		09/08/20 11:50		
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/01/20 14:06	09/02/20 17:11	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/01/20 14:06	09/02/20 17:11	7440-38-2	
Barium	0.036	mg/L	0.010	0.00071	1	09/01/20 14:06	09/02/20 17:11	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/01/20 14:06	09/02/20 17:11	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/01/20 14:06	09/02/20 17:11	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/01/20 14:06	09/02/20 17:11	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/01/20 14:06	09/02/20 17:11	7440-48-4	
Lead	0.000070J	mg/L	0.0050	0.000036	1	09/01/20 14:06	09/02/20 17:11	7439-92-1	
Lithium	0.00087J	mg/L	0.030	0.00081	1	09/01/20 14:06	09/02/20 17:11	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/01/20 14:06	09/02/20 17:11	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/01/20 14:06	09/02/20 17:11	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/01/20 14:06	09/02/20 17:11	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	09/08/20 11:15	09/09/20 11:18	7439-97-6	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.080J	mg/L	0.10	0.050	1		09/03/20 19:50	16984-48-8	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 564973 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92492418004, 92492418005, 92492418006

METHOD BLANK: 2994728 Matrix: Water
Associated Lab Samples: 92492418004, 92492418005, 92492418006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/08/20 21:36	

LABORATORY CONTROL SAMPLE: 2994729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.95J	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2994730 2994731

Parameter	Units	2994730		2994731		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92492418004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	mg/L	186	1	1	180	183	-551	-205	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.

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 562831 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92492418001, 92492418002, 92492418003, 92492418004, 92492418005, 92492418006

METHOD BLANK: 2984655 Matrix: Water
Associated Lab Samples: 92492418001, 92492418002, 92492418003, 92492418004, 92492418005, 92492418006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/28/20 15:42	
Arsenic	mg/L	ND	0.0050	0.00078	08/28/20 15:42	
Barium	mg/L	ND	0.010	0.00071	08/28/20 15:42	
Beryllium	mg/L	ND	0.0030	0.000046	08/28/20 15:42	
Cadmium	mg/L	ND	0.0025	0.00012	08/28/20 15:42	
Chromium	mg/L	ND	0.010	0.00055	08/28/20 15:42	
Cobalt	mg/L	ND	0.0050	0.00038	08/28/20 15:42	
Lead	mg/L	ND	0.0050	0.000036	08/28/20 15:42	
Lithium	mg/L	ND	0.030	0.00081	08/28/20 15:42	
Molybdenum	mg/L	ND	0.010	0.00069	08/28/20 15:42	
Selenium	mg/L	ND	0.010	0.0016	08/28/20 15:42	
Thallium	mg/L	ND	0.0010	0.00014	08/28/20 15:42	

LABORATORY CONTROL SAMPLE: 2984656

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.095	95	80-120	
Arsenic	mg/L	0.1	0.094	94	80-120	
Barium	mg/L	0.1	0.093	93	80-120	
Beryllium	mg/L	0.1	0.096	96	80-120	
Cadmium	mg/L	0.1	0.096	96	80-120	
Chromium	mg/L	0.1	0.097	97	80-120	
Cobalt	mg/L	0.1	0.095	95	80-120	
Lead	mg/L	0.1	0.089	89	80-120	
Lithium	mg/L	0.1	0.094	94	80-120	
Molybdenum	mg/L	0.1	0.094	94	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.089	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2984657 2984658

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92491917001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.097	0.095	97	95	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.094	0.094	94	94	75-125	0	20	
Barium	mg/L	0.030	0.1	0.1	0.12	0.12	94	89	75-125	4	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.096	98	96	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

Parameter	Units	2984657		2984658		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92491917001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.097	0.095	97	95	75-125	3	20		
Chromium	mg/L	0.00063J	0.1	0.1	0.098	0.095	98	94	75-125	4	20		
Cobalt	mg/L	0.0039J	0.1	0.1	0.10	0.098	96	94	75-125	3	20		
Lead	mg/L	ND	0.1	0.1	0.090	0.088	90	88	75-125	2	20		
Lithium	mg/L	ND	0.1	0.1	0.098	0.096	97	96	75-125	2	20		
Molybdenum	mg/L	ND	0.1	0.1	0.097	0.095	97	95	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.093	0.093	93	93	75-125	1	20		
Thallium	mg/L	ND	0.1	0.1	0.090	0.089	90	89	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 563747 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92492418007, 92492418008, 92492418009, 92492418010, 92492418011, 92492418012, 92492418013

METHOD BLANK: 2988642 Matrix: Water
Associated Lab Samples: 92492418007, 92492418008, 92492418009, 92492418010, 92492418011, 92492418012, 92492418013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/01/20 19:19	
Arsenic	mg/L	ND	0.0050	0.00078	09/01/20 19:19	
Barium	mg/L	ND	0.010	0.00071	09/01/20 19:19	
Beryllium	mg/L	ND	0.0030	0.000046	09/02/20 16:41	
Cadmium	mg/L	ND	0.0025	0.00012	09/01/20 19:19	
Chromium	mg/L	ND	0.010	0.00055	09/01/20 19:19	
Cobalt	mg/L	ND	0.0050	0.00038	09/01/20 19:19	
Lead	mg/L	ND	0.0050	0.000036	09/01/20 19:19	
Lithium	mg/L	ND	0.030	0.00081	09/01/20 19:19	
Molybdenum	mg/L	ND	0.010	0.00069	09/01/20 19:19	
Selenium	mg/L	ND	0.010	0.0016	09/01/20 19:19	
Thallium	mg/L	ND	0.0010	0.00014	09/01/20 19:19	

LABORATORY CONTROL SAMPLE: 2988643

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	101	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.092	92	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.096	96	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.092	92	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988644 2988645

Parameter	Units	MS 92492563004		MSD 2988645		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result						
Antimony	mg/L	ND	0.1	0.1	0.10	100	95	75-125	5	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	99	92	75-125	7	20	
Barium	mg/L	0.056	0.1	0.1	0.15	93	90	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.091	91	89	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

Parameter	Units	2988644		2988645		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92492563004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Cadmium	mg/L	ND	0.1	0.1	0.097	0.094	97	94	75-125	3	20		
Chromium	mg/L	0.00098J	0.1	0.1	0.098	0.10	97	100	75-125	3	20		
Cobalt	mg/L	0.00061J	0.1	0.1	0.097	0.098	97	97	75-125	1	20		
Lead	mg/L	0.00036J	0.1	0.1	0.094	0.095	94	95	75-125	1	20		
Lithium	mg/L	0.0028J	0.1	0.1	0.092	0.091	89	88	75-125	1	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20		
Selenium	mg/L	ND	0.1	0.1	0.10	0.093	98	92	75-125	7	20		
Thallium	mg/L	ND	0.1	0.1	0.093	0.095	93	95	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 563754 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92492418014

METHOD BLANK: 2988660 Matrix: Water
Associated Lab Samples: 92492418014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.00031J	0.0030	0.00028	09/02/20 15:28	
Arsenic	mg/L	ND	0.0050	0.00078	09/02/20 15:28	
Barium	mg/L	ND	0.010	0.00071	09/02/20 15:28	
Beryllium	mg/L	ND	0.0030	0.000046	09/02/20 15:28	
Cadmium	mg/L	ND	0.0025	0.00012	09/02/20 15:28	
Chromium	mg/L	ND	0.010	0.00055	09/02/20 15:28	
Cobalt	mg/L	ND	0.0050	0.00038	09/02/20 15:28	
Lead	mg/L	ND	0.0050	0.000036	09/02/20 15:28	
Lithium	mg/L	ND	0.030	0.00081	09/02/20 15:28	
Molybdenum	mg/L	ND	0.010	0.00069	09/02/20 15:28	
Selenium	mg/L	ND	0.010	0.0016	09/02/20 15:28	
Thallium	mg/L	ND	0.0010	0.00014	09/02/20 15:28	

LABORATORY CONTROL SAMPLE: 2988661

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.099	99	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.095	95	80-120	
Cadmium	mg/L	0.1	0.096	96	80-120	
Chromium	mg/L	0.1	0.097	97	80-120	
Cobalt	mg/L	0.1	0.096	96	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.097	97	80-120	
Molybdenum	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988662 2988663

Parameter	Units	92493129002		2988663		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.097	0.099	97	98	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.097	0.099	97	99	75-125	2	20	
Barium	mg/L	0.021	0.1	0.1	0.12	0.12	95	98	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.089	0.093	89	93	75-125	5	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2988662		2988663		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92493129002 Result	MS Spike Conc.	MSD Spike Conc.									
Cadmium	mg/L	ND	0.1	0.1	0.094	0.096	94	96	75-125	3	20		
Chromium	mg/L	0.00059J	0.1	0.1	0.099	0.10	99	100	75-125	1	20		
Cobalt	mg/L	0.0021J	0.1	0.1	0.097	0.099	94	97	75-125	2	20		
Lead	mg/L	0.000095J	0.1	0.1	0.096	0.097	96	97	75-125	1	20		
Lithium	mg/L	0.0047J	0.1	0.1	0.096	0.099	92	94	75-125	2	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	102	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.098	0.098	97	97	75-125	0	20		
Thallium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

QC Batch: 567520

Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A

Analysis Description: 6020 MET

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92492418001, 92492418002, 92492418007

METHOD BLANK: 3007459

Matrix: Water

Associated Lab Samples: 92492418001, 92492418002, 92492418007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/18/20 17:55	

LABORATORY CONTROL SAMPLE: 3007460

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.095	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007461 3007462

Parameter	Units	3007461		3007462		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92492418002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Antimony	mg/L	ND	0.1	0.1	0.17	0.098	170	98	75-125	54	20 M1,R1

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

QC Batch: 562436

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92492418001

METHOD BLANK: 2982834

Matrix: Water

Associated Lab Samples: 92492418001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	08/27/20 10:10	

LABORATORY CONTROL SAMPLE: 2982835

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2982836 2982837

Parameter	Units	2982836		2982837		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0024	97	96	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 563370 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92492418002, 92492418003, 92492418004, 92492418005, 92492418006, 92492418007, 92492418008

METHOD BLANK: 2987104 Matrix: Water
Associated Lab Samples: 92492418002, 92492418003, 92492418004, 92492418005, 92492418006, 92492418007, 92492418008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	0.00011J	0.00050	0.000078	09/01/20 09:18	

LABORATORY CONTROL SAMPLE: 2987105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987106 2987107

Parameter	Units	2987106		2987107		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0024	0.0024	93	94	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 563371	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92492418009

METHOD BLANK: 2987108 Matrix: Water
Associated Lab Samples: 92492418009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	09/01/20 10:32	

LABORATORY CONTROL SAMPLE: 2987109

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0023	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2987110 2987111

Parameter	Units	2987110		2987111		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	0.00017J	0.0025	0.0026	0.0025	95	95	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 564593 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92492418010, 92492418011, 92492418012, 92492418013, 92492418014

METHOD BLANK: 2992563 Matrix: Water
Associated Lab Samples: 92492418010, 92492418011, 92492418012, 92492418013, 92492418014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	09/09/20 10:18	

LABORATORY CONTROL SAMPLE: 2992564

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0024	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2992565 2992566

Parameter	Units	2992565		2992566		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92493137001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0023	95	94	75-125	2	20

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 563552 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92492418004, 92492418005, 92492418006

METHOD BLANK: 2988051 Matrix: Water
Associated Lab Samples: 92492418004, 92492418005, 92492418006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	08/31/20 17:59	

LABORATORY CONTROL SAMPLE: 2988052

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	397	99	84-108	

SAMPLE DUPLICATE: 2988053

Parameter	Units	92492424001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	246	252	2	10	

SAMPLE DUPLICATE: 2988054

Parameter	Units	92492418006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

QC Batch: 562433

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: 92492418001

METHOD BLANK: 2982806

Matrix: Water

Associated Lab Samples: 92492418001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/26/20 18:18	

LABORATORY CONTROL SAMPLE: 2982807

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2982808 2982809

Parameter	Units	92492436002		2982808		2982809		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					MS % Rec
Fluoride	mg/L	0.41	0.41	2.5	2.5	2.9	2.9	100	101	90-110	0	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2982810 2982811

Parameter	Units	92492228007		2982810		2982811		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					MS % Rec
Fluoride	mg/L	0.077J	0.077J	2.5	2.5	2.5	2.6	98	101	90-110	3	10

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 562698 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: 92492418002, 92492418003, 92492418004, 92492418005, 92492418006

METHOD BLANK: 2984151 Matrix: Water
Associated Lab Samples: 92492418002, 92492418003, 92492418004, 92492418005, 92492418006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	08/27/20 13:21	
Fluoride	mg/L	ND	0.10	0.050	08/27/20 13:21	
Sulfate	mg/L	ND	1.0	0.50	08/27/20 13:21	

LABORATORY CONTROL SAMPLE: 2984152

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.5	101	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	50	50.9	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2984153 2984154

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92492398001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	25.8	50	50	77.8	78.7	104	106	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.1	2.1	82	84	90-110	2	10	M1	
Sulfate	mg/L	61.1	50	50	106	105	90	89	90-110	1	10	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2984155 2984156

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92492228018	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	ND	50	50	52.4	53.3	105	106	90-110	2	10		
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	105	107	90-110	1	10		
Sulfate	mg/L	ND	50	50	52.2	53.0	104	106	90-110	2	10		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 563042 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: 92492418007, 92492418008, 92492418009, 92492418010, 92492418011, 92492418012

METHOD BLANK: 2985604 Matrix: Water
Associated Lab Samples: 92492418007, 92492418008, 92492418009, 92492418010, 92492418011, 92492418012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/28/20 19:55	

LABORATORY CONTROL SAMPLE: 2985605

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2985606 2985607

Parameter	Units	2985606		2985607		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92492821006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Fluoride	mg/L	0.062J	2.5	2.5	2.7	2.7	105	106	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2985608 2985609

Parameter	Units	2985608		2985609		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92492821016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Fluoride	mg/L	0.14	2.5	2.5	2.8	2.8	106	106	90-110	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

QC Batch: 563290

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: 92492418013

METHOD BLANK: 2986801

Matrix: Water

Associated Lab Samples: 92492418013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/29/20 14:28	

LABORATORY CONTROL SAMPLE: 2986802

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986803 2986804

Parameter	Units	2986803		2986804		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	0.14	2.5	2.5	2.8	2.8	105	106	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2986805 2986806

Parameter	Units	2986805		2986806		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	0.15	2.5	2.5	2.8	2.8	105	107	90-110	1	10

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

QC Batch: 564239 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: 92492418014

METHOD BLANK: 2990890 Matrix: Water
Associated Lab Samples: 92492418014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	09/03/20 15:51	

LABORATORY CONTROL SAMPLE: 2990891

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2990892 2990893

Parameter	Units	2990892		2990893		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92493471003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Fluoride	mg/L	10.9	2.5	2.5	12.8	12.9	76	80	90-110	1	10 M6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2990894 2990895

Parameter	Units	2990894		2990895		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92493567003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Fluoride	mg/L	0.57	2.5	2.5	3.3	3.3	108	110	90-110	2	10

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

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.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 SCAN/BKG 03

Pace Project No.: 92492418

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92492418001	HGWA-122				
92492418002	HGWA-2				
92492418003	HGWA-3				
92492418004	HGWC-125				
92492418005	HGWC-126				
92492418007	HGWC-121A				
92492418008	MW-32				
92492418009	MW-39				
92492418010	MW-41				
92492418011	HGWC-120				
92492418013	HGWC-124				
92492418014	HGWA-1				
92492418004	HGWC-125	EPA 3010A	564973	EPA 6010D	565003
92492418005	HGWC-126	EPA 3010A	564973	EPA 6010D	565003
92492418006	FB-01	EPA 3010A	564973	EPA 6010D	565003
92492418001	HGWA-122	EPA 3005A	562831	EPA 6020B	562944
92492418001	HGWA-122	EPA 3005A	567520	EPA 6020B	567541
92492418002	HGWA-2	EPA 3005A	562831	EPA 6020B	562944
92492418002	HGWA-2	EPA 3005A	567520	EPA 6020B	567541
92492418003	HGWA-3	EPA 3005A	562831	EPA 6020B	562944
92492418004	HGWC-125	EPA 3005A	562831	EPA 6020B	562944
92492418005	HGWC-126	EPA 3005A	562831	EPA 6020B	562944
92492418006	FB-01	EPA 3005A	562831	EPA 6020B	562944
92492418007	HGWC-121A	EPA 3005A	563747	EPA 6020B	563831
92492418007	HGWC-121A	EPA 3005A	567520	EPA 6020B	567541
92492418008	MW-32	EPA 3005A	563747	EPA 6020B	563831
92492418009	MW-39	EPA 3005A	563747	EPA 6020B	563831
92492418010	MW-41	EPA 3005A	563747	EPA 6020B	563831
92492418011	HGWC-120	EPA 3005A	563747	EPA 6020B	563831
92492418012	FD-01	EPA 3005A	563747	EPA 6020B	563831
92492418013	HGWC-124	EPA 3005A	563747	EPA 6020B	563831
92492418014	HGWA-1	EPA 3005A	563754	EPA 6020B	563832
92492418001	HGWA-122	EPA 7470A	562436	EPA 7470A	562585
92492418002	HGWA-2	EPA 7470A	563370	EPA 7470A	563482
92492418003	HGWA-3	EPA 7470A	563370	EPA 7470A	563482
92492418004	HGWC-125	EPA 7470A	563370	EPA 7470A	563482
92492418005	HGWC-126	EPA 7470A	563370	EPA 7470A	563482
92492418006	FB-01	EPA 7470A	563370	EPA 7470A	563482
92492418007	HGWC-121A	EPA 7470A	563370	EPA 7470A	563482
92492418008	MW-32	EPA 7470A	563370	EPA 7470A	563482
92492418009	MW-39	EPA 7470A	563371	EPA 7470A	563653
92492418010	MW-41	EPA 7470A	564593	EPA 7470A	564990

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 SCAN/BKG 03
Pace Project No.: 92492418

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92492418011	HGWC-120	EPA 7470A	564593	EPA 7470A	564990
92492418012	FD-01	EPA 7470A	564593	EPA 7470A	564990
92492418013	HGWC-124	EPA 7470A	564593	EPA 7470A	564990
92492418014	HGWA-1	EPA 7470A	564593	EPA 7470A	564990
92492418004	HGWC-125	SM 2450C-2011	563552		
92492418005	HGWC-126	SM 2450C-2011	563552		
92492418006	FB-01	SM 2450C-2011	563552		
92492418001	HGWA-122	EPA 300.0 Rev 2.1 1993	562433		
92492418002	HGWA-2	EPA 300.0 Rev 2.1 1993	562698		
92492418003	HGWA-3	EPA 300.0 Rev 2.1 1993	562698		
92492418004	HGWC-125	EPA 300.0 Rev 2.1 1993	562698		
92492418005	HGWC-126	EPA 300.0 Rev 2.1 1993	562698		
92492418006	FB-01	EPA 300.0 Rev 2.1 1993	562698		
92492418007	HGWC-121A	EPA 300.0 Rev 2.1 1993	563042		
92492418008	MW-32	EPA 300.0 Rev 2.1 1993	563042		
92492418009	MW-39	EPA 300.0 Rev 2.1 1993	563042		
92492418010	MW-41	EPA 300.0 Rev 2.1 1993	563042		
92492418011	HGWC-120	EPA 300.0 Rev 2.1 1993	563042		
92492418012	FD-01	EPA 300.0 Rev 2.1 1993	563042		
92492418013	HGWC-124	EPA 300.0 Rev 2.1 1993	563290		
92492418014	HGWA-1	EPA 300.0 Rev 2.1 1993	564239		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Rec

WO#: 92492418

Client Name: G. Alwer



92492418

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

Cooler Temperature 5.8 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Optional
Proj. Due Date:
Proj. Name:

Date and Initials of person examining contents: 9/25/2004

		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 checked="" 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)



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: GA Power Address: Atlanta, GA	Section B Required Project Information: Report for: SCS Contacts Copy To: Geosyntec Contacts Project Name: Plant Hammond AP-3 Scan/BKG 03 Project Number: GW6581
Section C Invoice Information: Attention: Southern Co. Company Name:	Address: PACE QUOTE Reference: PACE PROJECT Manager: Kevin Herring Project Profile #
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER CCR	
Requested Due Date/TIME: 10 Day Project Number: GW6581 Requested Analysis Filtered (Y/N)	
Site Location STATE: GA	

ITEM #	Valid Matrix Codes MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Preservatives							Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH	
			DATE	TIME				DATE	TIME	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃					Methanol
1	HQWA-1	WT G				4													
2	HQWA-2	WT G				4													
3	HQWA-3	WT G				4													
4	HQWA-122	WT G	8/24	16:52		4													
5	HQWA-120	WT G				4													
6	HQWA-124	WT G				4													
7	HQWA-92	WT G				4													
8	HQWA-99	WT G				4													
9	HQWA-41	WT G				4													
10																			
11																			
12																			

ADDITIONAL COMMENTS Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.			
Relinquished By / Affiliation: <i>Melia Nelson</i> Date: <i>8/25/20</i>		Accepted By / Affiliation: <i>Melia Nelson</i> Date: <i>9/24/20</i>	
Relinquished By / Affiliation: <i>Aaron Reaser</i> Date: <i>8/25/20</i>		Accepted By / Affiliation: <i>Aaron Reaser</i> Date: <i>8/25/20</i>	
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <i>Aaron Reaser</i> SIGNATURE of SAMPLER: <i>Aaron Reaser</i>			
DATE Signed (MM/DD/YY): <i>08/24/2020</i>			
Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07.15-Feb-2007



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: GA Power	Address: Atlanta, GA	Report To: SCS Contacts	Copy To: Geosynthetic Contacts	Attention: Southern Co.	Company Name: Southern Co.	Address: <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER
Phone: SCS Contacts	Project Name: Plant Hammond AP-3 Scan/BKG 03	Purchase Order No.:	Project Number: GW6581	Company Name: Southern Co.	Address: <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	Site Location: <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER CCR
Requested Due Date/TAT: to Day	Requested Due Date/TAT: to Day	Requested Due Date/TAT: to Day	Requested Due Date/TAT: to Day	Requested Due Date/TAT: to Day	Requested Due Date/TAT: to Day	Requested Due Date/TAT: to Day

ITEM #	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analytes Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No/ Lab ID.	
				DATE	TIME	DATE								TIME
1	HQWA-1	WT G	WT G	8/25	1038	6	4	1	3	X	X	X	N	DH=
2	HQWA-2	WT G	WT G	8/25	0928	19	4	1	3	X	X	X	N	DH=5.17
3	HQWA-3	WT G	WT G	8/25	0928	19	4	1	3	X	X	X	N	DH=7.14
4	HQWA-122	WT G	WT G										N	DH=
5	HQWA-120	WT G	WT G										N	DH=
6	HQWA-121	WT G	WT G										N	DH=
7	HQWA-124	WT G	WT G										N	DH=
8	MMW-92	WT G	WT G										N	DH=
9	MMW-98	WT G	WT G										N	DH=
10	MMW-41	WT G	WT G										N	DH=
11													N	DH=
12													N	DH=

REINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
<i>[Signature]</i>	8/25	1615	<i>[Signature]</i>	8/25	1615
<i>[Signature]</i>	8/25	1810	<i>[Signature]</i>	8/25	1830
<i>[Signature]</i>	8/26	6:14:49	<i>[Signature]</i>	8/26	9:50
<i>[Signature]</i>	8/26	1200	<i>[Signature]</i>	8/26	1200

SAMPLER NAME AND SIGNATURE		DATE SIGNED	
PRINT Name of SAMPLER: Chad R. USSO	SIGNATURE of SAMPLER: <i>[Signature]</i>	DATE SIGNED (MM/DD/YY): 8/25/07	DATE SIGNED (MM/DD/YY): 8/25/07

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev07 15-Feb-2007



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: <u>2</u> of <u>2</u>
Company: GA Power	Report To: SCS Contacts	Attention: Southern Co.	
Address: Atlanta, GA	Copy To: Geosyntec Contacts	Company Name:	
Email To: SCS Contacts	Purchase Order No.:	Address:	
Phone: Fax	Project Name: Plant Hammond AP-3 Scan/BKG 03	Price Quote Reference: Kevin Herring	
Requested Due Date/TAT: 10 Day	Project Number: GW6581	Price Project Manager: Kevin Herring	
		Price Point #:	

Section D Required Client Information	Valid Matrix Codes	Matrix Code	Sample Type	Collected	Sample Temp at Collection	# of Containers	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Regulatory Agency	
SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	G	G	DATE	TIME	DATE	TIME	Y/N		<input type="checkbox"/> NPDES <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> OTHER COM	
	1	HGWC-125	WT G	8/25	1451	19	5	2	3	X	Residual Chlone (Y/N) Pace Project No./ Lab I.D. 62442418 pH = 6.37 pH = 6.78 005 006
	2	HGWC-126	WT G	8/25	1255	25	5	2	3	X	
	3	FB-01	WT G	8/25	1600	-	5	2	3	X	
	4	FB-01	WT G	-	-	-	5	2	3	X	
	5									X	
	6									X	
	7									X	
	8									X	
	9									X	
	10									X	
	11									X	
12									X		

ADDITIONAL COMMENTS	RELEASUED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, since through any wells not sampled, and note when the last sample for the event has been taken.	Bob Rugg / Geosyntec	8/15/02	1115	ET R	8/25	1615	Temp in °C
	Michelle Mendenhall / Geosyntec	8/24/02	0949	Michelle Mendenhall / Geosyntec	8/25	1730	Received on Ice (Y/N)
		8/24/02	0949	Kevin Herring	8/26	9:30a	Custody Sealed Cooler (Y/N)
					8/24/02	1200	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE	PRINT Name of SAMPLER: Chad Russell	DATE Signed (MM/DD/YYYY): 8/25/02
SIGNATURE of SAMPLER:		

Important Note: By signing this form, you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



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: GA Power Address: Atlanta, GA	Section B Required Project Information Report To: SCS Contacts Copy To: Geosynthetic Contacts
Section C Invoice Information Attention: Southern Co.	Section D Company Name Address: Pace Quote Ref: Kevin Herring Pace Project Manager: Kevin Herring Pace Profile #:

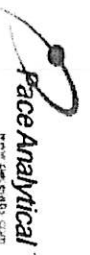
Required Due Date/TAT: 10 Day Project Name: Plant Hammond AP-3 Scan/BKG 03 Project Number: GW6581 Matrix Code: (see valid codes to left) Sample Type: (G=GRAB C=COMP) Date: _____ Time: _____ Sample Temp at Collection: _____ # of Containers: _____ Unpreserved: _____ H ₂ SO ₄ : _____ HNO ₃ : _____ HCl: _____ NaOH: _____ Na ₂ S ₂ O ₃ : _____ Methanol: _____ Other: _____ Analysis Test: Y/N Fluoride: N/N/N App IV Metals 60207470*: N/N/N RAD 226/228: N/N/N Requested Analysis Filtered (Y/N): _____ Residual Chlorine (Y/N): _____	Valid Matrix Codes DEMAND WATER DW WASTE WATER WW WASTE WATER P PRODUCT S SOLID S AIR WH AIR OT TISSUE TS Section D Required Client Information Matrix Code Sample ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE
--	---

ITEM #	MATRIX CODE	SAMPLE TYPE	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES	ANALYSIS TEST	REQUESTED ANALYSIS FILTERED (Y/N)	REGULATORY AGENCY	TEMP IN °C	RECEIVED ON (ICE Y/N)	CUSTODY SEALED COOLER (Y/N)	SAMPLES INTACT (Y/N)	
																	UNPRESERVED
1	HQWA-1	WT G						4									
2	HQWA-2	WT G						4									
3	HQWA-3	WT G						4									
4	HQWA-4	WT G						4									
5	HQWA-5	WT G						4									
6	HQWA-121	WT G						4									
7	HQWA-121	WT G						4									
8	MW-32	WT G	8/24	1300				4									
9	MW-39	WT G	8/26	1023				4									
10	MW-41	WT G	8/26	1137				4									
11																	
12																	

ADDITIONAL COMMENTS Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken. App IV Metals=Sn, As, Ba, Bi, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Ni	REQUISITIONED BY / AFFILIATION: AKS Sandler DATE: 8/27/20 TIME: 0805 ACCEPTED BY / AFFILIATION: Jeffrey Casper DATE: 8/27/20 TIME: 0805
SAMPILER NAME AND SIGNATURE: PRINT Name of SAMPILER: Aaron Reeder SIGNATURE OF SAMPILER: <i>[Signature]</i>	REGULATOR AGENCY: <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER CCR Site Location: GA STATE: GA

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev07 15-Feb-2007



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: GA Power
 Address: Atlanta, GA
 Section B Required Project Information
 Report to: SCS Contacts
 Copy To: Geosynlec Contacts
 Section C Invoice Information
 Attention: Southern Co.
 Company Name:
 Address:
 Pace Quote Reference: Kevin Herring
 Pace Project Manager: Kevin Herring
 Pace Profile #:
 Page: _____ of _____

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER COR
 Site Location STATE: GA

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test				Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH =											
											Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	CHloride, Fluoride, Sulfate	TDS	App. III & IV Metals 6010/6020/7476				RAD 228/228										
1	HQMG-429	WT G	WT G																																
2	HQMG-428	WT G	WT G																																
3	EB-01	WT G	WT G																																
4	FD-01	WT G	WT G																																
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			
11																																			
12																																			

ADDITIONAL COMMENTS: *DR 8-26-2020*

REQUISITIONED BY / AFFILIATION: *Samir* DATE: *8/27/20* TIME: *0805*
 ACCEPTED BY / AFFILIATION: *K. Williams* DATE: *8/27/20* TIME: *805*

APPROVED BY / AFFILIATION: *By W. Pool* DATE: *8/27/20* TIME: *0806*
 ACCEPTED BY / AFFILIATION: *K. Williams* DATE: *8/27/20* TIME: *1240*

SAMPLER NAME AND SIGNATURE: *Baron Redner*

PRINT Name of SAMPLER: *Baron Redner* DATE Signed (MM/DD/YY): *08/24/2020*

SIGNATURE of SAMPLER: *Baron Redner*

Temp in °C: _____ Received on Ice (Y/N): _____ Custody Sealed Cooler (Y/N): _____ Samples Intact (Y/N): _____

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September 18, 2020

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

RE: Project: HAMMOND AP-3 SCAN/BKG 03 RADS
Pace Project No.: 92492413

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between August 25, 2020 and August 31, 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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

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: HAMMOND AP-3 SCAN/BKG 03 RADS
Pace Project No.: 92492413

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92492413001	HGWA-122	Water	08/24/20 16:52	08/25/20 11:25
92492413002	HGWA-2	Water	08/25/20 10:38	08/26/20 12:00
92492413003	HGWA-3	Water	08/25/20 09:29	08/26/20 12:00
92492413004	HGWC-125	Water	08/25/20 14:51	08/26/20 12:00
92492413005	HGWC-126	Water	08/25/20 12:55	08/26/20 12:00
92492413006	FB-01	Water	08/25/20 16:00	08/26/20 12:00
92492413007	HGWC-121A	Water	08/26/20 15:17	08/27/20 08:56
92492413008	MW-32	Water	08/26/20 13:10	08/27/20 08:56
92492413009	MW-39	Water	08/26/20 10:23	08/27/20 08:56
92492413010	MW-41	Water	08/26/20 11:37	08/27/20 08:56
92492413011	HGWC-120	Water	08/26/20 16:50	08/27/20 08:56
92492413012	FD-01	Water	08/26/20 00:00	08/27/20 08:56
92492413013	HGWC-124	Water	08/27/20 11:17	08/28/20 11:08
92492413014	HGWA-1	Water	08/28/20 09:26	08/31/20 12:08

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 SCAN/BKG 03 RADS
Pace Project No.: 92492413

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92492413001	HGWA-122	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413002	HGWA-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413003	HGWA-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413004	HGWC-125	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413005	HGWC-126	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413006	FB-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413007	HGWC-121A	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413008	MW-32	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413009	MW-39	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413010	MW-41	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413011	HGWC-120	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413012	FD-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92492413013	HGWC-124	EPA 9315	LAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 SCAN/BKG 03 RADS
Pace Project No.: 92492413

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92492413014	HGWA-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
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SCAN/BKG 03 RADS
 Pace Project No.: 92492413

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492413001	HGWA-122					
EPA 9315	Radium-226	-0.00628 ± 0.143 (0.392) C:79% T:NA	pCi/L		09/14/20 07:28	
EPA 9320	Radium-228	0.883 ± 0.601 (1.16) C:58% T:72%	pCi/L		09/16/20 11:38	
Total Radium Calculation	Total Radium	0.883 ± 0.744 (1.55)	pCi/L		09/17/20 11:28	
92492413002	HGWA-2					
EPA 9315	Radium-226	0.247 ± 0.197 (0.321) C:67% T:NA	pCi/L		09/14/20 07:06	
EPA 9320	Radium-228	0.531 ± 0.470 (0.952) C:59% T:82%	pCi/L		09/16/20 11:38	
Total Radium Calculation	Total Radium	0.778 ± 0.667 (1.27)	pCi/L		09/17/20 11:28	
92492413003	HGWA-3					
EPA 9315	Radium-226	0.0110 ± 0.154 (0.407) C:81% T:NA	pCi/L		09/14/20 07:12	
EPA 9320	Radium-228	0.319 ± 0.502 (1.09) C:59% T:67%	pCi/L		09/16/20 11:38	
Total Radium Calculation	Total Radium	0.330 ± 0.656 (1.50)	pCi/L		09/17/20 11:28	
92492413004	HGWC-125					
EPA 9315	Radium-226	0.342 ± 0.208 (0.292) C:84% T:NA	pCi/L		09/14/20 07:12	
EPA 9320	Radium-228	1.31 ± 0.601 (1.02) C:58% T:82%	pCi/L		09/16/20 11:39	
Total Radium Calculation	Total Radium	1.65 ± 0.809 (1.31)	pCi/L		09/17/20 11:28	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SCAN/BKG 03 RADS
Pace Project No.: 92492413

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492413005	HGWC-126					
EPA 9315	Radium-226	0.584 ± 0.290 (0.456) C:84% T:NA	pCi/L		09/14/20 07:26	
EPA 9320	Radium-228	1.24 ± 0.706 (1.30) C:56% T:67%	pCi/L		09/16/20 11:39	
Total Radium Calculation	Total Radium	1.82 ± 0.996 (1.76)	pCi/L		09/17/20 11:28	
92492413006	FB-01					
EPA 9315	Radium-226	0.142 ± 0.149 (0.287) C:86% T:NA	pCi/L		09/14/20 08:24	
EPA 9320	Radium-228	0.359 ± 0.465 (0.990) C:61% T:80%	pCi/L		09/16/20 11:39	
Total Radium Calculation	Total Radium	0.501 ± 0.614 (1.28)	pCi/L		09/17/20 11:28	
92492413007	HGWC-121A					
EPA 9315	Radium-226	0.153 ± 0.141 (0.251) C:89% T:NA	pCi/L		09/14/20 08:24	
EPA 9320	Radium-228	1.81 ± 0.712 (1.14) C:61% T:75%	pCi/L		09/16/20 11:39	
Total Radium Calculation	Total Radium	1.96 ± 0.853 (1.39)	pCi/L		09/17/20 11:28	
92492413008	MW-32					
EPA 9315	Radium-226	0.281 ± 0.176 (0.244) C:89% T:NA	pCi/L		09/14/20 08:24	
EPA 9320	Radium-228	-0.0335 ± 0.466 (1.08) C:65% T:82%	pCi/L		09/16/20 11:39	
Total Radium Calculation	Total Radium	0.281 ± 0.642 (1.32)	pCi/L		09/17/20 11:28	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SCAN/BKG 03 RADS
 Pace Project No.: 92492413

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492413009	MW-39					
EPA 9315	Radium-226	0.500 ± 0.240 (0.304) C:91% T:NA	pCi/L		09/14/20 08:24	
EPA 9320	Radium-228	0.883 ± 0.510 (0.913) C:59% T:79%	pCi/L		09/16/20 14:42	
Total Radium Calculation	Total Radium	1.38 ± 0.750 (1.22)	pCi/L		09/17/20 14:16	
92492413010	MW-41					
EPA 9315	Radium-226	0.313 ± 0.197 (0.304) C:89% T:NA	pCi/L		09/14/20 08:24	
EPA 9320	Radium-228	1.22 ± 0.594 (1.01) C:59% T:78%	pCi/L		09/16/20 14:42	
Total Radium Calculation	Total Radium	1.53 ± 0.791 (1.31)	pCi/L		09/17/20 14:16	
92492413011	HGWC-120					
EPA 9315	Radium-226	0.357 ± 0.217 (0.331) C:83% T:NA	pCi/L		09/14/20 08:24	
EPA 9320	Radium-228	-0.169 ± 0.477 (1.17) C:57% T:67%	pCi/L		09/16/20 14:42	
Total Radium Calculation	Total Radium	0.357 ± 0.694 (1.50)	pCi/L		09/17/20 14:16	
92492413012	FD-01					
EPA 9315	Radium-226	0.102 ± 0.145 (0.312) C:89% T:NA	pCi/L		09/14/20 09:00	
EPA 9320	Radium-228	1.05 ± 0.508 (0.849) C:63% T:79%	pCi/L		09/16/20 14:42	
Total Radium Calculation	Total Radium	1.15 ± 0.653 (1.16)	pCi/L		09/17/20 14:16	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92492413013	HGWC-124					
EPA 9315	Radium-226	0.0465 ± 0.0876 (0.174) C:76% T:NA	pCi/L		09/10/20 19:37	
EPA 9320	Radium-228	0.447 ± 0.478 (0.997) C:66% T:77%	pCi/L		09/15/20 15:05	
Total Radium Calculation	Total Radium	0.494 ± 0.566 (1.17)	pCi/L		09/16/20 11:24	
92492413014	HGWA-1					
EPA 9315	Radium-226	-0.0409 ± 0.114 (0.247) C:91% T:NA	pCi/L		09/11/20 18:15	
EPA 9320	Radium-228	-0.622 ± 0.521 (1.31) C:60% T:80%	pCi/L		09/16/20 12:46	
Total Radium Calculation	Total Radium	0.000 ± 0.635 (1.56)	pCi/L		09/17/20 14:16	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-122 Lab ID: 92492413001 Collected: 08/24/20 16:52 Received: 08/25/20 11:25 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	-0.00628 ± 0.143 (0.392) C:79% T:NA	pCi/L	09/14/20 07:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.883 ± 0.601 (1.16) C:58% T:72%	pCi/L	09/16/20 11:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.883 ± 0.744 (1.55)	pCi/L	09/17/20 11:28	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Sample: HGWA-2 **Lab ID: 92492413002** Collected: 08/25/20 10:38 Received: 08/26/20 12:00 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	0.247 ± 0.197 (0.321) C:67% T:NA	pCi/L	09/14/20 07:06	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.531 ± 0.470 (0.952) C:59% T:82%	pCi/L	09/16/20 11:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.778 ± 0.667 (1.27)	pCi/L	09/17/20 11:28	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Sample: HGWA-3 **Lab ID: 92492413003** Collected: 08/25/20 09:29 Received: 08/26/20 12:00 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	0.0110 ± 0.154 (0.407) C:81% T:NA	pCi/L	09/14/20 07:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.319 ± 0.502 (1.09) C:59% T:67%	pCi/L	09/16/20 11:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.330 ± 0.656 (1.50)	pCi/L	09/17/20 11:28	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Sample: HGWC-125 **Lab ID: 92492413004** Collected: 08/25/20 14:51 Received: 08/26/20 12:00 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	0.342 ± 0.208 (0.292) C:84% T:NA	pCi/L	09/14/20 07:12	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.31 ± 0.601 (1.02) C:58% T:82%	pCi/L	09/16/20 11:39	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.65 ± 0.809 (1.31)	pCi/L	09/17/20 11:28	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Sample: HGWC-126 **Lab ID: 92492413005** Collected: 08/25/20 12:55 Received: 08/26/20 12:00 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	0.584 ± 0.290 (0.456) C:84% T:NA	pCi/L	09/14/20 07:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.24 ± 0.706 (1.30) C:56% T:67%	pCi/L	09/16/20 11:39	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.82 ± 0.996 (1.76)	pCi/L	09/17/20 11:28	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Sample: FB-01 **Lab ID: 92492413006** Collected: 08/25/20 16:00 Received: 08/26/20 12:00 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 ± 0.149 (0.287) C:86% T:NA	pCi/L	09/14/20 08:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.359 ± 0.465 (0.990) C:61% T:80%	pCi/L	09/16/20 11:39	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.501 ± 0.614 (1.28)	pCi/L	09/17/20 11:28	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-121A Lab ID: 92492413007 Collected: 08/26/20 15:17 Received: 08/27/20 08:56 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.153 ± 0.141 (0.251) C:89% T:NA	pCi/L	09/14/20 08:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.81 ± 0.712 (1.14) C:61% T:75%	pCi/L	09/16/20 11:39	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.96 ± 0.853 (1.39)	pCi/L	09/17/20 11:28	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Sample: MW-32 **Lab ID: 92492413008** Collected: 08/26/20 13:10 Received: 08/27/20 08:56 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	0.281 ± 0.176 (0.244) C:89% T:NA	pCi/L	09/14/20 08:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.0335 ± 0.466 (1.08) C:65% T:82%	pCi/L	09/16/20 11:39	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.281 ± 0.642 (1.32)	pCi/L	09/17/20 11:28	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Sample: MW-39 **Lab ID: 92492413009** Collected: 08/26/20 10:23 Received: 08/27/20 08:56 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	0.500 ± 0.240 (0.304) C:91% T:NA	pCi/L	09/14/20 08:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.883 ± 0.510 (0.913) C:59% T:79%	pCi/L	09/16/20 14:42	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.38 ± 0.750 (1.22)	pCi/L	09/17/20 14:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Sample: MW-41 **Lab ID: 92492413010** Collected: 08/26/20 11:37 Received: 08/27/20 08:56 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	0.313 ± 0.197 (0.304) C:89% T:NA	pCi/L	09/14/20 08:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	1.22 ± 0.594 (1.01) C:59% T:78%	pCi/L	09/16/20 14:42	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.53 ± 0.791 (1.31)	pCi/L	09/17/20 14:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-120 Lab ID: 92492413011 Collected: 08/26/20 16:50 Received: 08/27/20 08:56 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.357 ± 0.217 (0.331) C:83% T:NA	pCi/L	09/14/20 08:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.169 ± 0.477 (1.17) C:57% T:67%	pCi/L	09/16/20 14:42	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.357 ± 0.694 (1.50)	pCi/L	09/17/20 14:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Sample: FD-01 **Lab ID: 92492413012** Collected: 08/26/20 00:00 Received: 08/27/20 08:56 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	0.102 ± 0.145 (0.312) C:89% T:NA	pCi/L	09/14/20 09:00	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	1.05 ± 0.508 (0.849) C:63% T:79%	pCi/L	09/16/20 14:42	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.15 ± 0.653 (1.16)	pCi/L	09/17/20 14:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-124 Lab ID: 92492413013 Collected: 08/27/20 11:17 Received: 08/28/20 11:08 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.0465 ± 0.0876 (0.174) C:76% T:NA	pCi/L	09/10/20 19:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.447 ± 0.478 (0.997) C:66% T:77%	pCi/L	09/15/20 15:05	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.494 ± 0.566 (1.17)	pCi/L	09/16/20 11:24	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Sample: HGWA-1 **Lab ID: 92492413014** Collected: 08/28/20 09:26 Received: 08/31/20 12:08 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	-0.0409 ± 0.114 (0.247) C:91% T:NA	pCi/L	09/11/20 18:15	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.622 ± 0.521 (1.31) C:60% T:80%	pCi/L	09/16/20 12:46	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.000 ± 0.635 (1.56)	pCi/L	09/17/20 14:16	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

QC Batch:	412347	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92492413009, 92492413010, 92492413011, 92492413012

METHOD BLANK: 1994502 Matrix: Water

Associated Lab Samples: 92492413009, 92492413010, 92492413011, 92492413012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.314 ± 0.487 (1.05) C:61% T:69%	pCi/L	09/16/20 14:42	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

QC Batch: 412358

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92492413009, 92492413010, 92492413011, 92492413012

METHOD BLANK: 1994517

Matrix: Water

Associated Lab Samples: 92492413009, 92492413010, 92492413011, 92492413012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0557 ± 0.119 (0.278) C:90% T:NA	pCi/L	09/14/20 08:58	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

QC Batch: 412653	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92492413014

METHOD BLANK: 1995813 Matrix: Water

Associated Lab Samples: 92492413014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0793 ± 0.359 (0.855) C:71% T:76%	pCi/L	09/16/20 11:15	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

QC Batch: 412851	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92492413014

METHOD BLANK: 1996985 Matrix: Water

Associated Lab Samples: 92492413014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.205 ± 0.164 (0.296) C:93% T:NA	pCi/L	09/11/20 17:15	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

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: 92492413013

METHOD BLANK: 1994499

Matrix: Water

Associated Lab Samples: 92492413013

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	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

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: 92492413013

METHOD BLANK: 1994514

Matrix: Water

Associated Lab Samples: 92492413013

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	

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QUALIFIERS

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 SCAN/BKG 03 RADS

Pace Project No.: 92492413

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92492413001	HGWA-122	EPA 9315	412356		
92492413002	HGWA-2	EPA 9315	412356		
92492413003	HGWA-3	EPA 9315	412356		
92492413004	HGWC-125	EPA 9315	412356		
92492413005	HGWC-126	EPA 9315	412356		
92492413006	FB-01	EPA 9315	412356		
92492413007	HGWC-121A	EPA 9315	412356		
92492413008	MW-32	EPA 9315	412356		
92492413009	MW-39	EPA 9315	412358		
92492413010	MW-41	EPA 9315	412358		
92492413011	HGWC-120	EPA 9315	412358		
92492413012	FD-01	EPA 9315	412358		
92492413013	HGWC-124	EPA 9315	412352		
92492413014	HGWA-1	EPA 9315	412851		
92492413001	HGWA-122	EPA 9320	412346		
92492413002	HGWA-2	EPA 9320	412346		
92492413003	HGWA-3	EPA 9320	412346		
92492413004	HGWC-125	EPA 9320	412346		
92492413005	HGWC-126	EPA 9320	412346		
92492413006	FB-01	EPA 9320	412346		
92492413007	HGWC-121A	EPA 9320	412346		
92492413008	MW-32	EPA 9320	412346		
92492413009	MW-39	EPA 9320	412347		
92492413010	MW-41	EPA 9320	412347		
92492413011	HGWC-120	EPA 9320	412347		
92492413012	FD-01	EPA 9320	412347		
92492413013	HGWC-124	EPA 9320	412345		
92492413014	HGWA-1	EPA 9320	412653		
92492413001	HGWA-122	Total Radium Calculation	414382		
92492413002	HGWA-2	Total Radium Calculation	414382		
92492413003	HGWA-3	Total Radium Calculation	414382		
92492413004	HGWC-125	Total Radium Calculation	414382		
92492413005	HGWC-126	Total Radium Calculation	414382		
92492413006	FB-01	Total Radium Calculation	414382		
92492413007	HGWC-121A	Total Radium Calculation	414382		
92492413008	MW-32	Total Radium Calculation	414382		
92492413009	MW-39	Total Radium Calculation	414421		
92492413010	MW-41	Total Radium Calculation	414421		
92492413011	HGWC-120	Total Radium Calculation	414421		
92492413012	FD-01	Total Radium Calculation	414421		
92492413013	HGWC-124	Total Radium Calculation	414119		
92492413014	HGWA-1	Total Radium Calculation	414421		

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Sample Condition Upon Receipt

WO#: 92492413

Client Name: GALLOP



Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: _____

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

Proj. Name: _____

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 5.8

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 2/25/2004

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>SW</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
		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)



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: GA Power	Address: Atlanta, GA	Report To: SCS Contacts	Copy To: Geosynthetic Contacts	Attention: Southern Co.	Company Name: Southern Co.
Phone: SCS Contacts	Requested Due Date/TAT: 10 Day	Project Name: Plant Hammond AP-3 SearbyRKG 03	Project Number: GW65581	Address:	Reference: Kevin Herring
Fax:		Purchase Order No.:		Address:	Reference: Kevin Herring
		Requested Analysis Filtered (Y/N)		Address:	Reference: Kevin Herring
				Address:	Reference: Kevin Herring
				Address:	Reference: Kevin Herring

ITEM #	Valid Matrix Codes MATERIAL CODE DROPPED WATER DW WATER WT PROJECT WATER PW PROJECT SOLID PS OIL OI WIRE WP AIR AR OTHER OT TSS T5	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test			Residual Chlorine (Y/N)	pH	
				DATE	TIME			H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Fluoride	App IV Metals 6020/7470*			RAD 226/228
1	HGWA-1	WT G	WT G	8/24	16:52		4												
2	HGWA-2	WT G	WT G				4												
3	HGWA-3	WT G	WT G				4												
4	HGWA-122	WT G	WT G				4												
5	HGWA-120	WT G	WT G				4												
6	HGWA-124	WT G	WT G				4												
7	HGWA-124	WT G	WT G				4												
8	MW-92	WT G	WT G				4												
9	MW-99	WT G	WT G				4												
10	MW-41	WT G	WT G				4												
11																			
12																			

ADDITIONAL COMMENTS

Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.

App. IV Metals-Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mn, Se, Ni

Relinquished by / Affiliation: *Medina Alvarado* Date: *8/25/20* Time: *11:21*

Accepted by / Affiliation: *Medina Alvarado* Date: *8/25/20* Time: *11:25*

SAMPLER NAME AND SIGNATURE *Devin Reeder*

PRINT Name of SAMPLER: *Devin Reeder*

SIGNATURE of SAMPLER: *Devin Reeder*

DATE Signed (MM/DD/YY): *08/24/2020*

Important Note: By signing this form you are accepting Face's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-FALL-Q-020(rev.07.15)-Fdb-2007



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 Required Client Information Company: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: Fax Requested Due Date/TAT: 10 Day		Section B Required Project Information: Report To: SCS Contacts Copy To: Geosyntec Contacts Purchase Order No.: Project Name: Plant Hammond AP-3 ScanvBKG 03 Project Number: GW6581		Section C Invoice Information: Attention: Southern Co. Company Name: Address: Rate Quote Reference: Rate Project Manager: Price Profile #:	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER COR		Site Location STATE: GA		Requested Analyte: Filtered (Y/N)	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATERIALS DOMESTIC WATER WATER WASTE WATER PRODUCT SOLID/SLURRY OIL MILK MILK MILK OTHER TISSUE	MATRIX CODE (see valid codes to list)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test	Requested Analyte: Filtered (Y/N)	Residual Chlorine (Y/N)	pH = 5.17 pH = 7.14 62462413	
					DATE	TIME			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl					NaOH
1	HGWA-1		WT G		8/25	1038		4											
2	HGWA-2		WT G		8/25	0928		4											
3	HGWA-3		WT G		8/25	0928		4											
4	HGWA-122		WT G					4											
5	HGWA-129		WT G					4											
6	HGWA-121		WT G					4											
7	HGWA-124		WT G					4											
8	HGWA-92		WT G					4											
9	HGWA-99		WT G					4											
10	HGWA-44		WT G					4											
11																			
12																			

ADDITIONAL COMMENTS Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.		REINQUISHED BY / AFFILIATION Date: 8/25/15 Time: 1615 Signature: [Signature]		ACCEPTED BY / AFFILIATION Date: 8/25/15 Time: 1615 Signature: [Signature]		SAMPLE CONDITIONS Temp in °C: 46 Received on Ice (Y/N): Y Custody Sealed Cooler (Y/N): Y Samples In tact (Y/N): Y	
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Chad Russo SIGNATURE of SAMPLER: [Signature]		DATE Signed (MM/DD/YY): 8/25/2015		DATE Signed (MM/DD/YY): 8/25/2015		DATE Signed (MM/DD/YY): 8/25/2015	

*App IV Metals=Sn, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Ti

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to rate changes of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-F-06-2007



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: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: _____ Requested Due Date/TAT: 10 Day		Section B Required Project Information Report To: SCS Contacts Copy To: Geosyntec Contacts Project Name: Plant Hammond AP-3 Scar/BKG 03 Project Number: GWM6581		Section C Invoice Information: Attention: Southern Co. Company Name: Address: State: GA City: _____ Zip: _____ Project Manager: Kevin Harting Project Number: _____	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER		Site Location: _____ STATE: GA		Page: 2 of 2	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P OIL OIL WIFE WIF AIR AIR OTHER OTH TSS TSS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives		Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)		
					DATE	TIME							H ₂ SO ₄	HNO ₃				HCl	NaOH
1	HGWC-125		WT G	G	8/25	1151					19	5	2	3	X	X	X	X	
2	HGWC-126		WT G	G	8/25	1155					20	5	2	3	X	X	X	X	
3	FB-01		WT G	G	8/25	1600						5	2	3	X	X	X	X	
4	FB-01		WT G	G								5	2	3	X	X	X	X	
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

ADDITIONAL COMMENTS

Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.

Relinquished By / Affiliation: Chad Russel / Geosyntec Date: 8/25/07 Time: 11:15

Accepted By / Affiliation: Kevin Harting / Southern Co. Date: 8/25/07 Time: 16:15

App. III & IV Metals: Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Pb, U, Hg, Mo, Se, Ti

Signature: Chad Russel Date Signed: 8/25/07

Signature: Kevin Harting Date Signed: 8/25/07

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chad Russel

SIGNATURE of SAMPLER: Chad Russel

DATE Signed (RANDOMLY): 8/25/07

Temp in °C: _____

Received on Ice (Y/N): _____

Custody Sealed Cooler (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 Required Client Information Company: GA Power Address: Atlanta, GA		Section B Required Project Information Report for: SCS Contacts Copy To: Geosynlec Contacts		Section C Invoice Information Attention: Southern Co. Company Name:	
Email To: SCS Contacts Phone: Fax Requested Due Date/TAT: 10 Day		Purchase Order No.: Project Name: Plant Hammond AP-3 SCARBKG 03 Project Number: GW6581		Address: Pace Quote Reference: Kevin Herring Pace Project Manager: Pace Profile #:	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER COR			Site Location STATE: GA		

ITEM #	Section B Required Client Information	Valid Matrix Codes MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Requested Analysis Filtered (Y/N)			Residual Chlorine (Y/N)	pH	
				DATE	TIME			H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Fluoride	App IV Metals 60207470*	RAD 228/228			
1	HQWA-1	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.75
2	HQWA-2	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74
3	HQWA-3	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74
4	HQWA-4	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74
5	HQWA-5	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74
6	HQWA-6	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74
7	HQWA-7	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74
8	HQWA-8	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74
9	HQWA-9	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74
10	HQWA-10	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74
11	HQWA-11	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74
12	HQWA-12	WT G	G	8/21/05	12:40	12.40	4	1	3	3	3	3	3	3	3	3	3	3	3	6.74

ADDITIONAL COMMENTS Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.		REINQUISHED BY / AFFILIATION Pace Analytical		DATE 8/21/05		TIME 12:40		ACCEPTED BY / AFFILIATION Kevin Herring		DATE 8/21/05		TIME 08:05		SAMPLER NAME AND SIGNATURE Aaron Reeder	
App IV Metals-Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se,		Pace Analytical		8/21/05		12:40		Kevin Herring		8/21/05		08:05		Aaron Reeder	

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007



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: GA Power
Address: Atlanta, GA
Phone: _____
Requested Date/Time: 10 Day

Section B Required Project Information:
Report To: SCS Contacts
Copy To: Geosyntec Contacts
Purchase Order No.: _____
Project Name: Plant Hammond AP-3 Scan/BKG 03
Project Number: GW6581

Section C Invoice Information:
Attention: Southern Co.
Company Name: _____
Address: _____
Reference: Kevin Herring
Price Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER CCR

Site Location: _____ STATE: GA

Requested Analysis Filtered (Y/N):

ITEM #	Section D Required Client Information	VALID Matrix Codes DOMESTIC WATER DW WASTE WATER WW PRODUCT P SOLICID SL OIL OL WIFE WP AIR AR OTHER OT TSSOE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	
					DATE	TIME										
1	HGWA-1		WT G							4	1				N	DH =
2	HGWA-2		WT G							4	1				N	DH =
3	HGWA-3		WT G							4	1				N	DH =
4	HGWA-122		WT G							4	1				N	DH =
5	HGWA-120		WT G							4	1				N	DH =
6	HGWA-124		WT G							4	1				N	DH =
7	HGWA-124		WT G							4	1				N	DH =
8	MV-32		WT G							4	1				N	DH =
9	MV-39		WT G							4	1				N	DH =
10	MV-41		WT G							4	1				N	DH =
11																
12																

ADDITIONAL COMMENTS
Please note dry wells. Spine through any wells not sampled and note when the last sample for the event has been taken.

RELINQUISHED BY / AFFILIATION: _____ DATE: 8/14/08 TIME: 1740

ACCEPTED BY / AFFILIATION: _____ DATE: 8/14/08 TIME: 1740

APPROPRIATE SIGNATURES:
 Relinquished by: _____ Date: 8/14/08
 Accepted by: _____ Date: 8/14/08

PRINT NAME AND SIGNATURE
 SAMPLER NAME AND SIGNATURE: _____
 PRINT NAME OF SAMPLER: _____
 SIGNATURE OF SAMPLER: _____
 DATE SIGNED (MM/DD/YY): _____

*App. IV Metals-Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Ni, Tl
 Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.
 FALL-Q-020rev.07, 15-Feb-2007



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 Invoicing Information:	
Company: GA Power	Address: Atlanta, GA	Report To: SCS Contacts	Copy To: Geosynetic Contacts	Attention: Southern Co.	Company Name:
Email To: SCS Contacts	Phone:	Purchase Order No.:	Project Name: Plant Hammond AP-3 Scan/BKG 03	Address:	Project Number: GW6581
Requested Due Date/TAT: 10 Day					
		REGULATORY AGENCY			
		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER			
		<input type="checkbox"/> UST <input type="checkbox"/> RORA <input type="checkbox"/> OTHER COM			
		Site Location			
		STATE: GA			

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE	SCOPE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives							Analysis Test				Residual Chlorine (Y/N)	pH =								
						DATE	TIME	DATE	TIME		Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Y	N	Y			N	Y	N	Y	N			
1	HSWG-123	WT G	WT G	WT G						5																					
2	HSWG-428	WT G	WT G	WT G						2																					
3	EB-01	WT G	WT G	WT G						3																					
4	FD-01	WT G	WT G	WT G						2																					
5										3																					
6										3																					
7										3																					
8										3																					
9										3																					
10										3																					
11										3																					
12										3																					

ADDITIONAL COMMENTS		REIMBURSED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS	
Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.		Sawyer Samner		8/27/20		0805		Sawyer Geosynetic		8/27/20		805		Temp in °C	
App. III & IV Metals-Sb, As, Ba, Be, B, Cd, Ca, Cr, Cu, Pb, U, Hg, Mo, Se, Tl		Sawyer Geosynetic		8/27/20		0826		Sawyer Geosynetic		8/27/20		0826		Received on Ice (Y/N)	
		Pool		8/27/20 12:46				K. McLaughlin		8/27/20		1240		Custody Sealed Cooler (Y/N)	
		Pool		8/27/20 12:46				K. McLaughlin		8/27/20		1240		Samples Intact (Y/N)	
		Pool		8/27/20 12:46				K. McLaughlin		8/27/20		1240			

Important Note: By signing the form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information: Company: GA Power Address: Atlanta, GA	Section B Required Project Information: Report To: SCS Contacts Copy To: Geosyntec Contacts	Section C Invoice Information: Attention: Southern Co. Company Name: Address: Reference: Pace Project Manager: Kevin Herring Pace Profile #:	REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER CCR <input type="checkbox"/> Site Location: GA STATE: GA
Email To: SCS Contacts Phone: <input type="checkbox"/> Fax: <input type="checkbox"/> Requested Due Date/TAT: 10 Day	Purchase Order No.: Project Name: Plant Hammond A-P-3 Scar/BKG 03 Project Number: GW6581	Pace Order: Pace Project Manager: Pace Profile #:	

ITEM #	Valid Matrix Codes MATERIAL: <input type="checkbox"/> DEGRADED WATER DW <input type="checkbox"/> WATER WATER WT <input type="checkbox"/> WATER WATER WT <input type="checkbox"/> PRODUCT P SL <input type="checkbox"/> SOIL/SOLID OL <input type="checkbox"/> OIL <input type="checkbox"/> WP/E WP <input type="checkbox"/> AIR AR <input type="checkbox"/> OTHER OT <input type="checkbox"/> TISSUE TS	Requested Client Information	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 =	pH =	pH =																
					DATE	TIME	DATE	TIME		Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃		Methanol	Other	Fluoride					App IV Metals 6020/7470*	RAD 228/228														
1	HQWA-1	WT G	WT G	G					4	1	3																												
2	HQWA-2	WT G	WT G	G					4	1	3																												
3	HQWA-3	WT G	WT G	G					4	1	3																												
4	HQWA-122	WT G	WT G	G					4	1	3																												
5	HQWA-120	WT G	WT G	G					4	1	3																												
6	HQWA-124	WT G	WT G	G					4	1	3																												
7	HQWA-124	WT G	WT G	G					4	1	3																												
8	MW-32	WT G	WT G	G					4	1	3																												
9	MW-99	WT G	WT G	G					4	1	3																												
10	MW-41	WT G	WT G	G					4	1	3																												
11																																							
12																																							

RELEASING BY / AFFILIATION: *[Signature]* DATE: 8/27/05 TIME: 11:05 AM

ACCEPTED BY / AFFILIATION: *[Signature]* DATE: 8/28/05 TIME: 11:05 AM

ADDITIONAL COMMENTS: *[Handwritten notes]*

Temp in °C: _____ Received on Ice (Y/N): _____ Custody Sealed Cooler (Y/N): _____ Samples Intact (Y/N): _____

PRINT Name of SAMPLER: Chad Russo
SIGNATURE OF SAMPLER: *[Signature]* DATE Signed (MM/DD/YY): 8/27/05

*Important Note By signing this form you are accepting Pace's 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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: GA Power	Address: Atlanta, GA	Report To: SCS Contacts	Copy To: Geosyntec Contacts	Attention: Southern Co.	Company Name:
Email To: SCS Contacts	Phone: Fax	Purchase Order No.:	Project Name: Plant Hammond AP-3 Scan/BKG 03	Address:	State: GA
Requested Due Date/TAT: to Day	Project Number: GW6581	Plant Name: Plant Hammond AP-3 Scan/BKG 03	Requested Analysis Filtered (Y/N)	REGULATORY AGENCY NPDES <input type="checkbox"/> GROUND WAT <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>	Drinking Water <input type="checkbox"/>

ITEM #	Section D Required Chain Information	Valid Matrix Codes MATRIX CODE	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 = 7.02		
				DATE	TIME			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH					Na ₂ S ₂ O ₃	Methanol
1	HQWA-1	WT G	G	8/28	726	19	4	1	3											
2	HQWA-2	WT G	G	8/28	726	19	4	1	3											
3	HQWA-3	WT G	G	8/28	726	19	4	1	3											
4	HQWA-422	WT G	G	8/28	726	19	4	1	3											
5	HQWG-120	WT G	G	8/28	726	19	4	1	3											
6	HQWC-121	WT G	G	8/28	726	19	4	1	3											
7	HQWG-424	WT G	G	8/28	726	19	4	1	3											
8	MMW-32	WT G	G	8/28	726	19	4	1	3											
9	MMW-30	WT G	G	8/28	726	19	4	1	3											
10	MMW-41	WT G	G	8/28	726	19	4	1	3											
11																				
12																				

ADDITIONAL COMMENTS
Please note dry wells, stiles through any wells not sampled, and note when the last sample for the event has been taken.

App IV Metals-Sb, As, Ba, Be, Cd, Cr, Co, Pb, U, Hg, Mn, Se, Tl

Relinquished by / Affiliation: *Tommy Hess* / *Geo* / *4/12/20* / *10:51*
 Accepted by / Affiliation: *Kevin Herring* / *Southern Co.* / *8/28/20* / *10:57*

Temp in °C: *55.5*
 Received on Ice (Y/N): *Y*
 Custody Sealed Cooler (Y/N): *N*
 Samples Intact (Y/N): *Y*

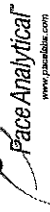
DATE Signed (MM/DD/YY): *08/28/20*

Signature of Sampler: *Tommy Hess*

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev 07, 15-Feb-2007

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#	Y or N?	N
Count Date:		9/14/2020		LCS#55960
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		
LOS/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 LCS/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 Duplicate Result (pCi/L, g, F):	0.626	
Sample Result Counting Uncertainty (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):			
Sample Matrix Spike Duplicate Result:			
Sample 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:			

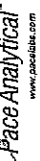
Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Sample Matrix Spike Duplicate Result:	
Sample Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
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:	

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

Comments:

Done 9/11/2020
WAM 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		LCSD (Y or N)?	N
		LCS55960	LCS55960
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/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 LCS/LCSD in the space below.	
Sample I.D.:	92493016013	92493016013	
Duplicate Sample I.D.:	92493016013DUP	6.412	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.759	5.852	
Sample Duplicate Result (pCi/L, g, F):	0.718	0.718	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	See Below #		
Are sample and/or duplicate results below RL?	1.050		
Duplicate Numerical Performance Indicator:	9.13%		
Duplicate RPD:	N/A		
Duplicate Status vs Numerical Indicator:	Pass		
Duplicate Status vs RPD:	25%		
% RPD Limit:			

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 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. 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:

9/11/2020
9/11/2020
9/11/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 9/11/2020
Worklist: 56031
Matrix: DW

Method Blank Assessment	
MB Sample ID	1996985
MB concentration:	0.205
M/B Counting Uncertainty:	0.162
MB MDC:	0.296
MB Numerical Performance Indicator:	2.48
MB Status vs Numerical Indicator:	N/A
MB Status vs MDC:	Pass

Laboratory Control Sample Assessment		LCS#	(Y or N)?	Y
Count Date:		9/11/2020		LCS#56031
Spike I.D.:		19-033		19-033
Decay Corrected Spike Concentration (pCi/mL):		24.045		24.045
Volume Used (mL):		0.10		0.10
Aliquot Volume (L, g, F):		0.500		0.500
Target Conc. (pCi/L, g, F):		4.759		4.807
Uncertainty (Calculated):		0.057		0.058
Result (pCi/L, g, F):		4.314		4.231
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.361		0.346
Numerical Performance Indicator:		-2.39		-3.22
Percent Recovery:		90.65%		88.02%
Status vs Numerical Indicator:		N/A		N/A
Upper % Recovery Limits:		Pass		Pass
Lower % Recovery Limits:		125%		125%
		75%		75%

Duplicate Sample Assessment		LCS#	(Y or N)?	Y
Sample I.D.:		LCS#56031		LCS#56031
Duplicate Sample I.D.:		LCS#56031		LCS#56031
Sample Result (pCi/L, g, F):		4.314		4.314
Sample Duplicate Result (pCi/L, g, F):		0.361		0.361
Sample Duplicate Counting Uncertainty (pCi/L, g, F):		4.231		4.231
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):		0.346		0.346
Are sample and/or duplicate results below RL?		NO		NO
Duplicate Numerical Performance Indicator:		0.325		0.325
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:		2.94%		2.94%
Duplicate Status vs Numerical Indicator:		N/A		N/A
Duplicate Status vs RPD:		Pass		Pass
% RPD Limit:		25%		25%

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

Comments:

Handwritten: Ounces 9/11/2020
LAM 9/14/2020

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:			
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):			
Sample Matrix Spike Duplicate Result:			
Sample Matrix Spike Duplicate 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 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:	

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 9/11/2020
Worklist: 55961
Matrix: DW

Method Blank Assessment	
MB Sample ID	1994517
MB concentration:	0.066
M/B Counting Uncertainty:	0.118
MB MDC:	0.278
MB Numerical Performance Indicator:	0.92
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
		LCSD55961
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):	0.522	
Target Conc. (pCi/L, g, F):	4.609	
Uncertainty (Calculated):	0.065	
Result (pCi/L, g, F):	4.395	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.589	
Numerical Performance Indicator:	-0.71	
Percent Recovery:	95.35%	
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.:	92492413011
Duplicate Sample I.D.:	92492413011DUP
Sample Result (pCi/L, g, F):	0.357
Sample Result Counting Uncertainty (pCi/L, g, F):	0.211
Sample Duplicate Result (pCi/L, g, F):	0.265
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.184
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	0.647
Duplicate RPD:	29.70%
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 dup to unacceptable precision: N/A
LAM 9/14/2020

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 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: MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

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LAM 9/14/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 9/11/2020
Worklist: 55961
Matrix: DW

Method Blank Assessment	
MB Sample ID	1994517
MB concentration:	0.056
M/B Counting Uncertainty:	0.118
MB MDC:	0.278
MB Numerical Performance Indicator:	0.92
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSID (Y or N)?	
	Y	N
Count Date:	9/14/2020	LCSID55961
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24,044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.522	
Target Conc. (pCi/L, g, F):	4.609	
Uncertainty (Calculated):	0.055	
Result (pCi/L, g, F):	4.385	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.589	
Numerical Performance Indicator:	-0.71	
Percent Recovery:	95.35%	
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.:	92492413010
Duplicate Sample I.D.:	92492413010DUP
Sample Result (pCi/L, g, F):	0.313
Sample Result Counting Uncertainty (pCi/L, g, F):	0.192
Sample Duplicate Result (pCi/L, g, F):	0.186
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.181
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	0.939
Duplicate RPD:	50.74%
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:

~~Sample must be re-assayed due to unacceptable precision.~~ N/A

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: Sample Matrix Spike Duplicate Result: 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 Duplicate Result: Sample Matrix Spike Duplicate Result: Duplicate Numerical Performance Indicator: MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

never performed
9/14/2020

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	LCSD (Y or N)?		N
	LCSS5959	LCSD5959	LCSD5959
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): LCSD Counting Uncertainty (pCi/L, g, F): Numerical Performance Indicator: Percent Recovery: Status vs Numerical Indicator: Upper % Recovery Limits: Lower % Recovery Limits:	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		
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.
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 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%

- 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.

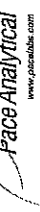
***Batch must be re-prepped due to unacceptable precision: N/A Wm 9/11/2020

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.:		
M/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:

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: 58959
Matrix: DW

Method Blank Assessment	
MB Sample ID	1994514
MB concentration:	0.206
MB 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	LCSD (Y or N)?	
	LCS58959	N LCSD58959
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):	-0.91	
Numerical Performance Indicator:	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 LCS/LCSD in the space below.
Sample I.D.:	92492559007
Duplicate Sample I.D.:	92492559007/DUP
Sample Result (pCi/L, g, F):	0.269
Sample Result Counting Uncertainty (pCi/L, g, F):	0.118
Sample Duplicate Result (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: 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 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:

AM9/11/2020

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:	0.699
MB Numerical Performance Indicator:	3.70
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS55955	Y
Count Date:	9/16/2020	LCS55955
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):	0.811	0.800
Target Conc. (pCi/L, g, F):	4.730	4.796
Uncertainty (Calculated):	0.232	0.235
Result (pCi/L, g, F):	5.530	6.376
LCS/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.:	LCS55955
Duplicate Sample I.D.:	LCS55955
Sample Result (pCi/L, g, F):	5.530
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.311
Sample Duplicate Result (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):		
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:		
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:
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
Duplicate 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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Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 9/14/2020
Worklist: 56010
Matrix: WT

Method Blank Assessment	
MB Sample ID	1995813
MB concentration:	-0.079
MB 2 Sigma CSU:	0.359
MB MDC:	0.855
MB Numerical Performance Indicator:	-0.43
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS56010	Y
Count Date:	9/16/2020	LCS56010
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.384	38.384
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.804	0.804
Target Conc. (pCi/L, g, F):	4.737	4.773
Uncertainty (Calculated):	0.232	0.234
Result (pCi/L, g, F):	5.219	5.008
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.198	1.173
Numerical Performance Indicator:	0.77	0.38
Percent Recovery:	110.18%	104.92%
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.:	LCS56010
Duplicate Sample I.D.:	LCS56010
Sample Result (pCi/L, g, F):	5.219
Sample Duplicate Result (pCi/L, g, F):	1.198
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	5.008
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.173
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	0.247
Duplicate Numerical Performance Indicator:	4.89%
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:

207
9-17-20

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

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

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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: 55956
Matrix: WT

Method Blank Assessment	
MB Sample ID	1994502
MB concentration:	0.314
M/B 2 Sigma CSU:	0.487
MB MDC:	1.054
MB Numerical Performance Indicator:	1.26
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS55956	LCSD55956
Count Date:	9/16/2020	9/16/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.382	38.382
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.814	0.814
Target Conc. (pCi/L, g, F):	4.715	4.715
Uncertainty (Calculated):	0.231	0.231
Result (pCi/L, g, F):	5.086	5.348
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.251	1.293
Numerical Performance Indicator:	0.57	0.94
Percent Recovery:	107.78%	113.43%
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	LCSD (Y or N)?	Y
Sample I.D.:	LCS55956	9/16/2020
Duplicate Sample I.D.:	LCS55956	9/16/2020
Sample Result (pCi/L, g, F):	5.086	20-030
Sample Duplicate Result (pCi/L, g, F):	1.251	38.382
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	5.348	0.10
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.293	0.814
Are sample and/or duplicate results below RL?	NO	4.715
Duplicate Numerical Performance Indicator:	-0.285	0.231
Duplicate Percent Recoveries:	5.11%	0.231
Duplicate Status vs Numerical Indicator:	Pass	5.348
Duplicate Status vs RPD:	Pass	1.293
% RPD Limit:	36%	0.94

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

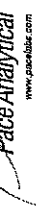
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

9-17-20

Signature

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	1994489
MB concentration:	0.357
MB 2 Sigma CSU:	0.356
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):	0.829	0.829
Target Conc. (pCi/L, g, F):	4.632	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:	Pass	N/A
Upper % Recovery Limits:	135%	Pass
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%

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):	
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:

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October 19, 2020

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

RE: Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 16, 2020 and September 29, 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
- Pace Analytical Services - Peachtree Corners, GA

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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

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

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, 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: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92495904001	HGWA-1	Water	09/15/20 14:01	09/16/20 11:14
92495904002	HGWA-2	Water	09/15/20 10:58	09/16/20 11:14
92495904003	HGWA-3	Water	09/15/20 11:45	09/16/20 11:14
92495904004	HGWA-122	Water	09/15/20 15:41	09/16/20 11:14
92495904005	HGWA-43D	Water	09/16/20 11:58	09/17/20 09:45
92495904006	HGWA-44D	Water	09/16/20 15:18	09/17/20 09:45
92495904007	HGWC-126	Water	09/18/20 15:39	09/21/20 09:25
92495904008	FB-03	Water	09/18/20 16:50	09/21/20 09:25
92495904009	HGWC-120	Water	09/21/20 13:48	09/22/20 09:25
92495904010	FD-03	Water	09/21/20 00:00	09/22/20 09:25
92495904011	HGWC-125	Water	09/21/20 12:07	09/22/20 09:25
92495904012	HGWA-45D	Water	09/25/20 13:50	09/28/20 09:40
92495904013	MW-46D	Water	09/25/20 11:10	09/28/20 09:40
92495904014	HGWC-121A	Water	09/28/20 16:04	09/29/20 08:55
92495904015	HGWC-124	Water	09/28/20 18:00	09/29/20 08:55
92495904016	MW-32	Water	09/28/20 15:44	09/29/20 08:55
92495904017	MW-39	Water	09/28/20 17:27	09/29/20 08:55
92495904018	MW-41	Water	09/28/20 19:05	09/29/20 08:55

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92495904001	HGWA-1	EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	ALW	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92495904002	HGWA-2	EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	ALW	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92495904003	HGWA-3	EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	ALW	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92495904004	HGWA-122	EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92495904005	HGWA-43D	EPA 6010D	DRB	6
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904006	HGWA-44D	EPA 300.0 Rev 2.1 1993	BRJ	1
		EPA 6010D	DRB	6
		EPA 6020B	CW1	13
		EPA 7470A	VB	1
		SM 2450C-2011	ALW	1
		SM 2320B-2011	ECH	3
	SM 4500-S2D-2011	NAL	1	

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92495904007	HGWC-126	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	KH	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904008	FB-03	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	6
		EPA 6020B	KH	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904009	HGWC-120	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904010	FD-03	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904011	HGWC-125	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904012	HGWA-45D	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	6
		EPA 6020B	KH	13
		EPA 7470A	VB	1
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92495904013	MW-46D	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	KH	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904014	HGWC-121A	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904015	HGWC-124	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904016	MW-32	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904017	MW-39	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
92495904018	MW-41	EPA 300.0 Rev 2.1 1993	BRJ	3
		EPA 6010D	DRB	6
		EPA 6020B	CW1	9
		SM 2450C-2011	AW1	1
		SM 2320B-2011	ECH	3
		SM 4500-S2D-2011	NAL	1
		EPA 300.0 Rev 2.1 1993	BRJ	3

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Lab ID	Sample ID	Method	Analysts	Analytes Reported
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PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte
PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495904001	HGWA-1					
	pH	7.15	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	103	mg/L	1.0	09/23/20 17:49	
EPA 6010D	Iron	0.087	mg/L	0.040	09/23/20 17:49	
EPA 6010D	Magnesium	4.3	mg/L	0.050	09/23/20 17:49	
EPA 6010D	Manganese	0.18	mg/L	0.040	09/23/20 17:49	
EPA 6010D	Potassium	0.34	mg/L	0.20	09/23/20 17:49	B
EPA 6010D	Sodium	21.1	mg/L	1.0	09/23/20 17:49	
EPA 6020B	Barium	0.035	mg/L	0.010	09/23/20 17:15	
EPA 6020B	Boron	0.017J	mg/L	0.10	09/23/20 17:15	
EPA 6020B	Lithium	0.00087J	mg/L	0.030	09/23/20 17:15	
SM 2450C-2011	Total Dissolved Solids	265	mg/L	10.0	09/17/20 15:18	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	307	mg/L	5.0	09/24/20 19:36	
SM 2320B-2011	Alkalinity, Total as CaCO3	307	mg/L	5.0	09/24/20 19:36	
EPA 300.0 Rev 2.1 1993	Chloride	13.4	mg/L	1.0	09/18/20 21:31	
EPA 300.0 Rev 2.1 1993	Fluoride	0.082J	mg/L	0.10	09/18/20 21:31	
EPA 300.0 Rev 2.1 1993	Sulfate	47.3	mg/L	1.0	09/18/20 21:31	
92495904002	HGWA-2					
	pH	5.22	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	21.1	mg/L	1.0	09/23/20 17:53	
EPA 6010D	Iron	0.78	mg/L	0.040	09/23/20 17:53	
EPA 6010D	Magnesium	2.5	mg/L	0.050	09/23/20 17:53	
EPA 6010D	Manganese	0.61	mg/L	0.040	09/23/20 17:53	
EPA 6010D	Potassium	0.89	mg/L	0.20	09/23/20 17:53	B
EPA 6010D	Sodium	7.4	mg/L	1.0	09/23/20 17:53	
EPA 6020B	Barium	0.12	mg/L	0.010	09/23/20 17:21	
EPA 6020B	Beryllium	0.00013J	mg/L	0.0030	09/23/20 17:21	
EPA 6020B	Boron	0.044J	mg/L	0.10	09/23/20 17:21	
EPA 6020B	Cobalt	0.021	mg/L	0.0050	09/23/20 17:21	
EPA 6020B	Lead	0.000080J	mg/L	0.0050	09/23/20 17:21	
EPA 6020B	Lithium	0.0015J	mg/L	0.030	09/23/20 17:21	
SM 2450C-2011	Total Dissolved Solids	124	mg/L	10.0	09/17/20 15:18	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	26.1	mg/L	5.0	09/24/20 13:36	
SM 2320B-2011	Alkalinity, Total as CaCO3	26.1	mg/L	5.0	09/24/20 13:36	
EPA 300.0 Rev 2.1 1993	Chloride	5.0	mg/L	1.0	09/18/20 21:46	
EPA 300.0 Rev 2.1 1993	Sulfate	51.5	mg/L	1.0	09/18/20 21:46	
92495904003	HGWA-3					
	pH	7.29	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	73.1	mg/L	1.0	09/23/20 17:57	
EPA 6010D	Iron	0.26	mg/L	0.040	09/23/20 17:57	
EPA 6010D	Magnesium	4.6	mg/L	0.050	09/23/20 17:57	
EPA 6010D	Manganese	0.22	mg/L	0.040	09/23/20 17:57	
EPA 6010D	Potassium	0.46	mg/L	0.20	09/23/20 17:57	B
EPA 6010D	Sodium	4.9	mg/L	1.0	09/23/20 17:57	
EPA 6020B	Barium	0.12	mg/L	0.010	09/23/20 17:27	
EPA 6020B	Boron	0.0071J	mg/L	0.10	09/23/20 17:27	
EPA 6020B	Lead	0.000042J	mg/L	0.0050	09/23/20 17:27	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495904003	HGWA-3					
EPA 6020B	Lithium	0.0026J	mg/L	0.030	09/23/20 17:27	
SM 2450C-2011	Total Dissolved Solids	258	mg/L	10.0	09/17/20 15:19	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	187	mg/L	5.0	09/24/20 13:43	
SM 2320B-2011	Alkalinity, Total as CaCO3	187	mg/L	5.0	09/24/20 13:43	
EPA 300.0 Rev 2.1 1993	Chloride	6.0	mg/L	1.0	09/18/20 22:01	
EPA 300.0 Rev 2.1 1993	Sulfate	44.7	mg/L	1.0	09/18/20 22:01	
92495904004	HGWA-122					
	pH	6.68	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	75.8	mg/L	1.0	09/25/20 18:33	M1
EPA 6010D	Iron	0.031J	mg/L	0.040	09/25/20 18:33	
EPA 6010D	Magnesium	5.6	mg/L	0.050	09/25/20 18:33	
EPA 6010D	Manganese	0.0055J	mg/L	0.040	09/25/20 18:33	
EPA 6010D	Potassium	0.90	mg/L	0.20	09/25/20 18:33	
EPA 6010D	Sodium	7.1	mg/L	1.0	09/25/20 18:33	
EPA 6020B	Antimony	0.0010J	mg/L	0.0030	09/23/20 19:07	
EPA 6020B	Barium	0.039	mg/L	0.010	09/23/20 19:07	
EPA 6020B	Boron	0.22	mg/L	0.10	09/23/20 19:07	
EPA 6020B	Chromium	0.00067J	mg/L	0.010	09/23/20 19:07	
EPA 6020B	Lead	0.000043J	mg/L	0.0050	09/23/20 19:07	
EPA 6020B	Molybdenum	0.0045J	mg/L	0.010	09/23/20 19:07	
SM 2450C-2011	Total Dissolved Solids	267	mg/L	10.0	09/17/20 15:19	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	202	mg/L	5.0	09/24/20 14:52	
SM 2320B-2011	Alkalinity, Total as CaCO3	202	mg/L	5.0	09/24/20 14:52	
EPA 300.0 Rev 2.1 1993	Chloride	3.6	mg/L	1.0	09/18/20 23:45	
EPA 300.0 Rev 2.1 1993	Fluoride	0.096J	mg/L	0.10	09/18/20 23:45	
EPA 300.0 Rev 2.1 1993	Sulfate	41.4	mg/L	1.0	09/18/20 23:45	
92495904005	HGWA-43D					
	pH	7.52	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	56.0	mg/L	1.0	09/23/20 18:49	
EPA 6010D	Iron	0.020J	mg/L	0.040	09/23/20 18:49	
EPA 6010D	Magnesium	18.3	mg/L	0.050	09/23/20 18:49	
EPA 6010D	Manganese	0.010J	mg/L	0.040	09/23/20 18:49	
EPA 6010D	Potassium	0.97	mg/L	0.20	09/23/20 18:49	B
EPA 6010D	Sodium	14.0	mg/L	1.0	09/23/20 18:49	
EPA 6020B	Antimony	0.00051J	mg/L	0.0030	09/23/20 18:54	
EPA 6020B	Barium	0.26	mg/L	0.010	09/23/20 18:54	
EPA 6020B	Boron	0.061J	mg/L	0.10	09/23/20 18:54	
EPA 6020B	Lead	0.000050J	mg/L	0.0050	09/23/20 18:54	
EPA 6020B	Lithium	0.0018J	mg/L	0.030	09/23/20 18:54	
EPA 6020B	Molybdenum	0.0044J	mg/L	0.010	09/23/20 18:54	
SM 2450C-2011	Total Dissolved Solids	272	mg/L	10.0	09/17/20 15:18	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	251	mg/L	5.0	09/28/20 15:11	
SM 2320B-2011	Alkalinity, Total as CaCO3	251	mg/L	5.0	09/28/20 15:11	
EPA 300.0 Rev 2.1 1993	Fluoride	0.058J	mg/L	0.10	09/19/20 21:21	
92495904006	HGWA-44D					
	pH	7.83	Std. Units		09/29/20 14:01	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495904006	HGWA-44D					
EPA 6010D	Calcium	30.0	mg/L	1.0	09/23/20 18:53	
EPA 6010D	Iron	0.42	mg/L	0.040	09/23/20 18:53	
EPA 6010D	Magnesium	15.1	mg/L	0.050	09/23/20 18:53	
EPA 6010D	Manganese	0.020J	mg/L	0.040	09/23/20 18:53	
EPA 6010D	Potassium	3.2	mg/L	0.20	09/23/20 18:53	
EPA 6010D	Sodium	50.3	mg/L	1.0	09/23/20 18:53	
EPA 6020B	Antimony	0.00049J	mg/L	0.0030	09/23/20 19:00	
EPA 6020B	Barium	0.24	mg/L	0.010	09/23/20 19:00	
EPA 6020B	Boron	0.23	mg/L	0.10	09/23/20 19:00	
EPA 6020B	Chromium	0.0012J	mg/L	0.010	09/23/20 19:00	
EPA 6020B	Lead	0.00021J	mg/L	0.0050	09/23/20 19:00	
EPA 6020B	Lithium	0.014J	mg/L	0.030	09/23/20 19:00	
EPA 6020B	Molybdenum	0.0019J	mg/L	0.010	09/23/20 19:00	
SM 2450C-2011	Total Dissolved Solids	270	mg/L	10.0	09/17/20 15:18	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	294	mg/L	5.0	09/28/20 15:19	
SM 2320B-2011	Alkalinity, Total as CaCO3	294	mg/L	5.0	09/28/20 15:19	
SM 4500-S2D-2011	Sulfide	0.11	mg/L	0.10	09/22/20 14:17	
EPA 300.0 Rev 2.1 1993	Chloride	4.1	mg/L	1.0	09/19/20 21:36	
EPA 300.0 Rev 2.1 1993	Fluoride	0.22	mg/L	0.10	09/19/20 21:36	
EPA 300.0 Rev 2.1 1993	Sulfate	43.0	mg/L	1.0	09/19/20 21:36	
92495904007	HGWC-126					
	pH	6.97	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	119	mg/L	1.0	09/25/20 20:19	
EPA 6010D	Iron	1.4	mg/L	0.040	09/25/20 20:19	
EPA 6010D	Magnesium	22.0	mg/L	0.050	09/25/20 20:19	
EPA 6010D	Manganese	0.15	mg/L	0.040	09/25/20 20:19	
EPA 6010D	Potassium	0.91	mg/L	0.20	09/25/20 20:19	
EPA 6010D	Sodium	28.5	mg/L	1.0	09/25/20 20:19	
EPA 6020B	Barium	0.21	mg/L	0.010	09/25/20 19:45	
EPA 6020B	Boron	0.041J	mg/L	0.10	09/25/20 19:45	
EPA 6020B	Lithium	0.0035J	mg/L	0.030	09/25/20 19:45	
SM 2450C-2011	Total Dissolved Solids	452	mg/L	20.0	09/23/20 13:16	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	451	mg/L	5.0	09/30/20 20:45	
SM 2320B-2011	Alkalinity, Total as CaCO3	451	mg/L	5.0	09/30/20 20:45	
SM 4500-S2D-2011	Sulfide	0.068J	mg/L	0.10	09/22/20 14:48	
EPA 300.0 Rev 2.1 1993	Chloride	8.4	mg/L	1.0	09/24/20 10:20	
EPA 300.0 Rev 2.1 1993	Fluoride	0.43	mg/L	0.10	09/24/20 10:20	
EPA 300.0 Rev 2.1 1993	Sulfate	62.7	mg/L	1.0	09/24/20 10:20	
92495904008	FB-03					
EPA 6010D	Potassium	0.062J	mg/L	0.20	09/25/20 20:23	
EPA 6020B	Boron	0.011J	mg/L	0.10	09/25/20 19:50	
92495904009	HGWC-120					
	pH	6.98	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	152	mg/L	1.0	09/25/20 21:50	
EPA 6010D	Iron	0.39	mg/L	0.040	09/25/20 21:50	
EPA 6010D	Magnesium	19.9	mg/L	0.050	09/25/20 21:50	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495904009	HGWC-120					
EPA 6010D	Manganese	1.3	mg/L	0.040	09/25/20 21:50	
EPA 6010D	Potassium	7.4	mg/L	0.20	09/25/20 21:50	
EPA 6010D	Sodium	9.9	mg/L	1.0	09/25/20 21:50	
EPA 6020B	Barium	0.046	mg/L	0.010	09/30/20 18:57	
EPA 6020B	Boron	0.93	mg/L	0.10	09/30/20 18:57	
EPA 6020B	Chromium	0.00065J	mg/L	0.010	09/30/20 18:57	
EPA 6020B	Cobalt	0.0041J	mg/L	0.0050	09/30/20 18:57	
EPA 6020B	Lithium	0.023J	mg/L	0.030	09/30/20 18:57	
EPA 6020B	Molybdenum	0.043	mg/L	0.010	09/30/20 18:57	
SM 2450C-2011	Total Dissolved Solids	272	mg/L	10.0	09/24/20 10:28	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	599	mg/L	5.0	09/30/20 18:44	
SM 2320B-2011	Alkalinity, Total as CaCO3	599	mg/L	5.0	09/30/20 18:44	
EPA 300.0 Rev 2.1 1993	Chloride	2.4	mg/L	1.0	09/24/20 19:43	
EPA 300.0 Rev 2.1 1993	Fluoride	0.33	mg/L	0.10	09/24/20 19:43	
EPA 300.0 Rev 2.1 1993	Sulfate	225	mg/L	3.0	09/25/20 13:37	
92495904010	FD-03					
EPA 6010D	Calcium	156	mg/L	1.0	09/25/20 21:55	
EPA 6010D	Iron	0.40	mg/L	0.040	09/25/20 21:55	
EPA 6010D	Magnesium	20.4	mg/L	0.050	09/25/20 21:55	
EPA 6010D	Manganese	1.4	mg/L	0.040	09/25/20 21:55	
EPA 6010D	Potassium	7.6	mg/L	0.20	09/25/20 21:55	
EPA 6010D	Sodium	10.2	mg/L	1.0	09/25/20 21:55	
EPA 6020B	Barium	0.047	mg/L	0.010	09/30/20 19:03	
EPA 6020B	Boron	0.92	mg/L	0.10	09/30/20 19:03	
EPA 6020B	Cobalt	0.0041J	mg/L	0.0050	09/30/20 19:03	
EPA 6020B	Lithium	0.023J	mg/L	0.030	09/30/20 19:03	
EPA 6020B	Molybdenum	0.044	mg/L	0.010	09/30/20 19:03	
SM 2450C-2011	Total Dissolved Solids	270	mg/L	10.0	09/24/20 10:28	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	311	mg/L	5.0	10/01/20 16:22	
SM 2320B-2011	Alkalinity, Total as CaCO3	311	mg/L	5.0	10/01/20 16:22	
EPA 300.0 Rev 2.1 1993	Chloride	2.4	mg/L	1.0	09/24/20 19:58	
EPA 300.0 Rev 2.1 1993	Fluoride	0.36	mg/L	0.10	09/24/20 19:58	
EPA 300.0 Rev 2.1 1993	Sulfate	226	mg/L	3.0	09/25/20 13:51	
92495904011	HGWC-125					
	pH	6.22	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	155	mg/L	1.0	09/25/20 21:59	
EPA 6010D	Iron	0.13	mg/L	0.040	09/25/20 21:59	
EPA 6010D	Magnesium	24.3	mg/L	0.050	09/25/20 21:59	
EPA 6010D	Manganese	2.3	mg/L	0.040	09/25/20 21:59	
EPA 6010D	Potassium	3.8	mg/L	0.20	09/25/20 21:59	
EPA 6010D	Sodium	22.0	mg/L	1.0	09/25/20 21:59	
EPA 6020B	Barium	0.042	mg/L	0.010	09/30/20 19:09	
EPA 6020B	Boron	1.4	mg/L	0.10	09/30/20 19:09	
EPA 6020B	Cobalt	0.012	mg/L	0.0050	09/30/20 19:09	
EPA 6020B	Lithium	0.0038J	mg/L	0.030	09/30/20 19:09	
SM 2450C-2011	Total Dissolved Solids	956	mg/L	20.0	09/24/20 10:28	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495904011	HGWC-125					
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	205	mg/L	5.0	09/30/20 19:13	
SM 2320B-2011	Alkalinity, Total as CaCO3	205	mg/L	5.0	09/30/20 19:13	
EPA 300.0 Rev 2.1 1993	Chloride	12.1	mg/L	1.0	09/24/20 20:12	
EPA 300.0 Rev 2.1 1993	Fluoride	0.11	mg/L	0.10	09/24/20 20:12	
EPA 300.0 Rev 2.1 1993	Sulfate	352	mg/L	5.0	09/25/20 14:05	
92495904012	HGWA-45D					
	Performed by	CUSTOME			09/29/20 14:01	
		R				
	pH	7.57	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	56.8	mg/L	1.0	10/05/20 19:27	
EPA 6010D	Iron	0.48	mg/L	0.040	10/05/20 19:27	
EPA 6010D	Magnesium	19.4	mg/L	0.050	10/05/20 19:27	
EPA 6010D	Manganese	0.053	mg/L	0.040	10/05/20 19:27	
EPA 6010D	Potassium	2.1	mg/L	0.20	10/05/20 19:27	
EPA 6010D	Sodium	19.0	mg/L	1.0	10/05/20 19:27	
EPA 6020B	Barium	0.49	mg/L	0.010	10/06/20 19:05	
EPA 6020B	Boron	0.16	mg/L	0.10	10/06/20 19:05	
EPA 6020B	Lithium	0.0049J	mg/L	0.030	10/06/20 19:05	
EPA 6020B	Molybdenum	0.0014J	mg/L	0.010	10/06/20 19:05	
SM 2450C-2011	Total Dissolved Solids	263	mg/L	10.0	10/01/20 15:25	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	272	mg/L	5.0	10/08/20 22:15	
SM 2320B-2011	Alkalinity, Total as CaCO3	272	mg/L	5.0	10/08/20 22:15	
SM 4500-S2D-2011	Sulfide	0.68	mg/L	0.10	09/29/20 13:52	
EPA 300.0 Rev 2.1 1993	Chloride	3.6	mg/L	1.0	10/01/20 09:40	
EPA 300.0 Rev 2.1 1993	Fluoride	0.21	mg/L	0.10	10/01/20 09:40	
EPA 300.0 Rev 2.1 1993	Sulfate	6.8	mg/L	1.0	10/01/20 09:40	
92495904013	MW-46D					
	Performed by	CUSTOME			09/29/20 14:01	
		R				
	pH	7.56	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	78.3	mg/L	1.0	10/05/20 19:32	
EPA 6010D	Iron	0.42	mg/L	0.040	10/05/20 19:32	
EPA 6010D	Magnesium	16.5	mg/L	0.050	10/05/20 19:32	
EPA 6010D	Manganese	0.31	mg/L	0.040	10/05/20 19:32	
EPA 6010D	Potassium	3.8	mg/L	0.20	10/05/20 19:32	
EPA 6010D	Sodium	53.6	mg/L	1.0	10/05/20 19:32	
EPA 6020B	Barium	0.040	mg/L	0.010	10/06/20 19:11	
EPA 6020B	Boron	0.51	mg/L	0.10	10/06/20 19:11	
EPA 6020B	Chromium	0.00075J	mg/L	0.010	10/06/20 19:11	
EPA 6020B	Cobalt	0.00041J	mg/L	0.0050	10/06/20 19:11	
EPA 6020B	Lead	0.000048J	mg/L	0.0050	10/06/20 19:11	
EPA 6020B	Lithium	0.015J	mg/L	0.030	10/06/20 19:11	
EPA 6020B	Molybdenum	0.027	mg/L	0.010	10/06/20 19:11	
SM 2450C-2011	Total Dissolved Solids	449	mg/L	10.0	10/01/20 15:25	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	238	mg/L	5.0	10/08/20 22:23	
SM 2320B-2011	Alkalinity, Total as CaCO3	238	mg/L	5.0	10/08/20 22:23	
SM 4500-S2D-2011	Sulfide	0.30	mg/L	0.10	09/29/20 13:53	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495904013	MW-46D					
EPA 300.0 Rev 2.1 1993	Chloride	3.7	mg/L	1.0	10/01/20 09:55	
EPA 300.0 Rev 2.1 1993	Fluoride	0.68	mg/L	0.10	10/01/20 09:55	
EPA 300.0 Rev 2.1 1993	Sulfate	149	mg/L	3.0	10/01/20 18:07	
92495904014	HGWC-121A					
	Performed by	CUSTOMER			09/29/20 14:01	
	pH	6.93	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	167	mg/L	1.0	10/05/20 20:03	
EPA 6010D	Iron	0.044	mg/L	0.040	10/05/20 20:03	
EPA 6010D	Magnesium	23.6	mg/L	0.050	10/05/20 20:03	
EPA 6010D	Manganese	0.68	mg/L	0.040	10/05/20 20:03	
EPA 6010D	Potassium	1.2	mg/L	0.20	10/05/20 20:03	
EPA 6010D	Sodium	35.3	mg/L	1.0	10/05/20 20:03	
EPA 6020B	Barium	0.056	mg/L	0.010	10/05/20 19:54	
EPA 6020B	Boron	2.3	mg/L	0.50	10/07/20 11:12	
EPA 6020B	Lithium	0.0076J	mg/L	0.030	10/05/20 19:54	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	376	mg/L	5.0	10/09/20 11:39	
SM 2320B-2011	Alkalinity, Total as CaCO3	376	mg/L	5.0	10/09/20 11:39	
EPA 300.0 Rev 2.1 1993	Chloride	23.2	mg/L	1.0	10/01/20 10:10	
EPA 300.0 Rev 2.1 1993	Fluoride	0.15	mg/L	0.10	10/01/20 10:10	
EPA 300.0 Rev 2.1 1993	Sulfate	182	mg/L	4.0	10/01/20 18:22	
92495904015	HGWC-124					
	Performed by	CUSTOMER			09/29/20 14:01	
	pH	7.27	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	107	mg/L	1.0	10/05/20 20:07	
EPA 6010D	Iron	0.48	mg/L	0.040	10/05/20 20:07	
EPA 6010D	Magnesium	9.6	mg/L	0.050	10/05/20 20:07	
EPA 6010D	Manganese	0.24	mg/L	0.040	10/05/20 20:07	
EPA 6010D	Potassium	0.94	mg/L	0.20	10/05/20 20:07	
EPA 6010D	Sodium	5.6	mg/L	1.0	10/05/20 20:07	
EPA 6020B	Barium	0.071	mg/L	0.010	10/05/20 20:00	
EPA 6020B	Boron	0.43	mg/L	0.10	10/07/20 11:17	
EPA 6020B	Lead	0.000075J	mg/L	0.0050	10/05/20 20:00	
EPA 6020B	Lithium	0.0011J	mg/L	0.030	10/05/20 20:00	
EPA 6020B	Molybdenum	0.00090J	mg/L	0.010	10/05/20 20:00	
SM 2450C-2011	Total Dissolved Solids	176	mg/L	10.0	10/01/20 15:27	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	240	mg/L	5.0	10/09/20 11:51	
SM 2320B-2011	Alkalinity, Total as CaCO3	240	mg/L	5.0	10/09/20 11:51	
EPA 300.0 Rev 2.1 1993	Chloride	2.5	mg/L	1.0	10/01/20 10:25	
EPA 300.0 Rev 2.1 1993	Sulfate	86.2	mg/L	1.0	10/01/20 10:25	
92495904016	MW-32					
	Performed by	CUSTOMER			09/29/20 14:01	
	pH	6.90	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	173	mg/L	1.0	10/05/20 20:11	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
92495904016	MW-32					
EPA 6010D	Iron	0.021J	mg/L	0.040	10/05/20 20:11	
EPA 6010D	Magnesium	20.8	mg/L	0.050	10/05/20 20:11	
EPA 6010D	Manganese	1.6	mg/L	0.040	10/05/20 20:11	
EPA 6010D	Potassium	7.7	mg/L	0.20	10/05/20 20:11	
EPA 6010D	Sodium	8.0	mg/L	1.0	10/05/20 20:11	
EPA 6020B	Barium	0.053	mg/L	0.010	10/05/20 20:06	
EPA 6020B	Boron	1.3	mg/L	0.50	10/07/20 11:23	
EPA 6020B	Chromium	0.00058J	mg/L	0.010	10/05/20 20:06	
EPA 6020B	Cobalt	0.0047J	mg/L	0.0050	10/05/20 20:06	
EPA 6020B	Lithium	0.032	mg/L	0.030	10/05/20 20:06	
EPA 6020B	Molybdenum	0.062	mg/L	0.010	10/05/20 20:06	
SM 2450C-2011	Total Dissolved Solids	272	mg/L	10.0	10/02/20 17:25	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	315	mg/L	5.0	10/09/20 12:00	
SM 2320B-2011	Alkalinity, Total as CaCO3	315	mg/L	5.0	10/09/20 12:00	
EPA 300.0 Rev 2.1 1993	Chloride	2.5	mg/L	1.0	10/01/20 10:40	
EPA 300.0 Rev 2.1 1993	Fluoride	0.33	mg/L	0.10	10/01/20 10:40	
EPA 300.0 Rev 2.1 1993	Sulfate	245	mg/L	5.0	10/01/20 19:06	
92495904017	MW-39					
	Performed by	CUSTOMER			09/29/20 14:01	
	pH	7.00	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	185	mg/L	1.0	10/05/20 20:16	
EPA 6010D	Iron	0.033J	mg/L	0.040	10/05/20 20:16	
EPA 6010D	Magnesium	22.9	mg/L	0.050	10/05/20 20:16	
EPA 6010D	Manganese	1.5	mg/L	0.040	10/05/20 20:16	
EPA 6010D	Potassium	8.1	mg/L	0.20	10/05/20 20:16	
EPA 6010D	Sodium	8.3	mg/L	1.0	10/05/20 20:16	
EPA 6020B	Barium	0.058	mg/L	0.010	10/05/20 20:12	
EPA 6020B	Boron	1.3	mg/L	0.50	10/07/20 11:29	
EPA 6020B	Cobalt	0.0026J	mg/L	0.0050	10/05/20 20:12	
EPA 6020B	Lithium	0.034	mg/L	0.030	10/05/20 20:12	
EPA 6020B	Molybdenum	0.062	mg/L	0.010	10/05/20 20:12	
SM 2450C-2011	Total Dissolved Solids	272	mg/L	10.0	10/02/20 17:25	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	323	mg/L	5.0	10/09/20 12:08	
SM 2320B-2011	Alkalinity, Total as CaCO3	323	mg/L	5.0	10/09/20 12:08	
EPA 300.0 Rev 2.1 1993	Chloride	2.4	mg/L	1.0	10/01/20 10:55	
EPA 300.0 Rev 2.1 1993	Fluoride	0.33	mg/L	0.10	10/01/20 10:55	
EPA 300.0 Rev 2.1 1993	Sulfate	239	mg/L	5.0	10/01/20 19:21	
92495904018	MW-41					
	Performed by	CUSTOMER			09/29/20 14:01	
	pH	7.00	Std. Units		09/29/20 14:01	
EPA 6010D	Calcium	173	mg/L	1.0	10/05/20 20:20	
EPA 6010D	Iron	0.16	mg/L	0.040	10/05/20 20:20	
EPA 6010D	Magnesium	21.4	mg/L	0.050	10/05/20 20:20	
EPA 6010D	Manganese	0.85	mg/L	0.040	10/05/20 20:20	
EPA 6010D	Potassium	6.7	mg/L	0.20	10/05/20 20:20	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495904018	MW-41					
EPA 6010D	Sodium	8.1	mg/L	1.0	10/05/20 20:20	
EPA 6020B	Barium	0.071	mg/L	0.010	10/05/20 20:17	
EPA 6020B	Boron	1.2	mg/L	0.50	10/07/20 11:46	
EPA 6020B	Cobalt	0.00066J	mg/L	0.0050	10/05/20 20:17	
EPA 6020B	Lithium	0.028J	mg/L	0.030	10/05/20 20:17	
EPA 6020B	Molybdenum	0.036	mg/L	0.010	10/05/20 20:17	
SM 2450C-2011	Total Dissolved Solids	392	mg/L	10.0	10/02/20 17:25	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	313	mg/L	5.0	10/08/20 20:19	
SM 2320B-2011	Alkalinity, Total as CaCO3	313	mg/L	5.0	10/08/20 20:19	M1
EPA 300.0 Rev 2.1 1993	Chloride	2.5	mg/L	1.0	10/01/20 12:09	
EPA 300.0 Rev 2.1 1993	Fluoride	0.25	mg/L	0.10	10/01/20 12:09	
EPA 300.0 Rev 2.1 1993	Sulfate	154	mg/L	5.0	10/01/20 19:36	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWA-1		Lab ID: 92495904001		Collected: 09/15/20 14:01		Received: 09/16/20 11:14		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.15	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	103	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 17:49	7440-70-2	
Iron	0.087	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 17:49	7439-89-6	
Magnesium	4.3	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 17:49	7439-95-4	
Manganese	0.18	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 17:49	7439-96-5	
Potassium	0.34	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 17:49	7440-09-7	B
Sodium	21.1	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 17:49	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/22/20 20:07	09/23/20 17:15	7440-36-0	
Barium	0.035	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 17:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 17:15	7440-41-7	
Boron	0.017J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 17:15	7440-42-8	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 17:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 17:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 17:15	7439-92-1	
Lithium	0.00087J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 17:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 17:15	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	265	mg/L	10.0	10.0	1		09/17/20 15:18		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	307	mg/L	5.0	5.0	1		09/24/20 19:36		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 19:36		
Alkalinity, Total as CaCO ₃	307	mg/L	5.0	5.0	1		09/24/20 19:36		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:10	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	13.4	mg/L	1.0	0.60	1		09/18/20 21:31	16887-00-6	
Fluoride	0.082J	mg/L	0.10	0.050	1		09/18/20 21:31	16984-48-8	
Sulfate	47.3	mg/L	1.0	0.50	1		09/18/20 21:31	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWA-2 Lab ID: 92495904002 Collected: 09/15/20 10:58 Received: 09/16/20 11:14 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.22	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	21.1	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 17:53	7440-70-2	
Iron	0.78	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 17:53	7439-89-6	
Magnesium	2.5	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 17:53	7439-95-4	
Manganese	0.61	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 17:53	7439-96-5	
Potassium	0.89	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 17:53	7440-09-7	B
Sodium	7.4	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 17:53	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/22/20 20:07	09/23/20 17:21	7440-36-0	
Barium	0.12	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 17:21	7440-39-3	
Beryllium	0.00013J	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 17:21	7440-41-7	
Boron	0.044J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 17:21	7440-42-8	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 17:21	7440-47-3	
Cobalt	0.021	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 17:21	7440-48-4	
Lead	0.000080J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 17:21	7439-92-1	
Lithium	0.0015J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 17:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 17:21	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	124	mg/L	10.0	10.0	1		09/17/20 15:18		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	26.1	mg/L	5.0	5.0	1		09/24/20 13:36		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 13:36		
Alkalinity, Total as CaCO ₃	26.1	mg/L	5.0	5.0	1		09/24/20 13:36		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:11	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	5.0	mg/L	1.0	0.60	1		09/18/20 21:46	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/18/20 21:46	16984-48-8	
Sulfate	51.5	mg/L	1.0	0.50	1		09/18/20 21:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWA-3		Lab ID: 92495904003		Collected: 09/15/20 11:45		Received: 09/16/20 11:14		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.29	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	73.1	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 17:57	7440-70-2	
Iron	0.26	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 17:57	7439-89-6	
Magnesium	4.6	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 17:57	7439-95-4	
Manganese	0.22	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 17:57	7439-96-5	
Potassium	0.46	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 17:57	7440-09-7	B
Sodium	4.9	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 17:57	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/22/20 20:07	09/23/20 17:27	7440-36-0	
Barium	0.12	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 17:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 17:27	7440-41-7	
Boron	0.0071J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 17:27	7440-42-8	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 17:27	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 17:27	7440-48-4	
Lead	0.000042J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 17:27	7439-92-1	
Lithium	0.0026J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 17:27	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 17:27	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	258	mg/L	10.0	10.0	1		09/17/20 15:19		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	187	mg/L	5.0	5.0	1		09/24/20 13:43		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		09/24/20 13:43		
Alkalinity, Total as CaCO3	187	mg/L	5.0	5.0	1		09/24/20 13:43		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:13	18496-25-8	
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		09/18/20 22:01	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		09/18/20 22:01	16984-48-8	
Sulfate	44.7	mg/L	1.0	0.50	1		09/18/20 22:01	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWA-122 Lab ID: 92495904004 Collected: 09/15/20 15:41 Received: 09/16/20 11:14 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.68	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	75.8	mg/L	1.0	0.070	1	09/24/20 14:17	09/25/20 18:33	7440-70-2	M1
Iron	0.031J	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 18:33	7439-89-6	
Magnesium	5.6	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 18:33	7439-95-4	
Manganese	0.0055J	mg/L	0.040	0.0017	1	09/24/20 14:17	09/25/20 18:33	7439-96-5	
Potassium	0.90	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 18:33	7440-09-7	
Sodium	7.1	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 18:33	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.0010J	mg/L	0.0030	0.00028	1	09/23/20 13:53	09/23/20 19:07	7440-36-0	
Barium	0.039	mg/L	0.010	0.00071	1	09/23/20 13:53	09/23/20 19:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/23/20 13:53	09/23/20 19:07	7440-41-7	
Boron	0.22	mg/L	0.10	0.0052	1	09/23/20 13:53	09/23/20 19:07	7440-42-8	
Chromium	0.00067J	mg/L	0.010	0.00055	1	09/23/20 13:53	09/23/20 19:07	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/23/20 13:53	09/23/20 19:07	7440-48-4	
Lead	0.000043J	mg/L	0.0050	0.000036	1	09/23/20 13:53	09/23/20 19:07	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	09/23/20 13:53	09/23/20 19:07	7439-93-2	
Molybdenum	0.0045J	mg/L	0.010	0.00069	1	09/23/20 13:53	09/23/20 19:07	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	267	mg/L	10.0	10.0	1		09/17/20 15:19		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	202	mg/L	5.0	5.0	1		09/24/20 14:52		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/24/20 14:52		
Alkalinity, Total as CaCO ₃	202	mg/L	5.0	5.0	1		09/24/20 14:52		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:16	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	3.6	mg/L	1.0	0.60	1		09/18/20 23:45	16887-00-6	
Fluoride	0.096J	mg/L	0.10	0.050	1		09/18/20 23:45	16984-48-8	
Sulfate	41.4	mg/L	1.0	0.50	1		09/18/20 23:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWA-43D Lab ID: 92495904005 Collected: 09/16/20 11:58 Received: 09/17/20 09:45 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.52	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	56.0	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 18:49	7440-70-2	
Iron	0.020J	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 18:49	7439-89-6	
Magnesium	18.3	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 18:49	7439-95-4	
Manganese	0.010J	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 18:49	7439-96-5	
Potassium	0.97	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 18:49	7440-09-7	B
Sodium	14.0	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 18:49	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00051J	mg/L	0.0030	0.00028	1	09/22/20 20:07	09/23/20 18:54	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/22/20 20:07	09/23/20 18:54	7440-38-2	
Barium	0.26	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 18:54	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 18:54	7440-41-7	
Boron	0.061J	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 18:54	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 18:54	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 18:54	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 18:54	7440-48-4	
Lead	0.000050J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 18:54	7439-92-1	
Lithium	0.0018J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 18:54	7439-93-2	
Molybdenum	0.0044J	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 18:54	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 18:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 18:54	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	10/13/20 08:00	10/13/20 13:02	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	272	mg/L	10.0	10.0	1		09/17/20 15:18		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	251	mg/L	5.0	5.0	1		09/28/20 15:11		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/28/20 15:11		
Alkalinity, Total as CaCO ₃	251	mg/L	5.0	5.0	1		09/28/20 15:11		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:17	18496-25-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Sample: HGWA-43D Lab ID: 92495904005 Collected: 09/16/20 11:58 Received: 09/17/20 09:45 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									
Fluoride	0.058J	mg/L	0.10	0.050	1		09/19/20 21:21	16984-48-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWA-44D **Lab ID: 92495904006** Collected: 09/16/20 15:18 Received: 09/17/20 09:45 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	7.83	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	30.0	mg/L	1.0	0.070	1	09/22/20 20:12	09/23/20 18:53	7440-70-2	
Iron	0.42	mg/L	0.040	0.016	1	09/22/20 20:12	09/23/20 18:53	7439-89-6	
Magnesium	15.1	mg/L	0.050	0.0076	1	09/22/20 20:12	09/23/20 18:53	7439-95-4	
Manganese	0.020J	mg/L	0.040	0.0017	1	09/22/20 20:12	09/23/20 18:53	7439-96-5	
Potassium	3.2	mg/L	0.20	0.056	1	09/22/20 20:12	09/23/20 18:53	7440-09-7	
Sodium	50.3	mg/L	1.0	0.26	1	09/22/20 20:12	09/23/20 18:53	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00049J	mg/L	0.0030	0.00028	1	09/22/20 20:07	09/23/20 19:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	09/22/20 20:07	09/23/20 19:00	7440-38-2	
Barium	0.24	mg/L	0.010	0.00071	1	09/22/20 20:07	09/23/20 19:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/22/20 20:07	09/23/20 19:00	7440-41-7	
Boron	0.23	mg/L	0.10	0.0052	1	09/22/20 20:07	09/23/20 19:00	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	09/22/20 20:07	09/23/20 19:00	7440-43-9	
Chromium	0.0012J	mg/L	0.010	0.00055	1	09/22/20 20:07	09/23/20 19:00	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/22/20 20:07	09/23/20 19:00	7440-48-4	
Lead	0.00021J	mg/L	0.0050	0.000036	1	09/22/20 20:07	09/23/20 19:00	7439-92-1	
Lithium	0.014J	mg/L	0.030	0.00081	1	09/22/20 20:07	09/23/20 19:00	7439-93-2	
Molybdenum	0.0019J	mg/L	0.010	0.00069	1	09/22/20 20:07	09/23/20 19:00	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	09/22/20 20:07	09/23/20 19:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	09/22/20 20:07	09/23/20 19:00	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	10/13/20 08:00	10/13/20 13:04	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	270	mg/L	10.0	10.0	1		09/17/20 15:18		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	294	mg/L	5.0	5.0	1		09/28/20 15:19		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/28/20 15:19		
Alkalinity, Total as CaCO ₃	294	mg/L	5.0	5.0	1		09/28/20 15:19		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	0.11	mg/L	0.10	0.050	1		09/22/20 14:17	18496-25-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: HGWA-44D Lab ID: 92495904006 Collected: 09/16/20 15:18 Received: 09/17/20 09:45 Matrix: Water									
300.0 IC Anions 28 Days Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	4.1	mg/L	1.0	0.60	1		09/19/20 21:36	16887-00-6	
Fluoride	0.22	mg/L	0.10	0.050	1		09/19/20 21:36	16984-48-8	
Sulfate	43.0	mg/L	1.0	0.50	1		09/19/20 21:36	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWC-126		Lab ID: 92495904007		Collected: 09/18/20 15:39		Received: 09/21/20 09:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.97	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	119	mg/L	1.0	0.070	1	09/24/20 14:17	09/25/20 20:19	7440-70-2	
Iron	1.4	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 20:19	7439-89-6	
Magnesium	22.0	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 20:19	7439-95-4	
Manganese	0.15	mg/L	0.040	0.0017	1	09/24/20 14:17	09/25/20 20:19	7439-96-5	
Potassium	0.91	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 20:19	7440-09-7	
Sodium	28.5	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 20:19	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/24/20 14:23	09/25/20 19:45	7440-36-0	
Barium	0.21	mg/L	0.010	0.00071	1	09/24/20 14:23	09/25/20 19:45	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 14:23	09/25/20 19:45	7440-41-7	
Boron	0.041J	mg/L	0.10	0.0052	1	09/24/20 14:23	09/25/20 19:45	7440-42-8	
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 14:23	09/25/20 19:45	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	09/24/20 14:23	09/25/20 19:45	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/24/20 14:23	09/25/20 19:45	7439-92-1	
Lithium	0.0035J	mg/L	0.030	0.00081	1	09/24/20 14:23	09/25/20 19:45	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/24/20 14:23	09/25/20 19:45	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	452	mg/L	20.0	20.0	1		09/23/20 13:16		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	451	mg/L	5.0	5.0	1		09/30/20 20:45		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 20:45		
Alkalinity, Total as CaCO ₃	451	mg/L	5.0	5.0	1		09/30/20 20:45		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	0.068J	mg/L	0.10	0.050	1		09/22/20 14:48	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	8.4	mg/L	1.0	0.60	1		09/24/20 10:20	16887-00-6	
Fluoride	0.43	mg/L	0.10	0.050	1		09/24/20 10:20	16984-48-8	
Sulfate	62.7	mg/L	1.0	0.50	1		09/24/20 10:20	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: FB-03		Lab ID: 92495904008		Collected: 09/18/20 16:50		Received: 09/21/20 09:25		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	09/24/20 14:17	09/25/20 20:23	7440-70-2		
Iron	ND	mg/L	0.040	0.016	1	09/24/20 14:17	09/25/20 20:23	7439-89-6		
Magnesium	ND	mg/L	0.050	0.0076	1	09/24/20 14:17	09/25/20 20:23	7439-95-4		
Manganese	ND	mg/L	0.040	0.0017	1	09/24/20 14:17	09/25/20 20:23	7439-96-5		
Potassium	0.062J	mg/L	0.20	0.056	1	09/24/20 14:17	09/25/20 20:23	7440-09-7		
Sodium	ND	mg/L	1.0	0.26	1	09/24/20 14:17	09/25/20 20:23	7440-23-5		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/24/20 14:23	09/25/20 19:50	7440-36-0		
Barium	ND	mg/L	0.010	0.00071	1	09/24/20 14:23	09/25/20 19:50	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	09/24/20 14:23	09/25/20 19:50	7440-41-7		
Boron	0.011J	mg/L	0.10	0.0052	1	09/24/20 14:23	09/25/20 19:50	7440-42-8		
Chromium	ND	mg/L	0.010	0.00055	1	09/24/20 14:23	09/25/20 19:50	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	09/24/20 14:23	09/25/20 19:50	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	09/24/20 14:23	09/25/20 19:50	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	09/24/20 14:23	09/25/20 19:50	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	09/24/20 14:23	09/25/20 19:50	7439-98-7		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		09/23/20 13:16			
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 14:46			
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 14:46			
Alkalinity, Total as CaCO ₃	ND	mg/L	5.0	5.0	1		09/30/20 14:46			
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville								
Sulfide	ND	mg/L	0.10	0.050	1		09/22/20 14:49	18496-25-8		
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		09/24/20 10:35	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		09/24/20 10:35	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		09/24/20 10:35	14808-79-8		

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWC-120 Lab ID: 92495904009 Collected: 09/21/20 13:48 Received: 09/22/20 09:25 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.98	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	152	mg/L	1.0	0.070	1	09/24/20 14:20	09/25/20 21:50	7440-70-2	
Iron	0.39	mg/L	0.040	0.016	1	09/24/20 14:20	09/25/20 21:50	7439-89-6	
Magnesium	19.9	mg/L	0.050	0.0076	1	09/24/20 14:20	09/25/20 21:50	7439-95-4	
Manganese	1.3	mg/L	0.040	0.0017	1	09/24/20 14:20	09/25/20 21:50	7439-96-5	
Potassium	7.4	mg/L	0.20	0.056	1	09/24/20 14:20	09/25/20 21:50	7440-09-7	
Sodium	9.9	mg/L	1.0	0.26	1	09/24/20 14:20	09/25/20 21:50	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/29/20 14:13	09/30/20 18:57	7440-36-0	
Barium	0.046	mg/L	0.010	0.00071	1	09/29/20 14:13	09/30/20 18:57	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/29/20 14:13	09/30/20 18:57	7440-41-7	
Boron	0.93	mg/L	0.10	0.0052	1	09/29/20 14:13	09/30/20 18:57	7440-42-8	
Chromium	0.00065J	mg/L	0.010	0.00055	1	09/29/20 14:13	09/30/20 18:57	7440-47-3	
Cobalt	0.0041J	mg/L	0.0050	0.00038	1	09/29/20 14:13	09/30/20 18:57	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/29/20 14:13	09/30/20 18:57	7439-92-1	
Lithium	0.023J	mg/L	0.030	0.00081	1	09/29/20 14:13	09/30/20 18:57	7439-93-2	
Molybdenum	0.043	mg/L	0.010	0.00069	1	09/29/20 14:13	09/30/20 18:57	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	272	mg/L	10.0	10.0	1		09/24/20 10:28		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	599	mg/L	5.0	5.0	1		09/30/20 18:44		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 18:44		
Alkalinity, Total as CaCO ₃	599	mg/L	5.0	5.0	1		09/30/20 18:44		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/24/20 11:48	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	2.4	mg/L	1.0	0.60	1		09/24/20 19:43	16887-00-6	
Fluoride	0.33	mg/L	0.10	0.050	1		09/24/20 19:43	16984-48-8	
Sulfate	225	mg/L	3.0	1.5	3		09/25/20 13:37	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: FD-03		Lab ID: 92495904010		Collected: 09/21/20 00:00	Received: 09/22/20 09:25	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
6010D ATL ICP		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	156	mg/L	1.0	0.070	1	09/24/20 14:20	09/25/20 21:55	7440-70-2		
Iron	0.40	mg/L	0.040	0.016	1	09/24/20 14:20	09/25/20 21:55	7439-89-6		
Magnesium	20.4	mg/L	0.050	0.0076	1	09/24/20 14:20	09/25/20 21:55	7439-95-4		
Manganese	1.4	mg/L	0.040	0.0017	1	09/24/20 14:20	09/25/20 21:55	7439-96-5		
Potassium	7.6	mg/L	0.20	0.056	1	09/24/20 14:20	09/25/20 21:55	7440-09-7		
Sodium	10.2	mg/L	1.0	0.26	1	09/24/20 14:20	09/25/20 21:55	7440-23-5		
6020 MET ICPMS		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	09/29/20 14:13	09/30/20 19:03	7440-36-0		
Barium	0.047	mg/L	0.010	0.00071	1	09/29/20 14:13	09/30/20 19:03	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	09/29/20 14:13	09/30/20 19:03	7440-41-7		
Boron	0.92	mg/L	0.10	0.0052	1	09/29/20 14:13	09/30/20 19:03	7440-42-8		
Chromium	ND	mg/L	0.010	0.00055	1	09/29/20 14:13	09/30/20 19:03	7440-47-3		
Cobalt	0.0041J	mg/L	0.0050	0.00038	1	09/29/20 14:13	09/30/20 19:03	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	09/29/20 14:13	09/30/20 19:03	7439-92-1		
Lithium	0.023J	mg/L	0.030	0.00081	1	09/29/20 14:13	09/30/20 19:03	7439-93-2		
Molybdenum	0.044	mg/L	0.010	0.00069	1	09/29/20 14:13	09/30/20 19:03	7439-98-7		
2540C Total Dissolved Solids		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	270	mg/L	10.0	10.0	1		09/24/20 10:28			
2320B Alkalinity		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity, Bicarbonate (CaCO ₃)	311	mg/L	5.0	5.0	1		10/01/20 16:22			
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/01/20 16:22			
Alkalinity, Total as CaCO ₃	311	mg/L	5.0	5.0	1		10/01/20 16:22			
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville								
Sulfide	ND	mg/L	0.10	0.050	1		09/24/20 11:48	18496-25-8		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	2.4	mg/L	1.0	0.60	1		09/24/20 19:58	16887-00-6		
Fluoride	0.36	mg/L	0.10	0.050	1		09/24/20 19:58	16984-48-8		
Sulfate	226	mg/L	3.0	1.5	3		09/25/20 13:51	14808-79-8		

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWC-125		Lab ID: 92495904011		Collected: 09/21/20 12:07		Received: 09/22/20 09:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.22	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Calcium	155	mg/L	1.0	0.070	1	09/24/20 14:20	09/25/20 21:59	7440-70-2	
Iron	0.13	mg/L	0.040	0.016	1	09/24/20 14:20	09/25/20 21:59	7439-89-6	
Magnesium	24.3	mg/L	0.050	0.0076	1	09/24/20 14:20	09/25/20 21:59	7439-95-4	
Manganese	2.3	mg/L	0.040	0.0017	1	09/24/20 14:20	09/25/20 21:59	7439-96-5	
Potassium	3.8	mg/L	0.20	0.056	1	09/24/20 14:20	09/25/20 21:59	7440-09-7	
Sodium	22.0	mg/L	1.0	0.26	1	09/24/20 14:20	09/25/20 21:59	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	09/29/20 14:13	09/30/20 19:09	7440-36-0	
Barium	0.042	mg/L	0.010	0.00071	1	09/29/20 14:13	09/30/20 19:09	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	09/29/20 14:13	09/30/20 19:09	7440-41-7	
Boron	1.4	mg/L	0.10	0.0052	1	09/29/20 14:13	09/30/20 19:09	7440-42-8	
Chromium	ND	mg/L	0.010	0.00055	1	09/29/20 14:13	09/30/20 19:09	7440-47-3	
Cobalt	0.012	mg/L	0.0050	0.00038	1	09/29/20 14:13	09/30/20 19:09	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	09/29/20 14:13	09/30/20 19:09	7439-92-1	
Lithium	0.0038J	mg/L	0.030	0.00081	1	09/29/20 14:13	09/30/20 19:09	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	09/29/20 14:13	09/30/20 19:09	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011									
Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	956	mg/L	20.0	20.0	1		09/24/20 10:28		
2320B Alkalinity									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	205	mg/L	5.0	5.0	1		09/30/20 19:13		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		09/30/20 19:13		
Alkalinity, Total as CaCO ₃	205	mg/L	5.0	5.0	1		09/30/20 19:13		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011									
Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		09/24/20 11:48	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Chloride	12.1	mg/L	1.0	0.60	1		09/24/20 20:12	16887-00-6	
Fluoride	0.11	mg/L	0.10	0.050	1		09/24/20 20:12	16984-48-8	
Sulfate	352	mg/L	5.0	2.5	5		09/25/20 14:05	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Sample: HGWA-45D Lab ID: 92495904012 Collected: 09/25/20 13:50 Received: 09/28/20 09:40 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		09/29/20 14:01		
pH	7.57	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	56.8	mg/L	1.0	0.070	1	10/01/20 18:49	10/05/20 19:27	7440-70-2	
Iron	0.48	mg/L	0.040	0.016	1	10/01/20 18:49	10/05/20 19:27	7439-89-6	
Magnesium	19.4	mg/L	0.050	0.0076	1	10/01/20 18:49	10/05/20 19:27	7439-95-4	
Manganese	0.053	mg/L	0.040	0.0017	1	10/01/20 18:49	10/05/20 19:27	7439-96-5	
Potassium	2.1	mg/L	0.20	0.056	1	10/01/20 18:49	10/05/20 19:27	7440-09-7	
Sodium	19.0	mg/L	1.0	0.26	1	10/01/20 18:49	10/05/20 19:27	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/06/20 19:05	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/06/20 19:05	7440-38-2	
Barium	0.49	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 19:05	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 19:05	7440-41-7	
Boron	0.16	mg/L	0.10	0.0052	1	10/02/20 15:00	10/06/20 19:05	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/06/20 19:05	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 19:05	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 19:05	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 19:05	7439-92-1	
Lithium	0.0049J	mg/L	0.030	0.00081	1	10/02/20 15:00	10/06/20 19:05	7439-93-2	
Molybdenum	0.0014J	mg/L	0.010	0.00069	1	10/02/20 15:00	10/06/20 19:05	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/02/20 15:00	10/06/20 19:05	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/06/20 19:05	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00050	0.000078	1	10/13/20 08:00	10/13/20 13:07	7439-97-6	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	263	mg/L	10.0	10.0	1		10/01/20 15:25		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	272	mg/L	5.0	5.0	1		10/08/20 22:15		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 22:15		
Alkalinity, Total as CaCO3	272	mg/L	5.0	5.0	1		10/08/20 22:15		

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Sample: HGWA-45D		Lab ID: 92495904012		Collected: 09/25/20 13:50	Received: 09/28/20 09:40	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide Water		Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville							
Sulfide	0.68	mg/L	0.10	0.050	1		09/29/20 13:52	18496-25-8	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Chloride	3.6	mg/L	1.0	0.60	1		10/01/20 09:40	16887-00-6	
Fluoride	0.21	mg/L	0.10	0.050	1		10/01/20 09:40	16984-48-8	
Sulfate	6.8	mg/L	1.0	0.50	1		10/01/20 09:40	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: MW-46D		Lab ID: 92495904013		Collected: 09/25/20 11:10		Received: 09/28/20 09:40		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		09/29/20 14:01		
pH	7.56	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	78.3	mg/L	1.0	0.070	1	10/01/20 18:49	10/05/20 19:32	7440-70-2	
Iron	0.42	mg/L	0.040	0.016	1	10/01/20 18:49	10/05/20 19:32	7439-89-6	
Magnesium	16.5	mg/L	0.050	0.0076	1	10/01/20 18:49	10/05/20 19:32	7439-95-4	
Manganese	0.31	mg/L	0.040	0.0017	1	10/01/20 18:49	10/05/20 19:32	7439-96-5	
Potassium	3.8	mg/L	0.20	0.056	1	10/01/20 18:49	10/05/20 19:32	7440-09-7	
Sodium	53.6	mg/L	1.0	0.26	1	10/01/20 18:49	10/05/20 19:32	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/06/20 19:11	7440-36-0	
Barium	0.040	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 19:11	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 19:11	7440-41-7	
Boron	0.51	mg/L	0.10	0.0052	1	10/02/20 15:00	10/06/20 19:11	7440-42-8	
Chromium	0.00075J	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 19:11	7440-47-3	
Cobalt	0.00041J	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 19:11	7440-48-4	
Lead	0.000048J	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 19:11	7439-92-1	
Lithium	0.015J	mg/L	0.030	0.00081	1	10/02/20 15:00	10/06/20 19:11	7439-93-2	
Molybdenum	0.027	mg/L	0.010	0.00069	1	10/02/20 15:00	10/06/20 19:11	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	449	mg/L	10.0	10.0	1		10/01/20 15:25		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	238	mg/L	5.0	5.0	1		10/08/20 22:23		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/08/20 22:23		
Alkalinity, Total as CaCO ₃	238	mg/L	5.0	5.0	1		10/08/20 22:23		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	0.30	mg/L	0.10	0.050	1		09/29/20 13:53	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	3.7	mg/L	1.0	0.60	1		10/01/20 09:55	16887-00-6	
Fluoride	0.68	mg/L	0.10	0.050	1		10/01/20 09:55	16984-48-8	
Sulfate	149	mg/L	3.0	1.5	3		10/01/20 18:07	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWC-121A Lab ID: 92495904014 Collected: 09/28/20 16:04 Received: 09/29/20 08:55 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		09/29/20 14:01		
pH	6.93	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	167	mg/L	1.0	0.070	1	10/01/20 18:49	10/05/20 20:03	7440-70-2	
Iron	0.044	mg/L	0.040	0.016	1	10/01/20 18:49	10/05/20 20:03	7439-89-6	
Magnesium	23.6	mg/L	0.050	0.0076	1	10/01/20 18:49	10/05/20 20:03	7439-95-4	
Manganese	0.68	mg/L	0.040	0.0017	1	10/01/20 18:49	10/05/20 20:03	7439-96-5	
Potassium	1.2	mg/L	0.20	0.056	1	10/01/20 18:49	10/05/20 20:03	7440-09-7	
Sodium	35.3	mg/L	1.0	0.26	1	10/01/20 18:49	10/05/20 20:03	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/05/20 19:54	7440-36-0	
Barium	0.056	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 19:54	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/05/20 19:54	7440-41-7	
Boron	2.3	mg/L	0.50	0.026	5	10/02/20 15:00	10/07/20 11:12	7440-42-8	
Chromium	ND	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 19:54	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 19:54	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/05/20 19:54	7439-92-1	
Lithium	0.0076J	mg/L	0.030	0.00081	1	10/02/20 15:00	10/05/20 19:54	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/02/20 15:00	10/05/20 19:54	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/01/20 15:27		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	376	mg/L	5.0	5.0	1		10/09/20 11:39		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/09/20 11:39		
Alkalinity, Total as CaCO ₃	376	mg/L	5.0	5.0	1		10/09/20 11:39		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		10/01/20 12:53	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	23.2	mg/L	1.0	0.60	1		10/01/20 10:10	16887-00-6	
Fluoride	0.15	mg/L	0.10	0.050	1		10/01/20 10:10	16984-48-8	
Sulfate	182	mg/L	4.0	2.0	4		10/01/20 18:22	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: HGWC-124 Lab ID: 92495904015 Collected: 09/28/20 18:00 Received: 09/29/20 08:55 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		09/29/20 14:01		
pH	7.27	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	107	mg/L	1.0	0.070	1	10/01/20 18:49	10/05/20 20:07	7440-70-2	
Iron	0.48	mg/L	0.040	0.016	1	10/01/20 18:49	10/05/20 20:07	7439-89-6	
Magnesium	9.6	mg/L	0.050	0.0076	1	10/01/20 18:49	10/05/20 20:07	7439-95-4	
Manganese	0.24	mg/L	0.040	0.0017	1	10/01/20 18:49	10/05/20 20:07	7439-96-5	
Potassium	0.94	mg/L	0.20	0.056	1	10/01/20 18:49	10/05/20 20:07	7440-09-7	
Sodium	5.6	mg/L	1.0	0.26	1	10/01/20 18:49	10/05/20 20:07	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/05/20 20:00	7440-36-0	
Barium	0.071	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 20:00	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/05/20 20:00	7440-41-7	
Boron	0.43	mg/L	0.10	0.0052	1	10/02/20 15:00	10/07/20 11:17	7440-42-8	
Chromium	ND	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 20:00	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 20:00	7440-48-4	
Lead	0.000075J	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/05/20 20:00	7439-92-1	
Lithium	0.0011J	mg/L	0.030	0.00081	1	10/02/20 15:00	10/05/20 20:00	7439-93-2	
Molybdenum	0.00090J	mg/L	0.010	0.00069	1	10/02/20 15:00	10/05/20 20:00	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	176	mg/L	10.0	10.0	1		10/01/20 15:27		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	240	mg/L	5.0	5.0	1		10/09/20 11:51		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/09/20 11:51		
Alkalinity, Total as CaCO ₃	240	mg/L	5.0	5.0	1		10/09/20 11:51		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		10/01/20 12:54	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	2.5	mg/L	1.0	0.60	1		10/01/20 10:25	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/01/20 10:25	16984-48-8	
Sulfate	86.2	mg/L	1.0	0.50	1		10/01/20 10:25	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Sample: MW-32 **Lab ID: 92495904016** Collected: 09/28/20 15:44 Received: 09/29/20 08:55 Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
Field Data									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	CUSTOMER				1		09/29/20 14:01		
pH	6.90	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	173	mg/L	1.0	0.070	1	10/01/20 18:49	10/05/20 20:11	7440-70-2	
Iron	0.021J	mg/L	0.040	0.016	1	10/01/20 18:49	10/05/20 20:11	7439-89-6	
Magnesium	20.8	mg/L	0.050	0.0076	1	10/01/20 18:49	10/05/20 20:11	7439-95-4	
Manganese	1.6	mg/L	0.040	0.0017	1	10/01/20 18:49	10/05/20 20:11	7439-96-5	
Potassium	7.7	mg/L	0.20	0.056	1	10/01/20 18:49	10/05/20 20:11	7440-09-7	
Sodium	8.0	mg/L	1.0	0.26	1	10/01/20 18:49	10/05/20 20:11	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/05/20 20:06	7440-36-0	
Barium	0.053	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 20:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/05/20 20:06	7440-41-7	
Boron	1.3	mg/L	0.50	0.026	5	10/02/20 15:00	10/07/20 11:23	7440-42-8	
Chromium	0.00058J	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 20:06	7440-47-3	
Cobalt	0.0047J	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 20:06	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/05/20 20:06	7439-92-1	
Lithium	0.032	mg/L	0.030	0.00081	1	10/02/20 15:00	10/05/20 20:06	7439-93-2	
Molybdenum	0.062	mg/L	0.010	0.00069	1	10/02/20 15:00	10/05/20 20:06	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	272	mg/L	10.0	10.0	1		10/02/20 17:25		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO ₃)	315	mg/L	5.0	5.0	1		10/09/20 12:00		
Alkalinity, Carbonate (CaCO ₃)	ND	mg/L	5.0	5.0	1		10/09/20 12:00		
Alkalinity, Total as CaCO ₃	315	mg/L	5.0	5.0	1		10/09/20 12:00		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		10/01/20 12:54	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	2.5	mg/L	1.0	0.60	1		10/01/20 10:40	16887-00-6	
Fluoride	0.33	mg/L	0.10	0.050	1		10/01/20 10:40	16984-48-8	
Sulfate	245	mg/L	5.0	2.5	5		10/01/20 19:06	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: MW-39 **Lab ID: 92495904017** Collected: 09/28/20 17:27 Received: 09/29/20 08:55 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		09/29/20 14:01		
pH	7.00	Std. Units			1		09/29/20 14:01		
6010D ATL ICP									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	185	mg/L	1.0	0.070	1	10/01/20 18:49	10/05/20 20:16	7440-70-2	
Iron	0.033J	mg/L	0.040	0.016	1	10/01/20 18:49	10/05/20 20:16	7439-89-6	
Magnesium	22.9	mg/L	0.050	0.0076	1	10/01/20 18:49	10/05/20 20:16	7439-95-4	
Manganese	1.5	mg/L	0.040	0.0017	1	10/01/20 18:49	10/05/20 20:16	7439-96-5	
Potassium	8.1	mg/L	0.20	0.056	1	10/01/20 18:49	10/05/20 20:16	7440-09-7	
Sodium	8.3	mg/L	1.0	0.26	1	10/01/20 18:49	10/05/20 20:16	7440-23-5	
6020 MET ICPMS									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/05/20 20:12	7440-36-0	
Barium	0.058	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 20:12	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/05/20 20:12	7440-41-7	
Boron	1.3	mg/L	0.50	0.026	5	10/02/20 15:00	10/07/20 11:29	7440-42-8	
Chromium	ND	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 20:12	7440-47-3	
Cobalt	0.0026J	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 20:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/05/20 20:12	7439-92-1	
Lithium	0.034	mg/L	0.030	0.00081	1	10/02/20 15:00	10/05/20 20:12	7439-93-2	
Molybdenum	0.062	mg/L	0.010	0.00069	1	10/02/20 15:00	10/05/20 20:12	7439-98-7	
2540C Total Dissolved Solids									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	272	mg/L	10.0	10.0	1		10/02/20 17:25		
2320B Alkalinity									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity, Bicarbonate (CaCO3)	323	mg/L	5.0	5.0	1		10/09/20 12:08		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 12:08		
Alkalinity, Total as CaCO3	323	mg/L	5.0	5.0	1		10/09/20 12:08		
4500S2D Sulfide Water									
Analytical Method: SM 4500-S2D-2011 Pace Analytical Services - Asheville									
Sulfide	ND	mg/L	0.10	0.050	1		10/01/20 12:55	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	2.4	mg/L	1.0	0.60	1		10/01/20 10:55	16887-00-6	
Fluoride	0.33	mg/L	0.10	0.050	1		10/01/20 10:55	16984-48-8	
Sulfate	239	mg/L	5.0	2.5	5		10/01/20 19:21	14808-79-8	

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ANALYTICAL RESULTS

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Sample: MW-41 **Lab ID: 92495904018** Collected: 09/28/20 19:05 Received: 09/29/20 08:55 Matrix: Water

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

Analytical Method:
Pace Analytical Services - Charlotte

Performed by	CUSTOMER				1		09/29/20 14:01		
pH	7.00	Std. Units			1		09/29/20 14:01		

6010D ATL ICP

Analytical Method: EPA 6010D Preparation Method: EPA 3010A
Pace Analytical Services - Peachtree Corners, GA

Calcium	173	mg/L	1.0	0.070	1	10/01/20 18:49	10/05/20 20:20	7440-70-2	
Iron	0.16	mg/L	0.040	0.016	1	10/01/20 18:49	10/05/20 20:20	7439-89-6	
Magnesium	21.4	mg/L	0.050	0.0076	1	10/01/20 18:49	10/05/20 20:20	7439-95-4	
Manganese	0.85	mg/L	0.040	0.0017	1	10/01/20 18:49	10/05/20 20:20	7439-96-5	
Potassium	6.7	mg/L	0.20	0.056	1	10/01/20 18:49	10/05/20 20:20	7440-09-7	
Sodium	8.1	mg/L	1.0	0.26	1	10/01/20 18:49	10/05/20 20:20	7440-23-5	

6020 MET ICPMS

Analytical Method: EPA 6020B Preparation Method: EPA 3005A
Pace Analytical Services - Peachtree Corners, GA

Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/05/20 20:17	7440-36-0	
Barium	0.071	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 20:17	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/05/20 20:17	7440-41-7	
Boron	1.2	mg/L	0.50	0.026	5	10/02/20 15:00	10/07/20 11:46	7440-42-8	
Chromium	ND	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 20:17	7440-47-3	
Cobalt	0.00066J	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 20:17	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/05/20 20:17	7439-92-1	
Lithium	0.028J	mg/L	0.030	0.00081	1	10/02/20 15:00	10/05/20 20:17	7439-93-2	
Molybdenum	0.036	mg/L	0.010	0.00069	1	10/02/20 15:00	10/05/20 20:17	7439-98-7	

2540C Total Dissolved Solids

Analytical Method: SM 2450C-2011
Pace Analytical Services - Peachtree Corners, GA

Total Dissolved Solids	392	mg/L	10.0	10.0	1		10/02/20 17:25		
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2320B Alkalinity

Analytical Method: SM 2320B-2011
Pace Analytical Services - Asheville

Alkalinity, Bicarbonate (CaCO3)	313	mg/L	5.0	5.0	1		10/08/20 20:19		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 20:19		
Alkalinity, Total as CaCO3	313	mg/L	5.0	5.0	1		10/08/20 20:19		M1

4500S2D Sulfide Water

Analytical Method: SM 4500-S2D-2011
Pace Analytical Services - Asheville

Sulfide	ND	mg/L	0.10	0.050	1		10/01/20 12:55	18496-25-8	
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300.0 IC Anions 28 Days

Analytical Method: EPA 300.0 Rev 2.1 1993
Pace Analytical Services - Asheville

Chloride	2.5	mg/L	1.0	0.60	1		10/01/20 12:09	16887-00-6	
Fluoride	0.25	mg/L	0.10	0.050	1		10/01/20 12:09	16984-48-8	
Sulfate	154	mg/L	5.0	2.5	5		10/01/20 19:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 568201 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495904001, 92495904002, 92495904003, 92495904005, 92495904006

METHOD BLANK: 3010803 Matrix: Water
Associated Lab Samples: 92495904001, 92495904002, 92495904003, 92495904005, 92495904006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/23/20 17:40	
Iron	mg/L	ND	0.040	0.016	09/23/20 17:40	
Magnesium	mg/L	ND	0.050	0.0076	09/23/20 17:40	
Manganese	mg/L	ND	0.040	0.0017	09/23/20 17:40	
Potassium	mg/L	0.14J	0.20	0.056	09/23/20 17:40	
Sodium	mg/L	ND	1.0	0.26	09/23/20 17:40	

LABORATORY CONTROL SAMPLE: 3010804

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.96J	96	80-120	
Iron	mg/L	1	0.97	97	80-120	
Magnesium	mg/L	1	0.99	99	80-120	
Manganese	mg/L	1	0.98	98	80-120	
Potassium	mg/L	1	1.1	105	80-120	
Sodium	mg/L	1	1.1	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3010805 3010806

Parameter	Units	3010805		3010806		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	20.4	1	21.1	21.9	69	147	75-125	4	20	M1
Iron	mg/L	0.028J	1	0.96	0.97	93	95	75-125	2	20	
Magnesium	mg/L	0.88	1	1.8	1.8	94	97	75-125	2	20	
Manganese	mg/L	0.0083J	1	0.95	0.96	94	95	75-125	1	20	
Potassium	mg/L	0.28	1	1.2	1.2	92	94	75-125	2	20	
Sodium	mg/L	7.7	1	8.5	8.9	83	118	75-125	4	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 568747 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495904004, 92495904007, 92495904008

METHOD BLANK: 3013294 Matrix: Water
Associated Lab Samples: 92495904004, 92495904007, 92495904008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/25/20 18:16	
Iron	mg/L	ND	0.040	0.016	09/25/20 18:16	
Magnesium	mg/L	ND	0.050	0.0076	09/25/20 18:16	
Manganese	mg/L	ND	0.040	0.0017	09/25/20 18:16	
Potassium	mg/L	ND	0.20	0.056	09/25/20 18:16	
Sodium	mg/L	ND	1.0	0.26	09/25/20 18:16	

LABORATORY CONTROL SAMPLE: 3013295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.98J	98	80-120	
Iron	mg/L	1	0.97	97	80-120	
Magnesium	mg/L	1	1.0	100	80-120	
Manganese	mg/L	1	1.0	101	80-120	
Potassium	mg/L	1	1.0	105	80-120	
Sodium	mg/L	1	1.1	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013296 3013297

Parameter	Units	3013296		3013297		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	75.8	1	74.9	75.7	-84	-9	75-125	1	20	M1
Iron	mg/L	0.031J	1	0.94	0.96	91	93	75-125	2	20	
Magnesium	mg/L	5.6	1	6.4	6.4	81	89	75-125	1	20	
Manganese	mg/L	0.0055J	1	0.95	0.97	94	97	75-125	3	20	
Potassium	mg/L	0.90	1	1.8	1.9	93	99	75-125	3	20	
Sodium	mg/L	7.1	1	8.0	8.0	82	87	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 568748 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495904009, 92495904010, 92495904011

METHOD BLANK: 3013298 Matrix: Water
Associated Lab Samples: 92495904009, 92495904010, 92495904011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	09/25/20 20:40	
Iron	mg/L	ND	0.040	0.016	09/25/20 20:40	
Magnesium	mg/L	ND	0.050	0.0076	09/25/20 20:40	
Manganese	mg/L	ND	0.040	0.0017	09/25/20 20:40	
Potassium	mg/L	0.12J	0.20	0.056	09/25/20 20:40	
Sodium	mg/L	ND	1.0	0.26	09/25/20 20:40	

LABORATORY CONTROL SAMPLE: 3013299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.95J	95	80-120	
Iron	mg/L	1	0.93	93	80-120	
Magnesium	mg/L	1	0.95	95	80-120	
Manganese	mg/L	1	0.96	96	80-120	
Potassium	mg/L	1	1.1	107	80-120	
Sodium	mg/L	1	1.1	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013300 3013301

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495894022 Result	Spike Conc.	Spike Conc.	Result						
Calcium	mg/L	75.3	1	1	79.7	76.2	438	83	75-125	5	20 M1
Iron	mg/L	ND	1	1	0.96	0.93	95	92	75-125	3	20
Magnesium	mg/L	8.6	1	1	10	9.5	138	94	75-125	4	20 M1
Manganese	mg/L	0.0077J	1	1	0.99	0.96	98	95	75-125	3	20
Potassium	mg/L	0.91	1	1	2.0	2.0	110	110	75-125	0	20
Sodium	mg/L	8.4	1	1	9.8	9.4	137	92	75-125	5	20 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 570395 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495904012, 92495904013, 92495904014, 92495904015, 92495904016, 92495904017, 92495904018

METHOD BLANK: 3021771 Matrix: Water
Associated Lab Samples: 92495904012, 92495904013, 92495904014, 92495904015, 92495904016, 92495904017, 92495904018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	10/05/20 18:52	
Iron	mg/L	ND	0.040	0.016	10/05/20 18:52	
Magnesium	mg/L	ND	0.050	0.0076	10/05/20 18:52	
Manganese	mg/L	ND	0.040	0.0017	10/05/20 18:52	
Potassium	mg/L	ND	0.20	0.056	10/05/20 18:52	
Sodium	mg/L	ND	1.0	0.26	10/05/20 18:52	

LABORATORY CONTROL SAMPLE: 3021772

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	102	80-120	
Iron	mg/L	1	0.99	99	80-120	
Magnesium	mg/L	1	1.0	101	80-120	
Manganese	mg/L	1	0.99	99	80-120	
Potassium	mg/L	1	1.0	104	80-120	
Sodium	mg/L	1	1.1	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3021773 3021774

Parameter	Units	3021773		3021774		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium	mg/L	72.8	1	73.5	75.1	70	232	75-125	2	20	M1
Iron	mg/L	0.39	1	1.4	1.5	103	107	75-125	3	20	
Magnesium	mg/L	12.8	1	13.8	14.1	96	132	75-125	3	20	M1
Manganese	mg/L	8.6	1	9.5	9.7	86	110	75-125	2	20	
Potassium	mg/L	0.72	1	1.8	1.8	110	108	75-125	1	20	
Sodium	mg/L	8.1	1	9.1	9.3	95	124	75-125	3	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 568198 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495904001, 92495904002, 92495904003, 92495904005, 92495904006

METHOD BLANK: 3010799 Matrix: Water
Associated Lab Samples: 92495904001, 92495904002, 92495904003, 92495904005, 92495904006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/23/20 17:04	
Arsenic	mg/L	ND	0.0050	0.00078	09/23/20 17:04	
Barium	mg/L	ND	0.010	0.00071	09/23/20 17:04	
Beryllium	mg/L	ND	0.0030	0.000046	09/23/20 17:04	
Boron	mg/L	ND	0.10	0.0052	09/23/20 17:04	
Cadmium	mg/L	ND	0.0025	0.00012	09/23/20 17:04	
Chromium	mg/L	ND	0.010	0.00055	09/23/20 17:04	
Cobalt	mg/L	ND	0.0050	0.00038	09/23/20 17:04	
Lead	mg/L	ND	0.0050	0.000036	09/23/20 17:04	
Lithium	mg/L	ND	0.030	0.00081	09/23/20 17:04	
Molybdenum	mg/L	ND	0.010	0.00069	09/23/20 17:04	
Selenium	mg/L	ND	0.010	0.0016	09/23/20 17:04	
Thallium	mg/L	ND	0.0010	0.00014	09/23/20 17:04	

LABORATORY CONTROL SAMPLE: 3010800

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	101	80-120	
Arsenic	mg/L	0.1	0.096	96	80-120	
Barium	mg/L	0.1	0.095	95	80-120	
Beryllium	mg/L	0.1	0.098	98	80-120	
Boron	mg/L	1	1.0	104	80-120	
Cadmium	mg/L	0.1	0.096	96	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.096	96	80-120	
Selenium	mg/L	0.1	0.090	90	80-120	
Thallium	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3010801 3010802

Parameter	Units	92495900004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Antimony	mg/L				0.10	0.10					1	20	
Arsenic	mg/L	ND	0.1	0.1	0.098	0.097	97	97	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Parameter	Units	3010801		3010802		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92495900004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	mg/L	0.024	0.1	0.1	0.12	0.12	100	100	75-125	0	20		
Beryllium	mg/L	ND	0.1	0.1	0.094	0.093	94	93	75-125	1	20		
Boron	mg/L	0.013J	1	1	0.97	0.98	96	96	75-125	0	20		
Cadmium	mg/L	ND	0.1	0.1	0.096	0.095	96	95	75-125	0	20		
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20		
Cobalt	mg/L	ND	0.1	0.1	0.098	0.098	98	97	75-125	0	20		
Lead	mg/L	0.000049J	0.1	0.1	0.095	0.097	95	97	75-125	2	20		
Lithium	mg/L	ND	0.1	0.1	0.092	0.092	91	92	75-125	0	20		
Molybdenum	mg/L	ND	0.1	0.1	0.093	0.094	93	94	75-125	1	20		
Selenium	mg/L	ND	0.1	0.1	0.094	0.095	94	95	75-125	1	20		
Thallium	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	1	20		

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
 Pace Project No.: 92495904

QC Batch: 568417 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020 MET
 Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92495904004

METHOD BLANK: 3011604 Matrix: Water
 Associated Lab Samples: 92495904004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/23/20 18:33	
Barium	mg/L	ND	0.010	0.00071	09/23/20 18:33	
Beryllium	mg/L	ND	0.0030	0.000046	09/23/20 18:33	
Boron	mg/L	ND	0.10	0.0052	09/23/20 18:33	
Chromium	mg/L	ND	0.010	0.00055	09/23/20 18:33	
Cobalt	mg/L	ND	0.0050	0.00038	09/23/20 18:33	
Lead	mg/L	ND	0.0050	0.000036	09/23/20 18:33	
Lithium	mg/L	ND	0.030	0.00081	09/23/20 18:33	
Molybdenum	mg/L	ND	0.010	0.00069	09/23/20 18:33	

LABORATORY CONTROL SAMPLE: 3011605

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	105	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.10	102	80-120	
Boron	mg/L	1	1.0	104	80-120	
Chromium	mg/L	0.1	0.10	105	80-120	
Cobalt	mg/L	0.1	0.10	105	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011606 3011607

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92495876001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.10	0.099	101	99	75-125	2	20	
Barium	mg/L	0.030	0.1	0.1	0.13	0.13	96	95	75-125	1	20	
Beryllium	mg/L	0.00012J	0.1	0.1	0.098	0.095	98	95	75-125	2	20	
Boron	mg/L	0.0065J	1	1	1.0	0.98	100	97	75-125	3	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	103	103	75-125	0	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	101	101	75-125	1	20	
Lead	mg/L	0.00065J	0.1	0.1	0.098	0.099	97	99	75-125	2	20	
Lithium	mg/L	0.0014J	0.1	0.1	0.10	0.10	101	100	75-125	0	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
 Pace Project No.: 92495904

QC Batch: 568749 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020 MET
 Laboratory: Pace Analytical Services - Peachtree Corners, GA
 Associated Lab Samples: 92495904007, 92495904008

METHOD BLANK: 3013302 Matrix: Water
 Associated Lab Samples: 92495904007, 92495904008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/25/20 18:19	
Barium	mg/L	ND	0.010	0.00071	09/25/20 18:19	
Beryllium	mg/L	ND	0.0030	0.000046	09/25/20 18:19	
Boron	mg/L	ND	0.10	0.0052	09/25/20 18:19	
Chromium	mg/L	ND	0.010	0.00055	09/25/20 18:19	
Cobalt	mg/L	ND	0.0050	0.00038	09/25/20 18:19	
Lead	mg/L	ND	0.0050	0.000036	09/25/20 18:19	
Lithium	mg/L	ND	0.030	0.00081	09/25/20 18:19	
Molybdenum	mg/L	ND	0.010	0.00069	09/25/20 18:19	

LABORATORY CONTROL SAMPLE: 3013303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	105	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	0.97	97	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3013304 3013305

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92495894014 Result	Spike Conc.	Spike Conc.	Result							Result
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	104	108	75-125	4	20	
Barium	mg/L	0.099	0.1	0.1	0.18	0.19	85	89	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.096	0.099	96	99	75-125	4	20	
Boron	mg/L	2.0	1	1	3.0	3.1	102	106	75-125	2	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.11	101	108	75-125	7	20	
Cobalt	mg/L	ND	0.1	0.1	0.098	0.10	98	101	75-125	4	20	
Lead	mg/L	ND	0.1	0.1	0.097	0.10	97	101	75-125	4	20	
Lithium	mg/L	0.0032J	0.1	0.1	0.095	0.099	92	96	75-125	4	20	
Molybdenum	mg/L	0.014	0.1	0.1	0.12	0.12	105	109	75-125	4	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
 Pace Project No.: 92495904

QC Batch: 569670 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020 MET
 Laboratory: Pace Analytical Services - Peachtree Corners, GA
 Associated Lab Samples: 92495904009, 92495904010, 92495904011

METHOD BLANK: 3017842 Matrix: Water
 Associated Lab Samples: 92495904009, 92495904010, 92495904011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	09/30/20 17:26	
Barium	mg/L	ND	0.010	0.00071	09/30/20 17:26	
Beryllium	mg/L	ND	0.0030	0.000046	09/30/20 17:26	
Boron	mg/L	ND	0.10	0.0052	09/30/20 17:26	
Chromium	mg/L	ND	0.010	0.00055	09/30/20 17:26	
Cobalt	mg/L	ND	0.0050	0.00038	09/30/20 17:26	
Lead	mg/L	ND	0.0050	0.000036	09/30/20 17:26	
Lithium	mg/L	ND	0.030	0.00081	09/30/20 17:26	
Molybdenum	mg/L	ND	0.010	0.00069	09/30/20 17:26	

LABORATORY CONTROL SAMPLE: 3017843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	102	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Boron	mg/L	1	0.98	98	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.095	95	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.098	98	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017844 3017845

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92495894020	Spike Conc.	Spike Conc.	Result							Result
Antimony	mg/L	0.00029J	0.1	0.1	0.099	0.10	99	102	75-125	3	20	
Barium	mg/L	0.052	0.1	0.1	0.15	0.15	98	101	75-125	2	20	
Beryllium	mg/L	0.00011J	0.1	0.1	0.087	0.090	87	90	75-125	4	20	
Boron	mg/L	1.6	1	1	2.4	2.5	79	89	75-125	4	20	
Chromium	mg/L	0.00056J	0.1	0.1	0.093	0.094	93	93	75-125	1	20	
Cobalt	mg/L	0.0032J	0.1	0.1	0.094	0.096	91	92	75-125	2	20	
Lead	mg/L	0.00015J	0.1	0.1	0.093	0.093	93	92	75-125	0	20	
Lithium	mg/L	0.028J	0.1	0.1	0.12	0.12	87	89	75-125	2	20	
Molybdenum	mg/L	0.032	0.1	0.1	0.13	0.13	95	99	75-125	3	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 570626 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92495904012, 92495904013

METHOD BLANK: 3022872 Matrix: Water

Associated Lab Samples: 92495904012, 92495904013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/06/20 17:21	
Arsenic	mg/L	ND	0.0050	0.00078	10/06/20 17:21	
Barium	mg/L	ND	0.010	0.00071	10/06/20 17:21	
Beryllium	mg/L	ND	0.0030	0.000046	10/06/20 17:21	
Boron	mg/L	ND	0.10	0.0052	10/06/20 17:21	
Cadmium	mg/L	ND	0.0025	0.00012	10/06/20 17:21	
Chromium	mg/L	ND	0.010	0.00055	10/06/20 17:21	
Cobalt	mg/L	ND	0.0050	0.00038	10/06/20 17:21	
Lead	mg/L	ND	0.0050	0.000036	10/06/20 17:21	
Lithium	mg/L	ND	0.030	0.00081	10/06/20 17:21	
Molybdenum	mg/L	ND	0.010	0.00069	10/06/20 17:21	
Selenium	mg/L	ND	0.010	0.0016	10/06/20 17:21	
Thallium	mg/L	ND	0.0010	0.00014	10/06/20 17:21	

LABORATORY CONTROL SAMPLE: 3022873

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.12	116	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.096	96	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.094	94	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3022874 3022875

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496914020	Result	Spike Conc.	Spike Conc.								
Antimony	mg/L	ND	0.1	0.1	0.1	0.12	0.12	115	116	75-125	0	20	
Arsenic	mg/L	ND	0.1	0.1	0.1	0.097	0.098	97	98	75-125	2	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Parameter	Units	3022874		3022875		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92496914020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Barium	mg/L	0.15	0.1	0.1	0.25	0.25	102	99	75-125	1	20	
Beryllium	mg/L	0.00010J	0.1	0.1	0.095	0.096	95	96	75-125	1	20	
Boron	mg/L	0.17	1	1	1.1	1.1	94	95	75-125	1	20	
Cadmium	mg/L	ND	0.1	0.1	0.095	0.097	95	97	75-125	2	20	
Chromium	mg/L	0.00063J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.099	97	98	75-125	1	20	
Lead	mg/L	0.00014J	0.1	0.1	0.094	0.096	94	96	75-125	2	20	
Lithium	mg/L	0.019J	0.1	0.1	0.11	0.11	92	96	75-125	3	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	99	100	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.093	0.095	93	95	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
 Pace Project No.: 92495904

QC Batch: 570627 Analysis Method: EPA 6020B
 QC Batch Method: EPA 3005A Analysis Description: 6020 MET
 Laboratory: Pace Analytical Services - Peachtree Corners, GA
 Associated Lab Samples: 92495904014, 92495904015, 92495904016, 92495904017, 92495904018

METHOD BLANK: 3022878 Matrix: Water
 Associated Lab Samples: 92495904014, 92495904015, 92495904016, 92495904017, 92495904018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/05/20 18:29	
Barium	mg/L	ND	0.010	0.00071	10/05/20 18:29	
Beryllium	mg/L	ND	0.0030	0.000046	10/05/20 18:29	
Boron	mg/L	ND	0.10	0.0052	10/05/20 18:29	
Chromium	mg/L	ND	0.010	0.00055	10/05/20 18:29	
Cobalt	mg/L	ND	0.0050	0.00038	10/05/20 18:29	
Lead	mg/L	ND	0.0050	0.000036	10/05/20 18:29	
Lithium	mg/L	ND	0.030	0.00081	10/05/20 18:29	
Molybdenum	mg/L	ND	0.010	0.00069	10/05/20 18:29	

LABORATORY CONTROL SAMPLE: 3022879

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.096	96	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.097	97	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3022880 3022881

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92498084008 Result	Spike Conc.	Spike Conc.	Result							Result
Antimony	mg/L	ND	0.1	0.1	0.10	0.095	102	95	75-125	7	20	
Barium	mg/L	0.026	0.1	0.1	0.13	0.12	101	91	75-125	9	20	
Beryllium	mg/L	ND	0.1	0.1	0.099	0.096	99	96	75-125	4	20	
Boron	mg/L	0.053	1	1	1.1	1.1	105	103	75-125	2	20	
Chromium	mg/L	ND	0.1	0.1	0.10	0.096	103	95	75-125	8	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.093	100	93	75-125	7	20	
Lead	mg/L	ND	0.1	0.1	0.099	0.094	99	94	75-125	5	20	
Lithium	mg/L	ND	0.1	0.1	0.10	0.096	100	96	75-125	4	20	
Molybdenum	mg/L	0.0089J	0.1	0.1	0.11	0.10	100	93	75-125	7	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 572608 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495904005, 92495904006, 92495904012

METHOD BLANK: 3032633 Matrix: Water
Associated Lab Samples: 92495904005, 92495904006, 92495904012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000078	10/13/20 12:38	

LABORATORY CONTROL SAMPLE: 3032634

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3032635 3032636

Parameter	Units	3032635		3032636		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	ND	0.0025	0.0025	0.0026	97	102	75-125	5	20	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 567147	Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92495904004

METHOD BLANK: 3005362 Matrix: Water
Associated Lab Samples: 92495904004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/17/20 15:18	

LABORATORY CONTROL SAMPLE: 3005363

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	384	96	84-108	

SAMPLE DUPLICATE: 3005364

Parameter	Units	92495870005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 3005365

Parameter	Units	92495900007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1890	1860	2	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 568395 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495904007, 92495904008

METHOD BLANK: 3011476 Matrix: Water
Associated Lab Samples: 92495904007, 92495904008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/23/20 13:15	

LABORATORY CONTROL SAMPLE: 3011477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	375	94	84-108	

SAMPLE DUPLICATE: 3011478

Parameter	Units	92495894018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	382	404	6	10	

SAMPLE DUPLICATE: 3011479

Parameter	Units	92495870020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	93.0	91.0	2	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

QC Batch:	568648	Analysis Method:	SM 2450C-2011
QC Batch Method:	SM 2450C-2011	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92495904009, 92495904010, 92495904011

METHOD BLANK: 3012738 Matrix: Water

Associated Lab Samples: 92495904009, 92495904010, 92495904011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/24/20 10:26	

LABORATORY CONTROL SAMPLE: 3012739

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	390	98	84-108	

SAMPLE DUPLICATE: 3012740

Parameter	Units	92497007001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	207	204	1	10	

SAMPLE DUPLICATE: 3012944

Parameter	Units	92496771001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	158	157	1	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 570219 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495904012, 92495904013

METHOD BLANK: 3020458 Matrix: Water
Associated Lab Samples: 92495904012, 92495904013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	10/01/20 15:22	

LABORATORY CONTROL SAMPLE: 3020459

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 3020460

Parameter	Units	92497125005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	134	142	6	10	

SAMPLE DUPLICATE: 3020461

Parameter	Units	92497146006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	878	918	4	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 570220 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495904014, 92495904015

METHOD BLANK: 3020462 Matrix: Water
Associated Lab Samples: 92495904014, 92495904015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	10/01/20 15:26	

LABORATORY CONTROL SAMPLE: 3020463

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	411	103	84-108	

SAMPLE DUPLICATE: 3020464

Parameter	Units	92496524014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	188	205	9	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 570638 Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92495904016, 92495904017, 92495904018

METHOD BLANK: 3022933 Matrix: Water
Associated Lab Samples: 92495904016, 92495904017, 92495904018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	10/02/20 17:24	

LABORATORY CONTROL SAMPLE: 3022934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	419	105	84-108	

SAMPLE DUPLICATE: 3022936

Parameter	Units	92497532034 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 3023295

Parameter	Units	92497532027 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	243	245	1	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 568673 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92495904001, 92495904002, 92495904003, 92495904004, 92495904005, 92495904006

METHOD BLANK: 3012830 Matrix: Water
Associated Lab Samples: 92495904001, 92495904002, 92495904003, 92495904004, 92495904005, 92495904006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	5.0	09/24/20 13:03	
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	09/24/20 13:03	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	09/24/20 13:03	

LABORATORY CONTROL SAMPLE: 3012831

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	51.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012832 3012833

Parameter	Units	92495900001		3012833		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.						
Alkalinity, Total as CaCO ₃	mg/L	307	50	358	50	102	104	80-120	0	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012834 3012835

Parameter	Units	92495900007		3012835		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.						
Alkalinity, Total as CaCO ₃	mg/L	ND	50	42.7	50	85	84	80-120	1	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

QC Batch: 568970

Analysis Method: SM 2320B-2011

QC Batch Method: SM 2320B-2011

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92495904007, 92495904008

METHOD BLANK: 3014490

Matrix: Water

Associated Lab Samples: 92495904007, 92495904008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	5.0	09/30/20 11:38	
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	09/30/20 11:38	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	09/30/20 11:38	

LABORATORY CONTROL SAMPLE: 3014491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	52.5	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3014492 3014493

Parameter	Units	92495894013		3014493		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO ₃	mg/L	231	50	50	274	281	86	100	80-120	3	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3014494 3014495

Parameter	Units	92495894018		3014495		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO ₃	mg/L	288	50	50	343	338	111	100	80-120	2	25

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 569912 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92495904009, 92495904011

METHOD BLANK: 3018962 Matrix: Water
Associated Lab Samples: 92495904009, 92495904011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	5.0	09/30/20 15:43	
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	09/30/20 15:43	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	09/30/20 15:43	

LABORATORY CONTROL SAMPLE: 3018963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	50.4	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018964 3018965

Parameter	Units	92497388001		3018965		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Alkalinity, Total as CaCO ₃	mg/L	2670	50	50	2540	2630	-256	-85	80-120	3	25	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018966 3018967

Parameter	Units	92496574002		3018967		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Alkalinity, Total as CaCO ₃	mg/L	66.3	50	50	117	119	101	105	80-120	2	25	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 570242 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92495904010

METHOD BLANK: 3020557 Matrix: Water
Associated Lab Samples: 92495904010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	5.0	10/01/20 14:25	
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	10/01/20 14:25	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	10/01/20 14:25	

LABORATORY CONTROL SAMPLE: 3020558

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	48.2	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020559 3020560

Parameter	Units	92496574010		3020560		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO ₃	mg/L	20.2	50	50	70.4	71.4	100	102	80-120	1	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020561 3020562

Parameter	Units	92496574018		3020562		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Alkalinity, Total as CaCO ₃	mg/L	ND	50	50	51.4	51.5	103	103	80-120	0	25

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 571506 Analysis Method: SM 2320B-2011
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92495904012, 92495904013

METHOD BLANK: 3026929 Matrix: Water
Associated Lab Samples: 92495904012, 92495904013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	5.0	10/08/20 14:21	
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	10/08/20 14:21	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	10/08/20 14:21	

LABORATORY CONTROL SAMPLE: 3026930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	50.1	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3026931 3026932

Parameter	Units	92497532022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	231	50	50	288	286	114	110	80-120	1	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3026933 3026934

Parameter	Units	92497532028 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	90.3	50	50	141	143	101	104	80-120	1	25	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

QC Batch: 571655

Analysis Method: SM 2320B-2011

QC Batch Method: SM 2320B-2011

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92495904014, 92495904015, 92495904016, 92495904017, 92495904018

METHOD BLANK: 3027877

Matrix: Water

Associated Lab Samples: 92495904014, 92495904015, 92495904016, 92495904017, 92495904018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	5.0	5.0	10/08/20 18:28	
Alkalinity,Bicarbonate (CaCO ₃)	mg/L	ND	5.0	5.0	10/08/20 18:28	
Alkalinity,Carbonate (CaCO ₃)	mg/L	ND	5.0	5.0	10/08/20 18:28	

LABORATORY CONTROL SAMPLE: 3027878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	50.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3027879 3027880

Parameter	Units	92497913003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	57.8	50	50	108	109	100	103	80-120	1	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3029635 3029636

Parameter	Units	92495904018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO ₃	mg/L	313	50	50	353	358	79	90	80-120	2	25 M1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 568020 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: 92495904001, 92495904002, 92495904003, 92495904004, 92495904005, 92495904006

METHOD BLANK: 3009676 Matrix: Water
Associated Lab Samples: 92495904001, 92495904002, 92495904003, 92495904004, 92495904005, 92495904006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	09/22/20 14:09	

LABORATORY CONTROL SAMPLE: 3009677

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: 3009678 3009679

Parameter	Units	92495900001		3009679		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Sulfide	mg/L	ND	0.5	0.52	0.52	98	98	80-120	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009680 3009681

Parameter	Units	92495900002		3009681		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Sulfide	mg/L	ND	0.5	0.39	0.39	77	77	80-120	0	10 M1	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

QC Batch: 568022

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: 92495904007, 92495904008

METHOD BLANK: 3009689

Matrix: Water

Associated Lab Samples: 92495904007, 92495904008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	09/22/20 14:40	

LABORATORY CONTROL SAMPLE: 3009690

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.53	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009691 3009692

Parameter	Units	92495894013		3009692		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Sulfide	mg/L	ND	0.5	0.5	0.50	0.50	94	94	80-120	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3009693 3009694

Parameter	Units	92495894014		3009694		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Sulfide	mg/L	ND	0.5	0.5	0.51	0.51	98	98	80-120	0	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 568633 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: 92495904009, 92495904010, 92495904011

METHOD BLANK: 3012716 Matrix: Water
Associated Lab Samples: 92495904009, 92495904010, 92495904011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	09/24/20 11:36	

LABORATORY CONTROL SAMPLE: 3012717

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: 3012718 3012719

Parameter	Units	3012718		3012719		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92496675001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Sulfide	mg/L	ND	0.5	0.5	0.49	0.49	96	96	80-120	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3012720 3012721

Parameter	Units	3012720		3012721		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92496675002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Sulfide	mg/L	ND	0.5	0.5	0.45	0.45	83	83	80-120	0	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

QC Batch: 569580

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: 92495904012, 92495904013

METHOD BLANK: 3017581

Matrix: Water

Associated Lab Samples: 92495904012, 92495904013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	09/29/20 13:47	

LABORATORY CONTROL SAMPLE: 3017582

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.53	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3017583 3017584

Parameter	Units	92497532022		3017584		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Sulfide	mg/L	ND	0.5	0.5	0.18	0.19	31	32	80-120	2	10 M1

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 570214 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: 92495904014, 92495904015, 92495904016, 92495904017, 92495904018

METHOD BLANK: 3020426 Matrix: Water
Associated Lab Samples: 92495904014, 92495904015, 92495904016, 92495904017, 92495904018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	ND	0.10	0.050	10/01/20 12:47	

LABORATORY CONTROL SAMPLE: 3020427

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.5	0.55	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020428 3020429

Parameter	Units	3020428		3020429		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92497738004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Sulfide	mg/L	ND	0.5	0.5	0.55	0.55	108	108	80-120	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020430 3020431

Parameter	Units	3020430		3020431		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92497738003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Sulfide	mg/L	ND	0.5	0.5	0.56	0.56	109	109	80-120	0	10	

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 567529 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: 92495904001, 92495904002, 92495904003, 92495904004

METHOD BLANK: 3007534 Matrix: Water
Associated Lab Samples: 92495904001, 92495904002, 92495904003, 92495904004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/18/20 16:46	
Fluoride	mg/L	ND	0.10	0.050	09/18/20 16:46	
Sulfate	mg/L	ND	1.0	0.50	09/18/20 16:46	

LABORATORY CONTROL SAMPLE: 3007535

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.2	104	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	50	52.4	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007536 3007537

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496029001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	13.6	50	50	68.1	69.2	109	111	90-110	2	10	M1	
Fluoride	mg/L	0.10	2.5	2.5	2.8	2.9	109	112	90-110	3	10	M1	
Sulfate	mg/L	7.4	50	50	62.2	63.3	110	112	90-110	2	10	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007538 3007539

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495653005	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	5.5	50	50	58.5	62.8	106	115	90-110	7	10	M1	
Fluoride	mg/L	0.057J	2.5	2.5	2.8	3.0	108	116	90-110	7	10	M1	
Sulfate	mg/L	241	50	50	287	291	91	100	90-110	2	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 567607 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: 92495904005, 92495904006

METHOD BLANK: 3008004 Matrix: Water
Associated Lab Samples: 92495904005, 92495904006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/19/20 15:23	
Fluoride	mg/L	ND	0.10	0.050	09/19/20 15:23	
Sulfate	mg/L	ND	1.0	0.50	09/19/20 15:23	

LABORATORY CONTROL SAMPLE: 3008005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	52.3	105	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	50	52.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3008008 3008009

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495964005	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	7.9	50	50	61.3	62.0	107	108	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	107	108	90-110	1	10		
Sulfate	mg/L	256	50	50	298	299	85	87	90-110	0	10	M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3008006 3008007

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495653007	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	4.4	50	50	57.4	58.2	106	108	90-110	1	10		
Fluoride	mg/L	0.13	2.5	2.5	2.8	2.8	107	109	90-110	1	10		
Sulfate	mg/L	334	50	50	389	385	111	103	90-110	1	10	M6	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 568377 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: 92495904007, 92495904008

METHOD BLANK: 3011350 Matrix: Water
Associated Lab Samples: 92495904007, 92495904008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/24/20 06:58	
Fluoride	mg/L	ND	0.10	0.050	09/24/20 06:58	
Sulfate	mg/L	ND	1.0	0.50	09/24/20 06:58	

LABORATORY CONTROL SAMPLE: 3011351

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	2.6	102	90-110	
Sulfate	mg/L	50	50.1	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011352 3011353

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92495656005	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	1.9	50	50	55.8	56.2	108	109	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.8	2.8	109	110	90-110	1	10		
Sulfate	mg/L	5.9	50	50	59.3	59.6	107	108	90-110	1	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011354 3011355

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92496524001	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	2.6	50	50	56.8	57.6	108	110	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.7	2.8	108	110	90-110	2	10		
Sulfate	mg/L	1.0	50	50	54.0	54.8	106	108	90-110	1	10		

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 568379 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: 92495904009, 92495904010, 92495904011

METHOD BLANK: 3011360 Matrix: Water
Associated Lab Samples: 92495904009, 92495904010, 92495904011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	09/24/20 14:11	
Fluoride	mg/L	ND	0.10	0.050	09/24/20 14:11	
Sulfate	mg/L	ND	1.0	0.50	09/24/20 14:11	

LABORATORY CONTROL SAMPLE: 3011361

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.6	103	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	50.7	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011362 3011363

Parameter	Units	92495870024		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	0.64J	50	50	54.6	55.2	108	109	90-110	1	10		
Fluoride	mg/L	ND	2.5	2.5	2.8	2.8	110	110	90-110	0	10		
Sulfate	mg/L	0.90J	50	50	53.7	54.3	106	107	90-110	1	10		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3011364 3011365

Parameter	Units	92495900019		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	236	50	50	284	284	96	95	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.4	2.5	96	100	90-110	4	10		
Sulfate	mg/L	1010	50	50	1040	1040	78	68	90-110	1	10 M6		

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QUALITY CONTROL DATA

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

QC Batch: 570137 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: 92495904012, 92495904013, 92495904014, 92495904015, 92495904016, 92495904017, 92495904018

METHOD BLANK: 3020267 Matrix: Water
Associated Lab Samples: 92495904012, 92495904013, 92495904014, 92495904015, 92495904016, 92495904017, 92495904018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/01/20 07:56	
Fluoride	mg/L	ND	0.10	0.050	10/01/20 07:56	
Sulfate	mg/L	ND	1.0	0.50	10/01/20 07:56	

LABORATORY CONTROL SAMPLE: 3020268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	53.3	107	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	50	53.4	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020269 3020270

Parameter	Units	92495894028		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	542	50	50	583	587	82	89	90-110	1	10	M6	
Fluoride	mg/L	0.41	2.5	2.5	3.2	3.1	110	109	90-110	1	10		
Sulfate	mg/L	3480	50	50	3520	3530	86	111	90-110	0	10	M6	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020271 3020272

Parameter	Units	92496914018		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	1.6	50	50	56.0	56.5	109	110	90-110	1	10		
Fluoride	mg/L	0.063J	2.5	2.5	2.8	2.8	109	111	90-110	2	10	M1	
Sulfate	mg/L	110	50	50	160	161	101	103	90-110	1	10		

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QUALIFIERS

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

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

B Analyte was detected in the associated method blank.

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

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495904001	HGWA-1				
92495904002	HGWA-2				
92495904003	HGWA-3				
92495904004	HGWA-122				
92495904005	HGWA-43D				
92495904006	HGWA-44D				
92495904007	HGWC-126				
92495904009	HGWC-120				
92495904011	HGWC-125				
92495904012	HGWA-45D				
92495904013	MW-46D				
92495904014	HGWC-121A				
92495904015	HGWC-124				
92495904016	MW-32				
92495904017	MW-39				
92495904018	MW-41				
92495904001	HGWA-1	EPA 3010A	568201	EPA 6010D	568230
92495904002	HGWA-2	EPA 3010A	568201	EPA 6010D	568230
92495904003	HGWA-3	EPA 3010A	568201	EPA 6010D	568230
92495904004	HGWA-122	EPA 3010A	568747	EPA 6010D	568813
92495904005	HGWA-43D	EPA 3010A	568201	EPA 6010D	568230
92495904006	HGWA-44D	EPA 3010A	568201	EPA 6010D	568230
92495904007	HGWC-126	EPA 3010A	568747	EPA 6010D	568813
92495904008	FB-03	EPA 3010A	568747	EPA 6010D	568813
92495904009	HGWC-120	EPA 3010A	568748	EPA 6010D	568812
92495904010	FD-03	EPA 3010A	568748	EPA 6010D	568812
92495904011	HGWC-125	EPA 3010A	568748	EPA 6010D	568812
92495904012	HGWA-45D	EPA 3010A	570395	EPA 6010D	570414
92495904013	MW-46D	EPA 3010A	570395	EPA 6010D	570414
92495904014	HGWC-121A	EPA 3010A	570395	EPA 6010D	570414
92495904015	HGWC-124	EPA 3010A	570395	EPA 6010D	570414
92495904016	MW-32	EPA 3010A	570395	EPA 6010D	570414
92495904017	MW-39	EPA 3010A	570395	EPA 6010D	570414
92495904018	MW-41	EPA 3010A	570395	EPA 6010D	570414
92495904001	HGWA-1	EPA 3005A	568198	EPA 6020B	568229
92495904002	HGWA-2	EPA 3005A	568198	EPA 6020B	568229
92495904003	HGWA-3	EPA 3005A	568198	EPA 6020B	568229
92495904004	HGWA-122	EPA 3005A	568417	EPA 6020B	568454
92495904005	HGWA-43D	EPA 3005A	568198	EPA 6020B	568229
92495904006	HGWA-44D	EPA 3005A	568198	EPA 6020B	568229
92495904007	HGWC-126	EPA 3005A	568749	EPA 6020B	568811
92495904008	FB-03	EPA 3005A	568749	EPA 6020B	568811
92495904009	HGWC-120	EPA 3005A	569670	EPA 6020B	569718

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495904010	FD-03	EPA 3005A	569670	EPA 6020B	569718
92495904011	HGWC-125	EPA 3005A	569670	EPA 6020B	569718
92495904012	HGWA-45D	EPA 3005A	570626	EPA 6020B	570683
92495904013	MW-46D	EPA 3005A	570626	EPA 6020B	570683
92495904014	HGWC-121A	EPA 3005A	570627	EPA 6020B	570682
92495904015	HGWC-124	EPA 3005A	570627	EPA 6020B	570682
92495904016	MW-32	EPA 3005A	570627	EPA 6020B	570682
92495904017	MW-39	EPA 3005A	570627	EPA 6020B	570682
92495904018	MW-41	EPA 3005A	570627	EPA 6020B	570682
92495904005	HGWA-43D	EPA 7470A	572608	EPA 7470A	572822
92495904006	HGWA-44D	EPA 7470A	572608	EPA 7470A	572822
92495904012	HGWA-45D	EPA 7470A	572608	EPA 7470A	572822
92495904001	HGWA-1	SM 2450C-2011	567872		
92495904002	HGWA-2	SM 2450C-2011	567872		
92495904003	HGWA-3	SM 2450C-2011	567872		
92495904004	HGWA-122	SM 2450C-2011	567147		
92495904005	HGWA-43D	SM 2450C-2011	567872		
92495904006	HGWA-44D	SM 2450C-2011	567872		
92495904007	HGWC-126	SM 2450C-2011	568395		
92495904008	FB-03	SM 2450C-2011	568395		
92495904009	HGWC-120	SM 2450C-2011	568648		
92495904010	FD-03	SM 2450C-2011	568648		
92495904011	HGWC-125	SM 2450C-2011	568648		
92495904012	HGWA-45D	SM 2450C-2011	570219		
92495904013	MW-46D	SM 2450C-2011	570219		
92495904014	HGWC-121A	SM 2450C-2011	570220		
92495904015	HGWC-124	SM 2450C-2011	570220		
92495904016	MW-32	SM 2450C-2011	570638		
92495904017	MW-39	SM 2450C-2011	570638		
92495904018	MW-41	SM 2450C-2011	570638		
92495904001	HGWA-1	SM 2320B-2011	568673		
92495904002	HGWA-2	SM 2320B-2011	568673		
92495904003	HGWA-3	SM 2320B-2011	568673		
92495904004	HGWA-122	SM 2320B-2011	568673		
92495904005	HGWA-43D	SM 2320B-2011	568673		
92495904006	HGWA-44D	SM 2320B-2011	568673		
92495904007	HGWC-126	SM 2320B-2011	568970		
92495904008	FB-03	SM 2320B-2011	568970		
92495904009	HGWC-120	SM 2320B-2011	569912		
92495904010	FD-03	SM 2320B-2011	570242		
92495904011	HGWC-125	SM 2320B-2011	569912		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 SEMIANNUAL

Pace Project No.: 92495904

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495904012	HGWA-45D	SM 2320B-2011	571506		
92495904013	MW-46D	SM 2320B-2011	571506		
92495904014	HGWC-121A	SM 2320B-2011	571655		
92495904015	HGWC-124	SM 2320B-2011	571655		
92495904016	MW-32	SM 2320B-2011	571655		
92495904017	MW-39	SM 2320B-2011	571655		
92495904018	MW-41	SM 2320B-2011	571655		
92495904001	HGWA-1	SM 4500-S2D-2011	568020		
92495904002	HGWA-2	SM 4500-S2D-2011	568020		
92495904003	HGWA-3	SM 4500-S2D-2011	568020		
92495904004	HGWA-122	SM 4500-S2D-2011	568020		
92495904005	HGWA-43D	SM 4500-S2D-2011	568020		
92495904006	HGWA-44D	SM 4500-S2D-2011	568020		
92495904007	HGWC-126	SM 4500-S2D-2011	568022		
92495904008	FB-03	SM 4500-S2D-2011	568022		
92495904009	HGWC-120	SM 4500-S2D-2011	568633		
92495904010	FD-03	SM 4500-S2D-2011	568633		
92495904011	HGWC-125	SM 4500-S2D-2011	568633		
92495904012	HGWA-45D	SM 4500-S2D-2011	569580		
92495904013	MW-46D	SM 4500-S2D-2011	569580		
92495904014	HGWC-121A	SM 4500-S2D-2011	570214		
92495904015	HGWC-124	SM 4500-S2D-2011	570214		
92495904016	MW-32	SM 4500-S2D-2011	570214		
92495904017	MW-39	SM 4500-S2D-2011	570214		
92495904018	MW-41	SM 4500-S2D-2011	570214		
92495904001	HGWA-1	EPA 300.0 Rev 2.1 1993	567529		
92495904002	HGWA-2	EPA 300.0 Rev 2.1 1993	567529		
92495904003	HGWA-3	EPA 300.0 Rev 2.1 1993	567529		
92495904004	HGWA-122	EPA 300.0 Rev 2.1 1993	567529		
92495904005	HGWA-43D	EPA 300.0 Rev 2.1 1993	567607		
92495904006	HGWA-44D	EPA 300.0 Rev 2.1 1993	567607		
92495904007	HGWC-126	EPA 300.0 Rev 2.1 1993	568377		
92495904008	FB-03	EPA 300.0 Rev 2.1 1993	568377		
92495904009	HGWC-120	EPA 300.0 Rev 2.1 1993	568379		
92495904010	FD-03	EPA 300.0 Rev 2.1 1993	568379		
92495904011	HGWC-125	EPA 300.0 Rev 2.1 1993	568379		
92495904012	HGWA-45D	EPA 300.0 Rev 2.1 1993	570137		
92495904013	MW-46D	EPA 300.0 Rev 2.1 1993	570137		
92495904014	HGWC-121A	EPA 300.0 Rev 2.1 1993	570137		
92495904015	HGWC-124	EPA 300.0 Rev 2.1 1993	570137		
92495904016	MW-32	EPA 300.0 Rev 2.1 1993	570137		
92495904017	MW-39	EPA 300.0 Rev 2.1 1993	570137		
92495904018	MW-41	EPA 300.0 Rev 2.1 1993	570137		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 SEMIANNUAL
Pace Project No.: 92495904

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
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Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power

WO# : 92495904



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

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

Date and initials of person examining contents: 9/16/2004

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 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)	<u>all</u> <input checked="" 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 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



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 Required Client Information Company: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: _____ Requested Due Date/TAT: _____ to Day		Section B Required Project Information Report To: SCS Contacts Copy To: Geosynthetic Contacts Purchase Order No.: _____ Project Name: Plant Hammond AP-3 Semianual/BKG 04 Project Number: GWM6581		Section C Invoice Information Attention: Southern Co. Company Name: _____ Address: _____ Parcel Date: _____ Parcel Project Manager: Kevin Herring Parcel Project Manager: _____ Parcel Project #: 10839-S/10839-2	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER COM			Site Location: _____ STATE: GA		

ITEM #	Valid Matrix Codes MATRIX CODE MATRIX CODE (see valid codes to list)	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)	SAMPLE CONDITIONS
			DATE	TIME					DATE	TIME		
1	HGWA-1	WT G	9-15-20	11:18	-	7	Unpreserved	Chloride, Fluoride, Sulfate	X	N	X	Temp in °C
2	HGWA-2	WT G	9-15-20	11:58	-	7	H ₂ SO ₄	TDS	X	N	X	Received on ice (Y/N)
3	HGWA-3	WT G				7	HNO ₃	App. III&IV Metals 6010/6020*	X	N	X	Custody Sealed Cooler (Y/N)
4	HGWA-4	WT G				7	HCl	RAD 226/228	X	N	X	Samples Intact (Y/N)
5	HGWA-5	WT G				7	NaOH	Major Ions**	X	N	X	
6	HGWA-6	WT G				7	Na ₂ S ₂ O ₃		X	N	X	
7	HGWA-7	WT G				7	Methanol		X	N	X	
8	HGWA-8	WT G				7	Other		X	N	X	
9	HGWA-9	WT G				7			X	N	X	
10	HGWA-10	WT G				7			X	N	X	
11	HGWA-11	WT G				7			X	N	X	
12	HGWA-12	WT G				7			X	N	X	
13	HGWA-13	WT G				7			X	N	X	
14	HGWA-14	WT G				7			X	N	X	
15	HGWA-15	WT G				7			X	N	X	
16	HGWA-16	WT G				7			X	N	X	
17	HGWA-17	WT G				7			X	N	X	
18	HGWA-18	WT G				7			X	N	X	
19	HGWA-19	WT G				7			X	N	X	
20	HGWA-20	WT G				7			X	N	X	
21	HGWA-21	WT G				7			X	N	X	
22	HGWA-22	WT G				7			X	N	X	
23	HGWA-23	WT G				7			X	N	X	
24	HGWA-24	WT G				7			X	N	X	
25	HGWA-25	WT G				7			X	N	X	
26	HGWA-26	WT G				7			X	N	X	
27	HGWA-27	WT G				7			X	N	X	
28	HGWA-28	WT G				7			X	N	X	
29	HGWA-29	WT G				7			X	N	X	
30	HGWA-30	WT G				7			X	N	X	
31	HGWA-31	WT G				7			X	N	X	
32	HGWA-32	WT G				7			X	N	X	
33	HGWA-33	WT G				7			X	N	X	
34	HGWA-34	WT G				7			X	N	X	
35	HGWA-35	WT G				7			X	N	X	
36	HGWA-36	WT G				7			X	N	X	
37	HGWA-37	WT G				7			X	N	X	
38	HGWA-38	WT G				7			X	N	X	
39	HGWA-39	WT G				7			X	N	X	
40	HGWA-40	WT G				7			X	N	X	
41	HGWA-41	WT G				7			X	N	X	
42	HGWA-42	WT G				7			X	N	X	
43	HGWA-43	WT G				7			X	N	X	
44	HGWA-44	WT G				7			X	N	X	
45	HGWA-45	WT G				7			X	N	X	
46	HGWA-46	WT G				7			X	N	X	
47	HGWA-47	WT G				7			X	N	X	
48	HGWA-48	WT G				7			X	N	X	
49	HGWA-49	WT G				7			X	N	X	
50	HGWA-50	WT G				7			X	N	X	

Additional Comments: _____

REINQUISHED 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): _____

PH = 7.15
PH = 5.22
PH = 5.22

Face Project No/ Lab ID: 1244794

Signature: _____

DATE Signed: 9-15-20

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to his charges of 1.5% per month for any invoices not paid within 30 days



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: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: Fax Requested Date Analyzed: 10 Day		Section B Required Project Information Report To: SCS Contacts Copy To: Geosynetic Contacts Purchase Order No.: Project Name: Plant Hammond AP-3-Semiannual/BG 04 Project Number: GW6581		Section C Invoice Information Attention: Southern Co. Company Name: Address: POC Name: Kevin Herring POC Title: Manager POC Phone: 10839-5/10839-2 POC Email:	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> UST <input type="checkbox"/> GROUND WATER <input checked="" type="checkbox"/> RCRA <input type="checkbox"/> OTHER COR		Site Location STATE: GA		Requested Analysis Filtered (Y/N) Chloride, Fluoride, Sulfate: N N N N N TDS: N N N N N App. III&IV Metals 6010/6020*: N N N N N RAD 228/228: N N N N N Major Ions**: N N N N N	

ITEM #	Section D Required Client Information Valid Matrix Codes MATRIX CODE (see valid codes to left)	Section E Sample Information MATRIX CODE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test						Residual Chlorine (Y/N)	Pace Project No./ Lab ID.
			DATE	TIME					Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Chloride, Fluoride, Sulfate	TDS	App. III&IV Metals 6010/6020*	RAD 228/228		
1	HQWA-1	WT G	9/15	1445	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
2	HQWA-2	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
3	HQWA-3	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
4	HQWA-122	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
6	HQWA-120	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
6	HQWA-121A	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
7	HQWA-124	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
8	HQWA-32	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
8	HQWA-20	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
10	HQWA-44	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
11	HQWA-40B	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		
12	HQWA-40	WT G	9/15	1541	73	3	3	1	X	X	X	X	X	X	X	X	X	X	X	N		

Additional Comments: *Good Rupter / 500*

Relinquished By / Affiliation: *Nellis M. Wilson / Pace*

Accepted By / Affiliation: *Charles DeHalle*

DATE	TIME	DATE	TIME
9/15/20	1820	9/15/20	1820
9/16/20	1113	9/16/20	1114
9/16/20	1450	9/16/20	1450

Temp in °C: _____

Received on Ice (Y/N): _____

Custody Sealed Cooler (Y/N): _____

Samples Intact (Y/N): _____

Signature: *Good Rupter*

Date Signed: *9/15/2020*

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



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: GA Power
 Address: Atlanta GA
 Email To: SCS Contacts
 Phone: Fax
 Requested Due Date/TAT: 10 Day

Section B Required Project Information:
 Report To: SCS Contacts
 Copy To: Geosynthetic Contacts
 Purchase Order No.:
 Project Name: Plant Hammond AP-3 Semiannual/BK0 04
 Project Number: GW65811

Section C Invoice Information:
 Attention: Southern Co.
 Company Name:
 Address:
 Phone:
 Reference:
 Trace Project: Kevin Herring
 Trace Profile #: 10839-4/10839-2

REGULATORY AGENCY
 NPDES GROUND WATER
 UST RCRA DRINKING WATER
 OTHER CCR

Site Location: STATE: GA

Page: 1 of 1

Section D Required Client Information
 Valid Matrix Codes: DRINKING WATER, WASTE WATER, PRODUCT, OIL, WPE, AIR, OTHER, TISSUE
 MATRIX CODE (see valid codes to left)
 SAMPLE TYPE (G=GRAB C=COMP)
 COLLECTED DATE TIME DATE TIME
 SAMPLE TEMP AT COLLECTION
 # OF CONTAINERS
 Unpreserved: H₂SO₄, HNO₃, HCl, NaOH, Na₂S₂O₃, Methanol, Other
 Preservatives: Y/N
 Analysis Test: Chloride, Fluoride, Sulfate, TDS, Full App. III&IV Metals 6010/6020/7, RAD 226/228, Major ions**
 Requested Analysis Filtered (Y/N)
 Residual Chlorine (Y/N)

ITEM #	HQ/MC-125	HQ/MC-126	MW-43D	MW-44D	MW-45D	FB-03
1	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
2	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
3	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
4	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
5	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
6	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
7	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
8	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
9	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
10	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
11	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	
12	HQ/MC-125	MW-43D	MW-44D	MW-45D	FB-03	

ADDITIONAL COMMENTS
 Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.
 Full App. III & IV Metals-Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mn, Se, Tl

RELEASUED BY / AFFILIATION
 Chad Russel / GEC
 9/16/2019
 13:05

ACCEPTED BY / AFFILIATION
 Chad Russel / GEC
 9/16/2019
 13:05

SAMPLE CONDITIONS
 Temp in °C: 41.1
 Received on Ice (Y/N): Y
 Custody Sealed Cooler (Y/N): Y
 Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Chad Russel
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 9/16/2020

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



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: GA Power Address: Atlanta, GA

Section B Required Project Information: Report to: SCS Contacts Copy To: Geosyntec Contacts

Section C Invoice Information: Attention: Southern Co. Company Name: Address: Pace Quote Reference: Kevin Herring Manager: Pace Profile #: 108339-4/10839-2

Page: 1 of 1

Section D Valid Matrix Codes: PERMITS, WASTE WATER, WWT, PRODUCT, SOURCE, DIL, WVE, AIR, OTHER, TSS, etc.

Section E Matrix Code: (see valid codes to left)

Section F Sample Type: (G=GRAB C=COMP)

Section G Collected: (DATE, TIME)

Section H Sample Temp at Collection

Section I # of Containers: Unpreserved, H₂SO₄, HNO₃, HCl, NaOH, Na₂S₂O₃, Methanol, Other

Section J Analysis Test: Chloride, Fluoride, Sulfate, TDS, Full App. III&IV Metals 6010/6020/7, RAD 226/228, Major ions**

Section K Requested Analysis Filtered (Y/N)

Section L Regulatory Agency: NPDES, GROUND WATER, DRINKING WATER, UST, RCRA, OTHER CCR

Section M Site Location: STATE: GA

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE	SAMPLE TYPE	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	PH
1	HGWC-125		WT G	G	9/18	1539				7		X	X	X	6.77
2	HGWC-126		WT G	G						7		X	X	X	
3	MW-43D		WT G	G						7		X	X	X	
4	MW-44D		WT G	G						7		X	X	X	
5	MW-45D		WT G	G						7		X	X	X	
6	FB-03		WT G	G	9/18	1655				7		X	X	X	
7															
8															
9															
10															
11															
12															

Section N Additional Comments: Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.

Section O Relinquished by Affiliation: Name: Mad Ruzer, Date: 9/18/20, Time: 1508

Section P Accepted by Affiliation: Name: Mad Ruzer, Date: 9/21/20, Time: 0925

Section Q Sampler Name and Signature: Name: Mad Ruzer, Signature: [Signature]

Section R Date Signed (MM/DD/YYYY): 9/18/2020

Section S Temp in °C: 36.5

Section T Received on Ice (Y/N): Y

Section U Custody Sealed Cooler (Y/N): Y

Section V Samples Intact (Y/N): Y

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev 07_15-Feb-2007



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: GA Power Address: Atlanta GA

Section B Required Project Information: Report to: SCS Contacts Cop/ To: Geosynlec Contacts

Section C Invoice Information: Attention: Southern Co. Company Name: Address: P.O. Box 1246 Peachtree City, GA 30142

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER CCR

Requested Date/Time: 10 Day
 Project Name: Plant Hammond AP-3 Semiannual/BKG 04
 Project Number: GW6581
 Requested Analysis Filtered (Y/N):
 State: GA

ITEM #	Section D Required Client Information Valid Matrix Codes 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 = 6.22 Pace Project No./ Lab I.D. 12165004
			DATE	TIME			H ₂ SO ₄	HNO ₃	HCl				
1	HGWC-125	WT G	9/21	12:07	20	7	3	3	1	X	X	X	X
2	HGWC-126	WT G				7	3	3	1	X	X	X	X
3	MM-430	WT G				7	3	3	1	X	X	X	X
4	MM-420	WT G				7	3	3	1	X	X	X	X
5	MM-450	WT G				7	3	3	1	X	X	X	X
6	FB-03	WT G				7	3	3	1	X	X	X	X
7													
8													
9													
10													
11													
12													

ADDITIONAL COMMENTS
 Please note dry wells strike through any wells not sampled, and note when the last sample for the event has been taken.
 Full App. III & IV Metals=Sh, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, Li, Hg, Mn, Se, Ti
 **Major ions= Alk, Grand Alk, Fe, Mg, Mn, K, Na, Sulfide

RELINQUISHED BY / AFFILIATION
 Date: 9/21/10 Time: 11:10
 Signature: [Signature]
 Affiliation: [Affiliation]

ACCEPTED BY / AFFILIATION
 Date: 9/21/10 Time: 12:15
 Signature: [Signature]
 Affiliation: [Affiliation]

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Chad Russo
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YY): 9/21/10

SAMPLE CONDITIONS
 Temp in °C: 41
 Received on Ice (Y/N): Y
 Custody Sealed Cooler (Y/N): N
 Samples Intact (Y/N): Y

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days.
F-ALL-Q-020/rev.07, 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 2 of 2

Section A Required Client Information: Company: <u>GA Power</u> Address: <u>Atlanta, GA</u> Email To: <u>SCS Contacts</u> Phone: <u> </u> Fax: <u> </u> Requested Due Date/TAT: <u>to day</u>	Section B Required Project Information: Report To: <u>SCS Contacts</u> Copy To: <u>Geosyntec Contacts</u> Purchase Order No.: <u> </u> Project Name: <u>Plant Hamilton AP-3 Savannah/BKG 04</u> Project Number: <u>GW6581</u>
Section C Invoice Information: Attention: <u>Southern Co.</u> Company Name: <u> </u> Address: <u> </u> Price Quote Reference Price Project Manager: <u>Kevin Herring</u> Price Profile #: <u>10839-S/10839-2</u>	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER COR	
Site Location: <u>GA</u> STATE: <u>GA</u>	

ITEM #	Section D Required Client Information Valid Matrix Codes MATRIX CODE SAMPLE TYPE (G=GRAB C=COMP) DATE TIME DATE TIME SAMPLE TEMP AT COLLECTION # OF CONTAINERS Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other Analysis Test Chloride, Fluoride, Sulfate TDS App. III&IV Metals 6010/6020* RAD 228/228 Major ions** Residual Chlorine (Y/N) pH = <u>7.56</u>	Section B Report To: SCS Contacts Copy To: Geosyntec Contacts Purchase Order No.: Project Name: Plant Hamilton AP-3 Savannah/BKG 04 Project Number: GW6581	Section C Attention: Southern Co. Company Name: Address: Price Quote Reference Price Project Manager: Kevin Herring Price Profile #: 10839-S/10839-2	COLLECTED		PRESERVED		ANALYSIS TEST		SAMPLER NAME AND SIGNATURE		SAMPLER CONDITIONS						
				DATE	TIME	DATE	TIME	Y	N	Y	N	Y	N	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)
1	HQWA-1 WT G 9-25-20 1110										WKSASH THURGOOD	9-25-20 1720						
2	HQWA-2 WT G										Geo	9-25-20 2030						
3	HQWA-3 WT G										WKSASH THURGOOD	9-25-20 1350						
4	HQWA-4 WT G										WKSASH THURGOOD	9-25-20 1350						
5	HQWA-5 WT G										WKSASH THURGOOD	9-25-20 1350						
6	HQWA-6 WT G										WKSASH THURGOOD	9-25-20 1350						
7	HQWA-7 WT G										WKSASH THURGOOD	9-25-20 1350						
8	HQWA-8 WT G										WKSASH THURGOOD	9-25-20 1350						
9	HQWA-9 WT G										WKSASH THURGOOD	9-25-20 1350						
10	HQWA-10 WT G										WKSASH THURGOOD	9-25-20 1350						
11	HQWA-11 WT G										WKSASH THURGOOD	9-25-20 1350						
12	HQWA-12 WT G										WKSASH THURGOOD	9-25-20 1350						

Additional Comments:

Requisitioned By: WKSASH THURGOOD Affiliation: Date: 9-25-20 Time: 1350

Accepted By: Affiliation: Date: 9-25-20 Time: 1350

Sampler Name and Signature: WKSASH THURGOOD

Print Name of Sampler: WKSASH THURGOOD Date Signed (MM/DD/YYYY): 9-25-20

Signature of Sampler:

Temp in °C: Received on Ice (Y/N): Custody Sealed Cooler (Y/N): Samples Intact (Y/N):

Temp in °C: Received on Ice (Y/N): Custody Sealed Cooler (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 Required Client Information: Company GA Power, Address Atlanta, GA, Email, SCS Contacts, Phone, Requested Due Date/TAT: 10 Day

Section B Required Project Information: Report To SCS Contacts, Copy To: Geosynlec Contacts, Purchase Order No., Project Name: Plant Hammond AP-3 Semiannual/RKG 04, Project Number: GW6581

Section C Invoice Information: Attention Southern Co., Company Name: Kevin Herring, Address: 10839-S/10839-2, Price Quote: 10839-S/10839-2, Price Project: Kevin Herring, Price Project #: 10839-S/10839-2

REGULATORY AGENCY: NPDES, GROUND WATER, DRINKING WATER, UST, ROBA, OTHER COR, Site Location: GA, STATE: GA

Table with columns: ITEM #, Section D Required Client Information, Valid Matrix Codes, MATRIX CODE, SAMPLE TYPE, DATE, TIME, SAMPLE TEMP AT COLLECTION, # OF CONTAINERS, Preservatives, Analysis Test, Requested Analysis Filtered (Y/N), Residual Chlorine (Y/N), and SAMPLE CONDITIONS.

Main data table with columns: ITEM #, Section D Required Client Information, Valid Matrix Codes, MATRIX CODE, SAMPLE TYPE, DATE, TIME, SAMPLE TEMP AT COLLECTION, # OF CONTAINERS, Preservatives, Analysis Test, Requested Analysis Filtered (Y/N), Residual Chlorine (Y/N), and SAMPLE CONDITIONS. Includes handwritten entries for sample IDs and results.

Sampler Name and Signature section: PRINT Name of SAMPLER: Aaron Reizen, SIGNATURE of SAMPLER: [Signature], DATE Signed (MM/DD/YYYY): 09/28/2020

Important Note: By signing this form you are accepting Pecc's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

October 21, 2020

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

RE: Project: HAMMOND AP-3 SEMIANNUAL RADS
Pace Project No.: 92495892

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 16, 2020 and September 29, 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: Christine Hug, Geosyntec Consultants, Inc.
Kristen Jurinko
Thomas Kessler, Geosyntec
Whitney Law, Geosyntec Consultants
Noelia Muskus, Geosyntec Consultants
Ms. Lauren Petty, Southern Co. Services
Nardos Tilahun, GeoSyntec
Dawit Yifru, Geosyntec Consultants, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: HAMMOND AP-3 SEMIANNUAL RAD5
Pace Project No.: 92495892

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: HAMMOND AP-3 SEMIANNUAL RADS
Pace Project No.: 92495892

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92495892001	HGWA-1	Water	09/15/20 14:01	09/16/20 11:14
92495892002	HGWA-2	Water	09/15/20 10:58	09/16/20 11:14
92495892003	HGWA-3	Water	09/15/20 11:45	09/16/20 11:14
92495892004	HGWA-122	Water	09/15/20 15:41	09/16/20 11:14
92495892005	HGWA-43D	Water	09/16/20 11:58	09/17/20 09:45
92495892006	HGWA-44D	Water	09/16/20 15:18	09/17/20 09:45
92495892007	HGWC-126	Water	09/18/20 15:39	09/21/20 09:25
92495892008	FB-03	Water	09/18/20 16:50	09/21/20 09:25
92495892009	HGWC-120	Water	09/21/20 13:48	09/22/20 09:25
92495892010	FD-03	Water	09/21/20 00:00	09/22/20 09:25
92495892011	HGWC-125	Water	09/21/20 12:07	09/22/20 09:25
92495892012	HGWA-45D	Water	09/25/20 13:50	09/28/20 09:40
92495892013	MW-46D	Water	09/25/20 11:10	09/28/20 09:40
92495892014	HGWC-121A	Water	09/28/20 16:04	09/29/20 08:55
92495892015	HGWC-124	Water	09/28/20 18:00	09/29/20 08:55
92495892016	MW-32	Water	09/28/20 15:44	09/29/20 08:55
92495892017	MW-39	Water	09/28/20 17:27	09/29/20 08:55
92495892018	MW-41	Water	09/28/20 19:05	09/29/20 08:55

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 SEMIANNUAL RADS
Pace Project No.: 92495892

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92495892001	HGWA-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92495892002	HGWA-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92495892003	HGWA-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92495892004	HGWA-122	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92495892005	HGWA-43D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495892006	HGWA-44D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495892007	HGWC-126	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495892008	FB-03	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495892009	HGWC-120	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495892010	FD-03	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495892011	HGWC-125	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495892012	HGWA-45D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92495892013	MW-46D	EPA 9315	LAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: HAMMOND AP-3 SEMIANNUAL RADS
Pace Project No.: 92495892

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92495892014	HGWC-121A	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
92495892015	HGWC-124	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
92495892016	MW-32	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
92495892017	MW-39	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
92495892018	MW-41	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

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL RADS
 Pace Project No.: 92495892

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495892001	HGWA-1					
EPA 9315	Radium-226	0.0193 ± 0.226 (0.595) C:83% T:NA	pCi/L		10/07/20 07:29	
EPA 9320	Radium-228	0.729 ± 0.435 (0.807) C:71% T:83%	pCi/L		10/07/20 14:00	
Total Radium Calculation	Total Radium	0.748 ± 0.661 (1.40)	pCi/L		10/19/20 09:49	
92495892002	HGWA-2					
EPA 9315	Radium-226	0.124 ± 0.339 (0.807) C:88% T:NA	pCi/L		10/07/20 07:30	
EPA 9320	Radium-228	-0.233 ± 0.417 (1.01) C:66% T:81%	pCi/L		10/07/20 14:00	
Total Radium Calculation	Total Radium	0.124 ± 0.756 (1.82)	pCi/L		10/16/20 12:16	
92495892003	HGWA-3					
EPA 9315	Radium-226	0.161 ± 0.215 (0.449) C:89% T:NA	pCi/L		10/07/20 07:30	
EPA 9320	Radium-228	-0.305 ± 0.343 (0.865) C:74% T:83%	pCi/L		10/07/20 14:00	
Total Radium Calculation	Total Radium	0.161 ± 0.558 (1.31)	pCi/L		10/16/20 12:16	
92495892004	HGWA-122					
EPA 9315	Radium-226	0.192 ± 0.240 (0.500) C:88% T:NA	pCi/L		10/14/20 07:29	
EPA 9320	Radium-228	0.183 ± 0.426 (0.945) C:69% T:80%	pCi/L		10/15/20 14:29	
Total Radium Calculation	Total Radium	0.375 ± 0.666 (1.45)	pCi/L		10/16/20 12:16	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL RADS
Pace Project No.: 92495892

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495892005	HGWA-43D					
EPA 9315	Radium-226	0.531 ± 0.341 (0.558)	pCi/L		10/07/20 07:38	
EPA 9320	Radium-228	C:83% T:NA -0.0158 ± 0.401 (0.931)	pCi/L		10/08/20 11:52	
Total Radium Calculation	Total Radium	C:73% T:74% 0.531 ± 0.742 (1.49)	pCi/L		10/20/20 08:55	
92495892006	HGWA-44D					
EPA 9315	Radium-226	0.129 ± 0.179 (0.380)	pCi/L		10/07/20 07:38	
EPA 9320	Radium-228	C:100% T:NA 0.293 ± 0.412 (0.887)	pCi/L		10/08/20 11:52	
Total Radium Calculation	Total Radium	C:76% T:83% 0.422 ± 0.591 (1.27)	pCi/L		10/20/20 08:55	
92495892007	HGWC-126					
EPA 9315	Radium-226	0.369 ± 0.289 (0.513)	pCi/L		10/14/20 06:28	
EPA 9320	Radium-228	C:85% T:NA 0.472 ± 0.423 (0.866)	pCi/L		10/15/20 11:08	
Total Radium Calculation	Total Radium	C:82% T:80% 0.841 ± 0.712 (1.38)	pCi/L		10/20/20 08:55	
92495892008	FB-03					
EPA 9315	Radium-226	0.0162 ± 0.159 (0.433)	pCi/L		10/14/20 06:29	
EPA 9320	Radium-228	C:85% T:NA -0.0349 ± 0.399 (0.926)	pCi/L		10/15/20 11:08	
Total Radium Calculation	Total Radium	C:77% T:82% 0.0162 ± 0.558 (1.36)	pCi/L		10/20/20 09:06	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL RADS
 Pace Project No.: 92495892

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495892009	HGWC-120					
EPA 9315	Radium-226	0.0994 ± 0.201 (0.468) C:86% T:NA	pCi/L		10/14/20 07:18	
EPA 9320	Radium-228	0.454 ± 0.512 (1.08) C:75% T:73%	pCi/L		10/15/20 11:07	
Total Radium Calculation	Total Radium	0.553 ± 0.713 (1.55)	pCi/L		10/20/20 09:06	
92495892010	FD-03					
EPA 9315	Radium-226	0.213 ± 0.268 (0.569) C:92% T:NA	pCi/L		10/14/20 07:19	
EPA 9320	Radium-228	0.127 ± 0.309 (0.688) C:80% T:81%	pCi/L		10/15/20 11:06	
Total Radium Calculation	Total Radium	0.340 ± 0.577 (1.26)	pCi/L		10/20/20 09:06	
92495892011	HGWC-125					
EPA 9315	Radium-226	0.621 ± 0.312 (0.353) C:87% T:NA	pCi/L		10/14/20 06:29	
EPA 9320	Radium-228	0.824 ± 0.389 (0.653) C:79% T:86%	pCi/L		10/15/20 11:06	
Total Radium Calculation	Total Radium	1.45 ± 0.701 (1.01)	pCi/L		10/20/20 09:06	
92495892012	HGWA-45D					
EPA 9315	Radium-226	0.444 ± 0.255 (0.298) C:90% T:NA	pCi/L		10/14/20 06:37	
EPA 9320	Radium-228	0.622 ± 0.414 (0.789) C:80% T:76%	pCi/L		10/15/20 11:07	
Total Radium Calculation	Total Radium	1.07 ± 0.669 (1.09)	pCi/L		10/20/20 09:06	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL RADS
 Pace Project No.: 92495892

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495892013	MW-46D					
EPA 9315	Radium-226	0.217 ± 0.191 (0.315) C:90% T:NA	pCi/L		10/14/20 06:40	
EPA 9320	Radium-228	0.377 ± 0.345 (0.702) C:75% T:89%	pCi/L		10/15/20 11:07	
Total Radium Calculation	Total Radium	0.594 ± 0.536 (1.02)	pCi/L		10/20/20 09:06	
92495892014	HGWC-121A					
EPA 9315	Radium-226	0.417 ± 0.303 (0.513) C:84% T:NA	pCi/L		10/15/20 07:07	
EPA 9320	Radium-228	0.344 ± 0.470 (1.01) C:68% T:79%	pCi/L		10/15/20 11:14	
Total Radium Calculation	Total Radium	0.761 ± 0.773 (1.52)	pCi/L		10/20/20 10:07	
92495892015	HGWC-124					
EPA 9315	Radium-226	0.140 ± 0.201 (0.433) C:93% T:NA	pCi/L		10/15/20 08:02	
EPA 9320	Radium-228	0.337 ± 0.467 (1.00) C:70% T:80%	pCi/L		10/15/20 11:14	
Total Radium Calculation	Total Radium	0.477 ± 0.668 (1.43)	pCi/L		10/20/20 10:07	
92495892016	MW-32					
EPA 9315	Radium-226	0.220 ± 0.262 (0.549) C:89% T:NA	pCi/L		10/15/20 08:02	
EPA 9320	Radium-228	0.789 ± 0.444 (0.802) C:73% T:80%	pCi/L		10/15/20 11:30	
Total Radium Calculation	Total Radium	1.01 ± 0.706 (1.35)	pCi/L		10/20/20 10:07	

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SUMMARY OF DETECTION

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92495892017	MW-39					
EPA 9315	Radium-226	0.588 ± 0.326 (0.462) C:86% T:NA	pCi/L		10/15/20 07:07	
EPA 9320	Radium-228	0.428 ± 0.388 (0.778) C:76% T:68%	pCi/L		10/15/20 11:30	
Total Radium Calculation	Total Radium	1.02 ± 0.714 (1.24)	pCi/L		10/20/20 10:07	
92495892018	MW-41					
EPA 9315	Radium-226	0.295 ± 0.248 (0.444) C:88% T:NA	pCi/L		10/15/20 07:08	
EPA 9320	Radium-228	0.114 ± 0.324 (0.729) C:76% T:82%	pCi/L		10/15/20 11:30	
Total Radium Calculation	Total Radium	0.409 ± 0.572 (1.17)	pCi/L		10/20/20 10:07	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: HGWA-1 **Lab ID: 92495892001** Collected: 09/15/20 14:01 Received: 09/16/20 11:14 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	0.0193 ± 0.226 (0.595) C:83% T:NA	pCi/L	10/07/20 07:29	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.729 ± 0.435 (0.807) C:71% T:83%	pCi/L	10/07/20 14:00	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.748 ± 0.661 (1.40)	pCi/L	10/19/20 09:49	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: HGWA-2 **Lab ID: 92495892002** Collected: 09/15/20 10:58 Received: 09/16/20 11:14 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	0.124 ± 0.339 (0.807) C:88% T:NA	pCi/L	10/07/20 07:30	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	-0.233 ± 0.417 (1.01) C:66% T:81%	pCi/L	10/07/20 14:00	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.124 ± 0.756 (1.82)	pCi/L	10/16/20 12:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: HGWA-3 **Lab ID: 92495892003** Collected: 09/15/20 11:45 Received: 09/16/20 11:14 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	0.161 ± 0.215 (0.449) C:89% T:NA	pCi/L	10/07/20 07:30	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.305 ± 0.343 (0.865) C:74% T:83%	pCi/L	10/07/20 14:00	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.161 ± 0.558 (1.31)	pCi/L	10/16/20 12:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: HGWA-122 **Lab ID: 92495892004** Collected: 09/15/20 15:41 Received: 09/16/20 11:14 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	0.192 ± 0.240 (0.500) C:88% T:NA	pCi/L	10/14/20 07:29	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.183 ± 0.426 (0.945) C:69% T:80%	pCi/L	10/15/20 14:29	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.375 ± 0.666 (1.45)	pCi/L	10/16/20 12:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-43D Lab ID: 92495892005 Collected: 09/16/20 11:58 Received: 09/17/20 09:45 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.531 ± 0.341 (0.558) C:83% T:NA	pCi/L	10/07/20 07:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.0158 ± 0.401 (0.931) C:73% T:74%	pCi/L	10/08/20 11:52	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.531 ± 0.742 (1.49)	pCi/L	10/20/20 08:55	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-44D Lab ID: 92495892006 Collected: 09/16/20 15:18 Received: 09/17/20 09:45 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.129 ± 0.179 (0.380) C:100% T:NA	pCi/L	10/07/20 07:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.293 ± 0.412 (0.887) C:76% T:83%	pCi/L	10/08/20 11:52	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.422 ± 0.591 (1.27)	pCi/L	10/20/20 08:55	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-126 Lab ID: 92495892007 Collected: 09/18/20 15:39 Received: 09/21/20 09:25 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.369 ± 0.289 (0.513) C:85% T:NA	pCi/L	10/14/20 06:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.472 ± 0.423 (0.866) C:82% T:80%	pCi/L	10/15/20 11:08	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.841 ± 0.712 (1.38)	pCi/L	10/20/20 08:55	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: FB-03 **Lab ID: 92495892008** Collected: 09/18/20 16:50 Received: 09/21/20 09:25 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	0.0162 ± 0.159 (0.433) C:85% T:NA	pCi/L	10/14/20 06:29	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	-0.0349 ± 0.399 (0.926) C:77% T:82%	pCi/L	10/15/20 11:08	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.0162 ± 0.558 (1.36)	pCi/L	10/20/20 09:06	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: HGWC-120 **Lab ID: 92495892009** Collected: 09/21/20 13:48 Received: 09/22/20 09:25 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	0.0994 ± 0.201 (0.468) C:86% T:NA	pCi/L	10/14/20 07:18	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.454 ± 0.512 (1.08) C:75% T:73%	pCi/L	10/15/20 11:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.553 ± 0.713 (1.55)	pCi/L	10/20/20 09:06	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: FD-03 **Lab ID: 92495892010** Collected: 09/21/20 00:00 Received: 09/22/20 09:25 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	0.213 ± 0.268 (0.569) C:92% T:NA	pCi/L	10/14/20 07:19	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.127 ± 0.309 (0.688) C:80% T:81%	pCi/L	10/15/20 11:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.340 ± 0.577 (1.26)	pCi/L	10/20/20 09:06	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: HGWC-125 **Lab ID: 92495892011** Collected: 09/21/20 12:07 Received: 09/22/20 09:25 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	0.621 ± 0.312 (0.353) C:87% T:NA	pCi/L	10/14/20 06:29	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.824 ± 0.389 (0.653) C:79% T:86%	pCi/L	10/15/20 11:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.45 ± 0.701 (1.01)	pCi/L	10/20/20 09:06	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWA-45D Lab ID: 92495892012 Collected: 09/25/20 13:50 Received: 09/28/20 09:40 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.444 ± 0.255 (0.298) C:90% T:NA	pCi/L	10/14/20 06:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.622 ± 0.414 (0.789) C:80% T:76%	pCi/L	10/15/20 11:07	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	1.07 ± 0.669 (1.09)	pCi/L	10/20/20 09:06	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: MW-46D **Lab ID: 92495892013** Collected: 09/25/20 11:10 Received: 09/28/20 09:40 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	0.217 ± 0.191 (0.315) C:90% T:NA	pCi/L	10/14/20 06:40	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.377 ± 0.345 (0.702) C:75% T:89%	pCi/L	10/15/20 11:07	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.594 ± 0.536 (1.02)	pCi/L	10/20/20 09:06	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: HGWC-121A **Lab ID: 92495892014** Collected: 09/28/20 16:04 Received: 09/29/20 08:55 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	0.417 ± 0.303 (0.513) C:84% T:NA	pCi/L	10/15/20 07:07	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.344 ± 0.470 (1.01) C:68% T:79%	pCi/L	10/15/20 11:14	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	0.761 ± 0.773 (1.52)	pCi/L	10/20/20 10:07	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: HGWC-124 Lab ID: 92495892015 Collected: 09/28/20 18:00 Received: 09/29/20 08:55 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.140 ± 0.201 (0.433) C:93% T:NA	pCi/L	10/15/20 08:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.337 ± 0.467 (1.00) C:70% T:80%	pCi/L	10/15/20 11:14	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.477 ± 0.668 (1.43)	pCi/L	10/20/20 10:07	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: MW-32 **Lab ID: 92495892016** Collected: 09/28/20 15:44 Received: 09/29/20 08:55 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	0.220 ± 0.262 (0.549) C:89% T:NA	pCi/L	10/15/20 08:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.789 ± 0.444 (0.802) C:73% T:80%	pCi/L	10/15/20 11:30	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.01 ± 0.706 (1.35)	pCi/L	10/20/20 10:07	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Sample: MW-39 **Lab ID: 92495892017** Collected: 09/28/20 17:27 Received: 09/29/20 08:55 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	0.588 ± 0.326 (0.462) C:86% T:NA	pCi/L	10/15/20 07:07	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	0.428 ± 0.388 (0.778) C:76% T:68%	pCi/L	10/15/20 11:30	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	1.02 ± 0.714 (1.24)	pCi/L	10/20/20 10:07	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	0.295 ± 0.248 (0.444) C:88% T:NA	pCi/L	10/15/20 07:08	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	0.114 ± 0.324 (0.729) C:76% T:82%	pCi/L	10/15/20 11:30	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	0.409 ± 0.572 (1.17)	pCi/L	10/20/20 10:07	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

QC Batch:	415616	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92495892002, 92495892003, 92495892005, 92495892006

METHOD BLANK: 2009756 Matrix: Water

Associated Lab Samples: 92495892002, 92495892003, 92495892005, 92495892006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0920 ± 0.177 (0.408) C:91% T:NA	pCi/L	10/07/20 07:30	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

QC Batch: 417131

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92495892001, 92495892002, 92495892003, 92495892004

METHOD BLANK: 2016812

Matrix: Water

Associated Lab Samples: 92495892001, 92495892002, 92495892003, 92495892004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.888 ± 0.380 (0.600) C:70% T:99%	pCi/L	10/15/20 11:15	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

QC Batch:	415615	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92495892001

METHOD BLANK:	2009755	Matrix:	Water
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Associated Lab Samples: 92495892001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.119 ± 0.160 (0.326) C:94% T:NA	pCi/L	10/06/20 17:26	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

QC Batch: 417130	Analysis Method: EPA 9315
QC Batch Method: EPA 9315	Analysis Description: 9315 Total Radium
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92495892004

METHOD BLANK: 2016810	Matrix: Water
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Associated Lab Samples: 92495892004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.00529 ± 0.135 (0.392) C:94% T:NA	pCi/L	10/14/20 07:09	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

QC Batch:	417136	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92495892014, 92495892015, 92495892016, 92495892017, 92495892018

METHOD BLANK: 2016820 Matrix: Water

Associated Lab Samples: 92495892014, 92495892015, 92495892016, 92495892017, 92495892018

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0209 ± 0.127 (0.392) C:91% T:NA	pCi/L	10/15/20 07:09	

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QUALIFIERS

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 SEMIANNUAL RADS
Pace Project No.: 92495892

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495892001	HGWA-1	EPA 9315	415615		
92495892002	HGWA-2	EPA 9315	415616		
92495892003	HGWA-3	EPA 9315	415616		
92495892004	HGWA-122	EPA 9315	417130		
92495892005	HGWA-43D	EPA 9315	415616		
92495892006	HGWA-44D	EPA 9315	415616		
92495892007	HGWC-126	EPA 9315	417134		
92495892008	FB-03	EPA 9315	417134		
92495892009	HGWC-120	EPA 9315	417134		
92495892010	FD-03	EPA 9315	417134		
92495892011	HGWC-125	EPA 9315	417134		
92495892012	HGWA-45D	EPA 9315	417134		
92495892013	MW-46D	EPA 9315	417134		
92495892014	HGWC-121A	EPA 9315	417136		
92495892015	HGWC-124	EPA 9315	417136		
92495892016	MW-32	EPA 9315	417136		
92495892017	MW-39	EPA 9315	417136		
92495892018	MW-41	EPA 9315	417136		
92495892001	HGWA-1	EPA 9320	417131		
92495892002	HGWA-2	EPA 9320	417131		
92495892003	HGWA-3	EPA 9320	417131		
92495892004	HGWA-122	EPA 9320	417131		
92495892005	HGWA-43D	EPA 9320	417135		
92495892006	HGWA-44D	EPA 9320	417135		
92495892007	HGWC-126	EPA 9320	417135		
92495892008	FB-03	EPA 9320	417135		
92495892009	HGWC-120	EPA 9320	417135		
92495892010	FD-03	EPA 9320	417135		
92495892011	HGWC-125	EPA 9320	417135		
92495892012	HGWA-45D	EPA 9320	417135		
92495892013	MW-46D	EPA 9320	417135		
92495892014	HGWC-121A	EPA 9320	417137		
92495892015	HGWC-124	EPA 9320	417137		
92495892016	MW-32	EPA 9320	417137		
92495892017	MW-39	EPA 9320	417137		
92495892018	MW-41	EPA 9320	417137		
92495892001	HGWA-1	Total Radium Calculation	419126		
92495892002	HGWA-2	Total Radium Calculation	418910		
92495892003	HGWA-3	Total Radium Calculation	418910		
92495892004	HGWA-122	Total Radium Calculation	418910		
92495892005	HGWA-43D	Total Radium Calculation	419262		
92495892006	HGWA-44D	Total Radium Calculation	419262		
92495892007	HGWC-126	Total Radium Calculation	419262		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HAMMOND AP-3 SEMIANNUAL RADS

Pace Project No.: 92495892

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92495892008	FB-03	Total Radium Calculation	419263		
92495892009	HGWC-120	Total Radium Calculation	419263		
92495892010	FD-03	Total Radium Calculation	419263		
92495892011	HGWC-125	Total Radium Calculation	419263		
92495892012	HGWA-45D	Total Radium Calculation	419263		
92495892013	MW-46D	Total Radium Calculation	419263		
92495892014	HGWC-121A	Total Radium Calculation	419264		
92495892015	HGWC-124	Total Radium Calculation	419264		
92495892016	MW-32	Total Radium Calculation	419264		
92495892017	MW-39	Total Radium Calculation	419264		
92495892018	MW-41	Total Radium Calculation	419264		

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Client Name: GA Power

WO#: **92495892**



Courier: Fed Ex UPS USPS Client Commercial Pace

Tracking #: _____ 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 0.8 Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: 9/16/2004

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 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 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)	<u>W</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

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 Document

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

Page: 1 of 1

Section A Required Client Information: Company: GA Power Address: Atlanta, GA Email To: SCS Contacts Phone: <input type="checkbox"/> Fax Requested Due Date/TAT: 10 Day	Section B Required Project Information: Report To: SCS Contacts Copy To: Geosyntec Contacts Purchase Order No.: Project Name: Plant Hammond AP-3 Semianual/BK0_04 Project Number: GW6581
Section C Invoice Information Attention: Southern Co. Company Name: Address: Phone: Reference: Email: Fax: Project Name: Kevin Herring Project Number: 10839-4/10839-2	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER CCR	
Site Location: <u>GA</u> STATE:	

ITEM #	Section D Required Client Information	Valid Matrix Codes 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 =
				DATE	TIME	DATE					TIME	Chloride	Fluoride	Sulfate		
1	HGMG-125	WT	G	9/16	1158		3				X	X	X	X	X	
2	HGMG-126	WT	G	9/16	1518		3				X	X	X	X	X	
3	MM-43D	WT	G	9/16	1518		3				X	X	X	X	X	
4	MM-44D	WT	G	9/16	1518		3				X	X	X	X	X	
5	MM-45B	WT	G	9/16	1518		3				X	X	X	X	X	
6	FB-08	WT	G	9/16	1518		3				X	X	X	X	X	
7																
8																
9																
10																
11																
12																

ADDITIONAL COMMENTS	REMOVED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken. *Full App. III & IV Metals-Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Pb, U, Hg, Mo, Se, Tl **Major ions- Ark, Bicarb Alk, Fe, Mg, Mn, K, Na, Sulfide One sample set submitted for HGWA-1, HGWA-2, HGWA-3, MM-43D, MM-44D but they will be reported for AP-1/2/3 SDGs	Good Rutter Geo	9/16	1955	Shadia Muhammad	9/16/20	1955	
	Melia Muhammad	9/17/20	0945	W. N. R. Pace	9/17/20	0945	
	B. W. Pace	9/17/20	1305	Charles Henders	9/17/20	1305	

SAMPLER NAME AND SIGNATURE		DATE Signed (MM/DD/YYYY)	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER	Signature of SAMPLER	9/16/2020				
Good Rutter	Good Rutter	9/16/2020				

Important Note: By signing this form you are accepting Face's NET 30 day payment terms and agreeing to the charges of 1.5% per month for any invoices not paid within 30 days.
F-ALL-Q-020rev.07, 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information: Company: GA Power Address: Atlanta, GA

Section B Required Project Information: Report To: SCS Contacts Copy To: Geosynlec Contacts

Section C Invoice Information: Attention: Southern Co. Company Name: Address: Pace Quote Reference: Kevin Herring Pace Project Manager: Pace Profile #: 10839-4/10839-2

Page: 1 of 1

Section D Valid Matrix Codes: DRINKING WATER, WASTE WATER, PRODUCT, DISINFECTANT, MILE, AIR, OTHER, TS

Section E Matrix Code: (see valid codes to list)

Section F Sample Type: (G=GRAB C=COMP)

Section G Collected: DATE, TIME, DATE, TIME

Section H Sample Temp at Collection

Section I # of Containers: Unpreserved, H₂SO₄, HNO₃, HCl, NaOH, Na₂S₂O₃, Methanol, Other

Section J Analysis Test: Chloride, Fluoride, Sulfate, TDS, Full App. III&IV Metals 6010/6020/7, RAD 226/228, Major ions**

Section K Requested Analysis Filtered (Y/N)

Section L Regulatory Agency: NPDES, GROUND WATER, DRINKING WATER, UST, RCRA, OTHER CCR

Section M Site Location: STATE: GA

ITEM #	Section D	Section E	Section F	Section G	Section H	Section I	Section J	Section K	Section L	Section M	Section N	Section O	Section P	Section Q	Section R	Section S	Section T	Section U	Section V	
	Required Client Information	MATRIX CODE	SAMPLE TYPE	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Regulatory Agency	Site Location	STATE	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
1	HGWC-125	WT G	G	9/18	1539	7/21	7/21	72	7	3	3	X	X	X	X	X	X	X	X	X
2	HGWC-126	WT G	G	9/18	1539	7/21	7/21	72	7	3	3	X	X	X	X	X	X	X	X	X
3	MMW-430	WT G	G	9/18	1539	7/21	7/21	72	7	3	3	X	X	X	X	X	X	X	X	X
4	MMW-440	WT G	G	9/18	1539	7/21	7/21	72	7	3	3	X	X	X	X	X	X	X	X	X
5	MMW-450	WT G	G	9/18	1539	7/21	7/21	72	7	3	3	X	X	X	X	X	X	X	X	X
6	FB-03	WT G	G	9/18	1539	7/21	7/21	72	7	3	3	X	X	X	X	X	X	X	X	X
7																				
8																				
9																				
10																				
11																				
12																				

Section D Additional Comments: Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.

Section E Relinquished By / Affiliation: Pace

Section F Accepted By / Affiliation: Pace

Section G Date: 9/18/20

Section H Date: 9/21/20

Section I Date: 9/21/20

Section J Date: 9/21/20

Section K Date: 9/18/20

Section L Date: 9/21/20

Section M Date: 9/21/20

Section N Date: 9/21/20

Section O Date: 9/21/20

Section P Date: 9/21/20

Section Q Date: 9/21/20

Section R Date: 9/21/20

Section S Date: 9/21/20

Section T Date: 9/21/20

Section U Date: 9/21/20

Section V Date: 9/21/20

Section W Date: 9/21/20

Section X Date: 9/21/20

Section Y Date: 9/21/20

Section Z Date: 9/21/20

Section A Additional Comments: One sample set submitted for HGWA-1, HGWA-2, HGWA-3, MM-430, MM-440 but they will be reported for AP-1/2/3 SDGs

Section B Relinquished By / Affiliation: Pace

Section C Accepted By / Affiliation: Pace

Section D Date: 9/18/20

Section E Date: 9/21/20

Section F Date: 9/21/20

Section G Date: 9/21/20

Section H Date: 9/21/20

Section I Date: 9/21/20

Section J Date: 9/21/20

Section K Date: 9/21/20

Section L Date: 9/21/20

Section M Date: 9/21/20

Section N Date: 9/21/20

Section O Date: 9/21/20

Section P Date: 9/21/20

Section Q Date: 9/21/20

Section R Date: 9/21/20

Section S Date: 9/21/20

Section T Date: 9/21/20

Section U Date: 9/21/20

Section V Date: 9/21/20

Section W Date: 9/21/20

Section X Date: 9/21/20

Section Y Date: 9/21/20

Section Z Date: 9/21/20

Section A Additional Comments: Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to this charge of 1.5% per month for any invoices not paid within 30 days.

Section B Relinquished By / Affiliation: Pace

Section C Accepted By / Affiliation: Pace

Section D Date: 9/18/20

Section E Date: 9/21/20

Section F Date: 9/21/20

Section G Date: 9/21/20

Section H Date: 9/21/20

Section I Date: 9/21/20

Section J Date: 9/21/20

Section K Date: 9/21/20

Section L Date: 9/21/20

Section M Date: 9/21/20

Section N Date: 9/21/20

Section O Date: 9/21/20

Section P Date: 9/21/20

Section Q Date: 9/21/20

Section R Date: 9/21/20

Section S Date: 9/21/20

Section T Date: 9/21/20

Section U Date: 9/21/20

Section V Date: 9/21/20

Section W Date: 9/21/20

Section X Date: 9/21/20

Section Y Date: 9/21/20

Section Z Date: 9/21/20



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Page: 1 of 2

Section A Required Client Information: Company: GA Power Address: Atlanta, GA		Section B Required Project Information: Report To: SCS Contacts Copy To: Geosynthetic Contacts		Section C Invoice Information: Attention: Southern Co. Company Name:	
Email To: SCS Contacts Phone:		Purchase Order No.: Project Name: Plant Hammond AP-3 Semiannual/BKG 04 Project Number: GWM581		Address: Pesticide Date: 18 Day Project Name: Plant Hammond AP-3 Semiannual/BKG 04 Project Number: GWM581	
Requested Due Date/TAT: 18 Day		Pesticide Date: 18 Day		Reference: Kevin Herring Pesticide Project Manager: Kevin Herring Pesticide Project # 10839-S/10839-2	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER CCR			Site Location: GA STATE:		

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DW WW SL CL AR OT TS/SL	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test					Residual Chlorine (Y/N)	pH =		
											Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Chloride, Fluoride, Sulfate	TDS	App. III&IV Metals 6010/6020*			RAD 228/228	Major ions**
1	HGWA-1	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		
2	HGWA-2	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		
3	HGWA-3	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		
4	HGWA-122	WT G	WT G	G	9/21	1548				2	3	3	3	3	3	3	3	X	X	X	X	X	X		
5	HGWA-120	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		
6	HGWA-121A	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		
7	HGWA-124	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		
8	MW-32	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		
9	MW-30	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		
10	MW-41	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		
11	MW-46D	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		
12	FD-03	WT G	WT G	G						2	3	3	3	3	3	3	3	X	X	X	X	X	X		

Additional Comments: *Red Rubber Seed*

Remanufactured by Affiliation: *Red Rubber Seed*

Accepted by Affiliation: *Red Rubber Seed*

Requested Date: 9/21/20

Time: 2:15

Temp in °C: 4.1

Received on Ice (Y/N): Y

Custody Sealed Cooler (Y/N): N

Samples Intact (Y/N): Y

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007



CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 2

Section A Required Client Information Company: GA Power Address: Atlanta, GA Email To: SCS-Contacts Phone: Fax Requested Due Date/TAT: 10 Day		Section B Required Project Information Report To: SCS Contacts Copy To: Geosyntec Contacts Purchase Order No.: Project Name: Plant Hammond AP-3 Semiannual/BKG 04 Project Number: GW6581		Section C Invoice Information Attention: Southern Co. Company Name: Address: Pass Quote Reference: Site Project Manager: Paid Profile #: 10839-5/10839-2	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> OTHER COR		Site Location STATE: GA		Requested Analyte Filtered (Y/N)	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATERIAL CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED			SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test	Residual Chlorine (Y/N)	pH =
					DATE	TIME	DATE			TIME	DATE	TIME	DATE	TIME	DATE			
1	HGWA-1	DIRTY WATER WATER WASTE WATER PRODUCT SOLIDS OIL WPE AIR OTHER TS	WT G	G														
2	HGWA-2		WT G	G														
3	HGWA-3		WT G	G														
4	HGWA-122		WT G	G														
5	HQWC-120		WT G	G														
6	HGWA-124		WT G	G														
7	HGWA-124		WT G	G														
8	HGWA-124		WT G	G														
9	HGWA-124		WT G	G														
10	HGWA-124		WT G	G														
11	HGWA-124		WT G	G														
12	HGWA-124		WT G	G														

Additional Comments: Please note dry wells, strike through any wells not sampled, and note when the last sample for the event has been taken.
 *App. III&IV Metals= Sb, Ba, Be, B, Ca, Cr, Cs, Pb, Li, Mo

Major ions= Alk, Bicarb Alk, Fe, Mg, Mn, K, Na, Sulfide
 One sample set submitted for HGWA-1, HGWA-2, HGWA-3 but results will be reported for AP-1/2/3 SDCs

RELINQUISHED BY / AFFILIATION: *Melvin Melburn Lygo* DATE: 9/29/20 TIME: 0855
 ACCEPTED BY / AFFILIATION: *Charles Hinkle* DATE: 9/29/20 TIME: 0855

SAMPLER NAME AND SIGNATURE: *Aaron Reeder*
 PRINT NAME OF SAMPLER: Aaron Reeder
 SIGNATURE OF SAMPLER: *Aaron Reeder* DATE Signed (MM/DD/YY): 09/28/2020

Temp in °C: 3.9
 Received on Ice (Y/N): Y
 Custody Sealed Cooler (Y/N): N
 Samples Intact (Y/N): Y

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 10/6/2020
Worklist: 56393
Matrix: DW

Method Blank Assessment	
MB Sample ID	2009755
MB concentration:	0.119
M/B Counting Uncertainty:	0.159
MB MDC:	0.326
MB Numerical Performance Indicator:	1.46
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
Count Date:	10/7/2020
Spike I.D.:	LCS056393
Decay Corrected Spike Concentration (pCi/mL):	19.033
Volume Used (mL):	24.044
Aliquot Volume (L, g, F):	0.10
Target Conc. (pCi/L, g, F):	0.505
Uncertainty (Calculated):	4.763
Result (pCi/L, g, F):	0.057
LCSD Counting Uncertainty (pCi/L, g, F):	4.553
Numerical Performance Indicator:	0.770
Status vs Numerical Indicator:	95.58%
Upper % Recovery Limits:	N/A
Lower % Recovery Limits:	Pass
	125%
	75%

Duplicate Sample Assessment	
Sample I.D.:	92495649004
Duplicate Sample I.D.:	92495649004DUP
Sample Result (pCi/L, g, F):	0.205
Sample Result Counting Uncertainty (pCi/L, g, F):	0.210
Sample Duplicate Result (pCi/L, g, F):	0.239
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.276
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-0.193
Duplicate Status vs Numerical Indicator:	15.40%
Duplicate Status vs RPD:	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:

MS/MSD 1	MS/MSD 2
<p>Sample Matrix Spike Control Assessment</p> <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 Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Sample 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:</p> <p>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	
Sample I.D.:	Sample MS I.D.:
Sample MSD I.D.:	Sample MSD I.D.:
Sample Matrix Spike Result:	Sample Matrix Spike Result:
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:
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:
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:
MS/MSD Duplicate Status vs RPD:	% RPD Limit:

AM 10/17/2020

On 10.7.20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 10/6/2020
Worklist: 56393
Matrix: DW

Method Blank Assessment	
MB Sample ID	2009755
MB concentration:	0.119
M/B Counting Uncertainty:	0.159
MB MDC:	0.326
MB Numerical Performance Indicator:	1.46
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS56393	Y
Count Date:	10/7/2020	LCS56393
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044	24.044
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.505	0.510
Target Conc. (pCi/L, g, F):	4.763	4.718
Uncertainty (Calculated):	0.057	0.057
Result (pCi/L, g, F):	4.553	4.593
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.770	0.790
Numerical Performance Indicator:	-0.53	-0.31
Percent Recovery:	95.58%	97.35%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS56393
Duplicate Sample I.D.:	LCS56393
Sample Result (pCi/L, g, F):	4.553
Sample Duplicate Result (pCi/L, g, F):	0.770
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	4.593
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.071
Duplicate Percent Recoveries): Duplicate RPD:	1.83%
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: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate 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 Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate Percent Recoveries): Duplicate RPD: (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:

LAM 10/17/2020

DW (50-20)

Quality Control Sample Performance Assessment



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

Test: Ra-226
Analyst: LAL
Date: 10/6/2020
Worklist: 56394
Matrix: DW

Method Blank Assessment	
MB Sample ID	2009756
MB Concentration:	0.092
M/B Counting Uncertainty:	0.177
MB MDC:	0.408
MB Numerical Performance Indicator:	1.02
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSID (Y or N)?	Y
Count Date:	10/6/2020	LCS56394	10/6/2020
Spike I.D.:	19-033		19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044		24.044
Volume Used (mL):	0.10		0.10
Aliquot Volume (L, g, F):	0.514		0.512
Target Conc. (pCi/L, g, F):	4.675		4.692
Uncertainty (Calculated):	0.056		0.056
Result (pCi/L, g, F):	3.980		4.462
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.760		0.322
Numerical Performance Indicator:	-1.79		-1.38
Percent Recovery:	85.14%		95.08%
Status vs Numerical Indicator:	N/A		N/A
Status vs Recovery:	Pass		Pass
Upper % Recovery Limits:	125%		125%
Lower % Recovery Limits:	75%		75%

Duplicate Sample Assessment	
Sample I.D.:	LCS56394
Duplicate Sample I.D.:	LCS56394
Sample Result (pCi/L, g, F):	3.980
Sample Result Counting Uncertainty (pCi/L, g, F):	0.760
Sample Duplicate Result (pCi/L, g, F):	4.462
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.322
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-1.143
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	11.00%
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: 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 Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate 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:

UAM 10/7/2020

DW 10.7.20

Quality Control Sample Performance Assessment

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



Test: Ra-226
Analyst: LAL
Date: 10/6/2020
Worklist: 56394
Matrix: DW

Method Blank Assessment	
MB Sample ID	2009756
MB Concentration:	0.092
MB Counting Uncertainty:	0.177
MB MDC:	0.408
MB Numerical Performance Indicator:	1.02
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSD56394	LCSD56394
Count Date:	10/7/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.514
Target Conc. (pCi/L, g, F):	4.675
Uncertainty (Calculated):	0.056
Result (pCi/L, g, F):	3.980
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.760
Numerical Performance Indicator:	-1.79
Percent Recovery:	85.14%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92495887002
Duplicate Sample I.D.:	92495887002DUP
Sample Result (pCi/L, g, F):	0.124
Sample Result Counting Uncertainty (pCi/L, g, F):	0.339
Sample Duplicate Result (pCi/L, g, F):	0.304
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.234
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-0.859
Duplicate RPD:	84.56%
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:

~~**Data must be reprocessed due to unacceptable precision~~ N/A VAM 10/7/2020

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): MSD Aliquot (L, g, F): MS Target Conc. (pCi/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: 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:

VAM 10/7/2020
TAR_56394_W.xls
Total Alpha Radium (R104-3 11Feb2019).xls
On 10.7.20

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 10/13/2020
Worklist: 56587
Matrix: DW



Method Blank Assessment	
MB Sample ID	2016610
MB concentration:	-0.005
M/B Counting Uncertainty:	0.135
MB MDC:	0.392
MB Numerical Performance Indicator:	-0.08
MB Status vs. Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS-56587	LCS-56587
Count Date:	10/14/2020	10/14/2020
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044	24.044
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.508	0.512
Target Conc. (pCi/L, g, F):	4.732	4.697
Uncertainty (Calculated):	0.057	0.066
Result (pCi/L, g, F):	4.419	4.459
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.793	0.781
Numerical Performance Indicator:	-0.77	-0.59
Percent Recovery:	93.40%	94.94%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Duplicate Sample Assessment	Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:	Sample I.D.:
Duplicate Sample I.D.:	Sample MS I.D.:
Sample Result (pCi/L, g, F):	Sample MSD I.D.:
Sample Result Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Result:
Sample Duplicate Result (pCi/L, g, F):	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	Sample Matrix Spike Duplicate Result:
Are sample and/or duplicate results below RL?	Duplicate Numerical Performance Indicator:
Duplicate Numerical Performance Indicator:	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	MS/ MSD Duplicate Status vs Numerical Indicator:
Duplicate Status vs Numerical Indicator:	MS/ MSD Duplicate Status vs RPD:
Duplicate Status vs RPD:	% RPD Limit:
% RPD Limit:	

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):	
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/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:	
Sample Matrix Spike Duplicate 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:
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:

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Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-226
 Analyst: LAL
 Date: 10/13/2020
 Worklist: 56587
 Matrix: DW

Method Blank Assessment	
MB Sample ID	2016810
MB concentration:	-0.005
M/B Counting Uncertainty:	0.135
MB MDC:	0.392
MB Numerical Performance Indicator:	-0.08
MB Status vs Numerical MDC:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD	N
Count Date:	10/14/2020	LCS56587
Spike I.D.:	19-033	LCS56587
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Aliquot Volume (L, g, F):	0.10	
Target Conc. (pCi/L, g, F):	0.508	
Uncertainty (Calculated):	4.732	
Result (pCi/L, g, F):	0.057	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	4.419	
Numerical Performance Indicator:	0.793	
Percent Recovery:	93.40%	
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.:	92497113001
Duplicate Sample I.D.:	92497113001DUP
Sample Result (pCi/L, g, F):	0.393
Sample Duplicate Result (pCi/L, g, F):	0.257
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.393
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.369
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-0.003
Duplicate RPD:	0.20%
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 Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate 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 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:

Handwritten signature and date: 10/14/2020

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

Comments:

10/14/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 10/13/2020
Worklist: 56591
Matrix: DW

Method Blank Assessment	
MB Sample ID	2016817
MB concentration:	0.280
M/B Counting Uncertainty:	0.235
MB MDC:	0.418
MB Numerical Performance Indicator:	2.33
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS56591	Y
Count Date:	10/14/2020	LCS56591
Spike I.D.:	19-033	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044	24.044
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.512	0.510
Target Conc. (pCi/L, g, F):	4.697	4.711
Uncertainty (Calculated):	0.056	0.057
Result (pCi/L, g, F):	4.666	4.350
LCSD Counting Uncertainty (pCi/L, g, F):	0.761	0.758
Numerical Performance Indicator:	-0.08	-0.93
Percent Recovery:	99.33%	92.35%
Status vs Numerical Indicator:	N/A	Pass
Upper % Recovery Limits:	125%	125%
Lower % Recovery Limits:	75%	75%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS56591
Duplicate Sample I.D.:	LCS56591
Sample Result (pCi/L, g, F):	4.666
Sample Duplicate Result (pCi/L, g, F):	0.761
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.350
Are sample and/or duplicate results below RL?	0.758
Duplicate Numerical Performance Indicator:	NO
Duplicate Percent Recoveries): Duplicate RPD:	0.577
Duplicate Status vs Numerical Indicator:	7.29%
Duplicate Status vs RPD:	N/A
% RPD Limit:	25%

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

Comments:

van 10/14/2020

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

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: LAL
Date: 10/13/2020
Worklist: 56591
Matrix: DW

Method Blank Assessment	
MB Sample ID	2016817
MB concentration:	0.280
M/B Counting Uncertainty:	0.235
MB MDC:	0.418
MB Numerical Performance Indicator:	2.33
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD56591	N LCSD56591
Count Date:	10/14/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.512	
Target Conc. (pCi/L, g, F):	4.697	
Uncertainty (Calculated):	0.056	
Result (pCi/L, g, F):	4.666	
LCSD Counting Uncertainty (pCi/L, g, F):	0.761	
Numerical Performance Indicator:	-0.08	
Percent Recovery:	99.33%	
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.:	92496904020
Duplicate Sample I.D.:	92496904020DUP
Sample Result (pCi/L, g, F):	0.317
Sample Result Counting Uncertainty (pCi/L, g, F):	0.241
Sample Duplicate Result (pCi/L, g, F):	0.374
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.240
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	-0.331
Duplicate RPD:	16.61%
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.:		
M/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 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:		

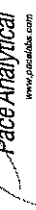
Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: 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:

Handwritten notes:
DUP 92496904020
MAM 10/14/2020

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226
Analyst: LAL
Date: 10/14/2020
Worklist: 56593
Matrix: DW

Method Blank Assessment	
MB Sample ID	2016820
MB concentration:	-0.021
M/B Counting Uncertainty:	0.127
MB MDC:	0.392
MB Numerical Performance Indicator:	-0.32
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCS56593	LCS056593
Count Date:	10/15/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.508
Target Conc. (pCi/L, g, F):	4.737
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.134
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.806
Numerical Performance Indicator:	-1.46
Percent Recovery:	87.27%
Status vs Numerical Indicator:	N/A
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92495887027
Duplicate Sample I.D.:	92495887027DUP
Sample Result (pCi/L, g, F):	-0.019
Sample Result Counting Uncertainty (pCi/L, g, F):	0.155
Sample Duplicate Result (pCi/L, g, F):	-0.014
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.204
Are sample and/or duplicate results below RL?	See below ##
Duplicate Numerical Performance Indicator:	-0.035
Duplicate RPD:	-27.96%
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	
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:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample 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):	
Sample Matrix Spike Duplicate Result:	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56588
Matrix: WT

Method Blank Assessment	
MB Sample ID	2016812
MB concentration:	0.888
MB 2 Sigma CSU:	0.380
MB MDC:	0.600
MB Numerical Performance Indicator:	4.58
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS56588	Y
Count Date:	10/15/2020	LCS56588
Spike I.D.:	20-030	10/15/2020
Decay Corrected Spike Concentration (pCi/mL):	38.018	20-030
Volume Used (mL):	0.10	38.018
Aliquot Volume (L, g, F):	0.817	0.10
Target Conc. (pCi/L, g, F):	4.654	0.810
Uncertainty (Calculated):	0.228	4.695
Result (pCi/L, g, F):	5.189	0.230
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.207	5.370
Numerical Performance Indicator:	0.85	1.191
Percent Recovery:	111.49%	1.09
Status vs Numerical Indicator:	N/A	114.37%
Status vs Recovery:	Pass	N/A
Upper % Recovery Limits:	135%	Pass
Lower % Recovery Limits:	60%	135%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS56588
Duplicate Sample I.D.:	LCS56588
Sample Result (pCi/L, g, F):	5.189
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.207
Sample Duplicate Result (pCi/L, g, F):	5.370
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.191
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-0.210
Duplicate Percent Recoveries): Duplicate RPD:	2.55%
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:
*The method blank result is below the reporting limit for this analysis and is acceptable.

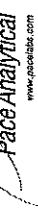
Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target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

10/16/20
10/16/20

Accepted

Quality Control Sample Performance Assessment



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

Test: Ra-228
Analyst: VAL
Date: 10/16/2020
Worklist: 56592
Matrix: WT

Method Blank Assessment

MB Sample ID
MB concentration:
MB 2 Sigma CSU:
MB MDC:
MB Numerical Performance Indicator:
MB Status vs Numerical Indicator:
MB Status vs. MDC:

Laboratory Control Sample Assessment		LCS/DC (Y or N)?	Y
Count Date:	LCS56592	10/19/2020	10/19/2020
Spike I.D.:	LCS56592	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	37.968	0.10	37.968
Volume Used (mL):	0.10	0.836	0.10
Aliquot Volume (L, g, F):	0.836	4.542	0.836
Target Conc. (pCi/L, g, F):	4.670	0.223	4.542
Uncertainty (Calculated):	0.229	4.409	0.223
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	4.645	1.050	4.409
Numerical Performance Indicator:	-0.04	97.06%	1.018
Percent Recovery:	99.48%	N/A	-0.25
Status vs Numerical Indicator:	N/A	Pass	N/A
Upper % Recovery Limits:	135%	Pass	Pass
Lower % Recovery Limits:	80%	Pass	80%

Duplicate Sample Assessment

Sample I.D.:
Duplicate Sample I.D.:
Sample Result (pCi/L, g, F):
Sample Result 2 Sigma CSU (pCi/L, g, F):
Sample Duplicate Result (pCi/L, g, F):
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Are sample and/or duplicate results below RL?
Duplicate Numerical Performance Indicator:
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:
Duplicate Status vs Numerical Indicator:
Duplicate Status vs RPD:
% RPD Limit:

LCS56592
LCS56592
4.645
1.050
4.409
1.018
NO
0.317
2.46%
Pass
Pass
36%

Enter Duplicate sample IDs if other than LCS/LCSD in the space below.

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

Comments:

10/20/2020

Sample Matrix Spike Control Assessment

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:
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:

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.



Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56592
Matrix: WT

Method Blank Assessment	
MB Sample ID	2016818
MB concentration:	0.274
M/B 2 Sigma CSU:	0.291
MB MDC:	0.602
MB Numerical Performance Indicator:	1.85
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS56592	Y
Count Date:	10/15/2020	LCS56592
Spike I.D.:	20-030	10/15/2020
Decay Corrected Spike Concentration (pCi/mL):	38.018	20-030
Volume Used (mL):	0.10	38.018
Aliquot Volume (L, g, F):	0.836	0.10
Target Conc. (pCi/L, g, F):	4.676	0.836
Uncertainty (Calculated):	2.226	4.548
Result (pCi/L, g, F):	2.229	2.963
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.629	2.963
Numerical Performance Indicator:	-7.18	0.764
Percent Recovery:	47.60%	-3.91
Status vs Numerical Indicator:	Fail**	65.14%
Status vs Recovery:	Fail Low**	N/A
Upper % Recovery Limits:	135%	Pass
Lower % Recovery Limits:	60%	135%

Duplicate Sample Assessment	LCS/D (Y or N)?	Y
Sample I.D.:	LCS56592	Enter Duplicate sample IDs if other than LCS/D in the space below.
Duplicate Sample I.D.:	LCS56592	
Sample Result (pCi/L, g, F):	2.226	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.629	
Sample Duplicate Result (pCi/L, g, F):	2.963	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.764	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.460	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	31.10%	
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 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: 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:		

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:

Manual

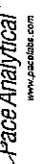
Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

**Batch must be re-prepped due to LCS failure.

10/13/20

Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228
Analyst: VAL
Date: 10/13/2020
Worklist: 56594
Matrix: WT

Method Blank Assessment	
MB Sample ID	2016921
MB concentration:	0.369
MB 2 Sigma CSU:	0.373
MB MDC:	0.768
MB Numerical Performance Indicator:	1.94
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS56594	Y
Count Date:	10/15/2020	LCS56594
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.018	38.018
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.813	0.815
Target Conc. (pCi/L, g, F):	4.674	4.667
Uncertainty (Calculated):	0.229	0.229
Result (pCi/L, g, F):	3.952	4.892
LCS/LCSD 2, Sigma CSU (pCi/L, g, F):	0.918	1.152
Numerical Performance Indicator:	-1.49	0.38
Percent Recovery:	84.57%	104.82%
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	LCS/D (Y or N)?	Y
Sample I.D.:	LCS56594	LCS56594
Duplicate Sample I.D.:	LCSD56594	LCSD56594
Sample Result (pCi/L, g, F):	3.952	3.952
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.918	0.918
Sample Duplicate Result (pCi/L, g, F):	4.892	4.892
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.152	1.152
Are sample and/or duplicate results below RL?	NO	NO
Duplicate Numerical Performance Indicator:	-1.250	-1.250
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	21.38%	21.38%
Duplicate Status vs Numerical Indicator:	Pass	Pass
Duplicate Status vs RPD:	Pass	Pass
% RPD Limit:	36%	36%

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

Comments:

Handwritten signature and date: 10/16/20

Handwritten signature and date: CME 10/14/2020

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 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:

July 23, 2020

Kelley Sharpe
ARCADIS - Atlanta
2839 Paces Ferry Rd
STE 900
Atlanta, GA 30339

RE: Project: Plant Hammond-Ash Pond #3
Pace Project No.: 92486806

Dear Kelley Sharpe:

Enclosed are the analytical results for sample(s) received by the laboratory on July 17, 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 - Peachtree Corners, GA

Client provided updated COC on 7/20/20.

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

Sincerely,



Maiya Parks
maiya.parks@pacelabs.com
(770)734-4200
Project Manager

Enclosures

cc: Jean Brown, Georgia Power
David Duncan, Southern Company
Warren Johnson, ARCADIS - Atlanta
Christine Ridley, Southern Company
Erika Yeager, Southern Company



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Plant Hammond-Ash Pond #3
Pace Project No.: 92486806

Pace Analytical Services Peachtree Corners

110 Technology Pkwy, 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

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SAMPLE SUMMARY

Project: Plant Hammond-Ash Pond #3
Pace Project No.: 92486806

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92486806001	H-SCC NBR	Water	07/17/20 14:15	07/17/20 17:34
92486806002	H-SCC E41	Water	07/17/20 12:30	07/17/20 17:34
92486806003	H-SCC	Water	07/17/20 12:05	07/17/20 17:34

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SAMPLE ANALYTE COUNT

Project: Plant Hammond-Ash Pond #3
Pace Project No.: 92486806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92486806001	H-SCC NBR	EPA 6020B	CW1	1	PASI-GA
92486806002	H-SCC E41	EPA 6020B	CW1	1	PASI-GA
92486806003	H-SCC	EPA 6020B	CW1	1	PASI-GA

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

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ANALYTICAL RESULTS

Project: Plant Hammond-Ash Pond #3

Pace Project No.: 92486806

Sample: H-SCC NBR		Lab ID: 92486806001		Collected: 07/17/20 14:15	Received: 07/17/20 17:34	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 15:16	7439-98-7	

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ANALYTICAL RESULTS

Project: Plant Hammond-Ash Pond #3

Pace Project No.: 92486806

Sample: H-SCC E41		Lab ID: 92486806002		Collected: 07/17/20 12:30	Received: 07/17/20 17:34	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 15:39	7439-98-7	

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ANALYTICAL RESULTS

Project: Plant Hammond-Ash Pond #3

Pace Project No.: 92486806

Sample: H-SCC		Lab ID: 92486806003		Collected: 07/17/20 12:05	Received: 07/17/20 17:34	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Pace Analytical Services - Peachtree Corners, GA								
Molybdenum	ND	mg/L	0.010	1	07/20/20 17:34	07/21/20 15:45	7439-98-7	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Hammond-Ash Pond #3
Pace Project No.: 92486806

QC Batch: 554508 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92486806001, 92486806002, 92486806003

METHOD BLANK: 2945842 Matrix: Water
Associated Lab Samples: 92486806001, 92486806002, 92486806003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Molybdenum	mg/L	ND	0.010	07/21/20 15:05	

LABORATORY CONTROL SAMPLE: 2945843

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2945844 2945845

Parameter	Units	2945844		2945845		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92486806001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	3	20

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Plant Hammond-Ash Pond #3

Pace Project No.: 92486806

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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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Hammond-Ash Pond #3

Pace Project No.: 92486806

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92486806001	H-SCC NBR	EPA 3005A	554508	EPA 6020B	554522
92486806002	H-SCC E41	EPA 3005A	554508	EPA 6020B	554522
92486806003	H-SCC	EPA 3005A	554508	EPA 6020B	554522

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt



Client Name: Arcadis ATL

WO#: 92486806

PM: MP Due Date: 07/22/20
CLIENT: GA-ArcadAt1

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 233 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.4 Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7/18/2004

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 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 type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>W</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

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

Project Manager Review: _____ Date: _____

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