REPORT

GROUNDWATER MONITORING PLAN

Plant Branch Ash Pond B, Ash Pond C, Ash Pond D (AP-BCD)

Submitted to:

Georgia Power Company

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Submitted by:

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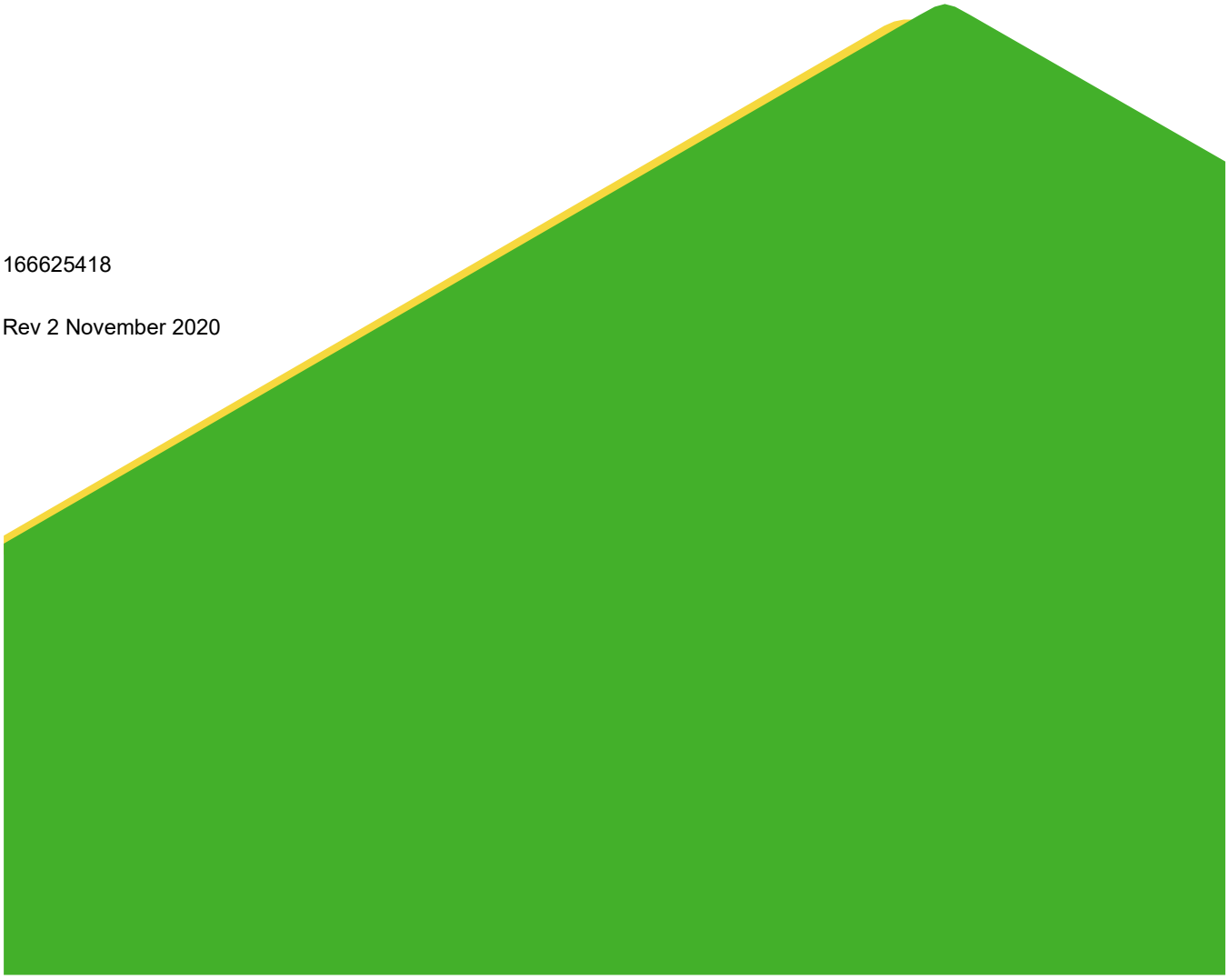

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Table of Contents

Table of Contents (continued)

TABLES

FIGURES

APPENDICES

CERTIFICATION

This *Groundwater Monitoring Plan, Georgia Power Company - Plant Branch Ash Pond AP-BCD* has been prepared to meet the requirements of the Georgia Solid Waste Management Rule by a qualified groundwater scientist or engineer with Golder Associates Inc. References to the appropriate 391-3-4 Rules are incorporated throughout this document.

I hereby certify that this *Groundwater Monitoring Plan, Georgia Power Company - Plant Branch Ash Pond AP-BCD* was prepared by, or under the direct supervision of, a "Qualified Groundwater Scientist," in accordance with the Rules of Solid Waste Management. According to 391-3-4-.01(57), a Qualified Groundwater Scientist is "a professional engineer or geologist registered to practice in Georgia who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields that enable individuals to make sound professional judgments regarding groundwater monitoring, contaminant fate and transport, and corrective action." The design of the groundwater monitoring system was developed in compliance with the Georgia Environmental Protection Division (EPD) Rules of Solid Waste Management, Chapter 391-3-4.10(6).

Golder Associates Inc.

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11/20/2020

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Date

11/20/2020

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https://golderassociates.sharepoint.com/sites/11952g/shared documents/200 reports/groundwater monitoring plan/pond bcd/rev3_8.2020/branch pond bcd groundwater monitoring plan_v8_final_11.2020.docx

1.0 INTRODUCTION

Groundwater monitoring is required by the Georgia Environmental Protection Division (EPD) to detect and quantify potential changes in groundwater chemistry. This Groundwater Monitoring Plan (plan) describes the groundwater monitoring program for the site. This plan meets the requirements of EPD rules and uses EPD's Manual for Ground Water Monitoring dated September 1991 as a guide. Groundwater monitoring well locations are presented on Figure A1 in Appendix A and well construction details on Table A1 of Appendix A for Ash Pond B, Ash Pond C, and Ash Pond D (AP-BCD), collectively.

Monitoring will occur in accordance with 391-3-4-.10 of the Georgia Solid Waste Management Rules. If the monitoring requirements specified in this plan conflict with EPD rules (391-3-4), the EPD rules will take precedent.

In accordance with the United States Environmental Protection Agency (USEPA) Coal Combustion Rule (§257.90), which is incorporated by Georgia State Rule by reference, a detection monitoring well network for AP-BCD has been installed. The existing monitoring wells were installed following the guidelines presented herein. Additionally, this plan documents the methods for future monitoring well installation and/or replacement, and procedures for well abandonment. As required by 391-3-4.10(6)(g), a minor modification will be submitted to the EPD prior to the unscheduled installation or abandonment of monitoring wells. Well installation and/or abandonment must be directed by a qualified groundwater scientist.

2.0 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

Geologic and hydrogeologic conditions for this site are described in a report, *Geological and Hydrogeological Summary Report,* prepared by Golder, November 2020, which is included as an appendix in the *Hydrogeological Assessment Report,* prepared by Geosyntec, 2020 and submitted as part of this Design and Operations plan set. Key elements of this report are summarized below.

2.1 Site Geology

The site is underlain by biotite gneiss with local mafic lithologic variations represented by amphibolite/hornblende gneiss and diabase. Based on review of site-specific geologic mapping, the Plant property is primarily underlain by a fine- to medium-grained, poorly jointed biotite- quartz-feldspar gneiss that has been deeply and uniformly weathered. The gneiss is well-banded and well foliated with a planar, northeast-trending fabric and weathering develops a relatively thick, clay-rich, vermiculitic soil. The gneiss is locally interlayered with a zone of highly concentrated hornblende gneiss/amphibolite that trends northeast across the northern portion of Pond BCD.

Three small mafic intrusive masses were observed north of Pond B as well: two occur southeast of the pond and the third occurs northwest of the pond. These discontinuous masses are resistant to weathering, standing out in relief relative to the surrounding differentially weathered biotite gneiss. The intrusives consist of spheroidal-weathered, medium-grained, equigranular diabase that is well jointed and massive. Weathering of the diabase yields a massive, fat-clay with relict feldspar phenocrysts.

The southern end of the site is underlain by migmatitic gneiss with large amphibole crystals and discontinuous pods of amphibolilte as observed along with entrance road on the southern end of the property. Exposures of this unit are chaotically folded. Based on lack of exposure, contact relationship between the migmatitic gneiss and biotite gneiss was not determined.

Based on review of available information, micaceous, locally saprolitic soils, consisting primarily of clay, silty clay, silt, and sandy clay occur as a variably-thick blanket of residuum overlying bedrock across most of the site. The thickness of residual soils encountered in the borings is variable, ranging from a minimum of 11 feet to as much as 74 feet. In the Piedmont, partially weathered rock (PWR) is described by Standard Penetration Test (SPT) blow counts that exceed 50 blows/foot. In the absence of SPT data, transitionally weathered rock (TWR) is defined based on the presence of saprolitic structures, rock fragments, and denser materials. Where data were available to determine the thickness of TWR, it is relatively thin (i.e., 10 feet or less), if present, except for a few locations where the thickness exceeds 20 feet.

Bedrock beneath the overburden is primarily characterized by poorly-jointed, feldspathic biotite gneiss with a localized zone of highly concentrated layers of amphibolite/hornblende gneiss interlayered with the biotite gneiss. Isolated diabase intrusive masses are also present on site. Lineaments identified around the site are consistent in orientation with structural features observed during geologic mapping, indicating that development of surface lineations is likely controlled by preferential weathering related to discontinuities in bedrock. The top of rock surface generally mimics site topography.

2.2 Site Hydrogeology

A regional, unconfined aquifer system is present at the site, consisting of residual soils and transitionally weathered rock. Interconnected fractures in the transition zone transmit groundwater stored in the overburden soils to underlying bedrock, similar to the conceptual model for groundwater flow described in the Piedmont by LeGrand (2004). Overall, groundwater recharge is thought to occur in the uplands and groundwater discharge near onsite surface water bodies. The water level trends noted at Plant Branch are comparable to similar hydrogeologic settings in the Piedmont region of southeastern US (e.g., Chapman and others, 2007). Additionally, the relationship between groundwater levels and the site topography is consistent with the slope-aquifer conceptual model for groundwater flow in the Piedmont (Robinson and others, 1996; LeGrand, 2004).

The site is directly underlain by up to a 74-foot thick blanket of overburden, which is comprised of residual soils and transitionally weathered rock. Based on field hydraulic conductivity tests and laboratory permeability tests, the overburden hydraulic conductivity ranges from 10^{-3} to 10^{-5} cm/s.

Boring logs and monitoring/piezometer installation logs were used to evaluate hydrostratigraphy of the site. Material types identified included residual soils, saprolitic soil, saprolitic and/or transitionally weathered rock (or PWR if blow counts were provided), and competent bedrock. Based on review of the logs, the screen/filter pack interval for most of the piezometers and monitoring wells installed on site provides connection to overburden that is saturated, indicating that the site is underlain by a regional groundwater aquifer that occurs within the overburden.

In general, the hydrogeology at the site is likely fairly uniform as noted by similar lithologic characteristics in the subsurface with the exception of local mafic units within the gneiss. These differing rock types are interlayered such that they are not likely to result in significant geochemical variation in the overburden and groundwater chemistry.

2.3 Uppermost Aquifer

The uppermost aquifer occurs within the overburden and TWR at the site. Although the degree of connection between the overburden/TWR and underlying bedrock aquifer systems is not known, the bedrock is massive with

few joints available to receive groundwater from the overlying overburden. Consequently, groundwater flow within the uppermost aquifer is anticipated to occur primarily along the transitionally weathered rock zone which is located at the interface between the overburden residual soils and massive bedrock.

The potentiometric surface for the uppermost aquifer indicates that groundwater flows radially from Ponds B, C and D, generally following topography (refer to Figure A2). Localized groundwater flow directions within this aquifer are influenced by the topography and top of rock variations on site. Locally, the potentiometric surface contours are also influenced by the pond dewatering activities.

Recharge to the uppermost aquifer is primarily through precipitation. Data indicate that there is generally a downward gradient in topographically higher areas and an upward gradient in the topographic lows. Groundwater appears to be supporting surface water flow in these tributaries, as indicated by the local overlap in topographic and groundwater contours of similar elevation. Hydrogeologic conditions at the site indicate that the uppermost aquifer at the site is unconfined and is hydraulically connected to the bedrock through the transitionally-weathered zone.

Based on review of the potentiometric contours, horizontal hydraulic gradient is variable and reflects topography at the site. The horizontal gradient appears to be steeper around the downgradient perimeter of the ponds, particularly along embankments. Generally, most of the groundwater flow across the site occurs laterally in the TWR zone. Because the site is underlain by clay-rich residual soils and relatively massive bedrock, groundwater is expected to move laterally more than vertically within the transitionally weathered rock, which is considered to have a higher hydraulic conductivity relative to the overlying clay-rich and underlying massive bedrock material.

3.0 SELECTION OF WELL LOCATIONS

Groundwater monitoring wells are installed to monitor the uppermost aquifer beneath the site. Locations are selected based on the former extent of the ash pond(s), the final ash pond closure plan, which includes excavation and removal of coal combustion residual (CCR) materials and de-watering of ponds, unit configurations (multi-unit network), and site geologic and hydrogeologic considerations. Locations are chosen to serve as upgradient (BRGWA), lateral or downgradient (BRGWC) based on groundwater flow direction determined by potentiometric evaluation. A more detailed discussion of the conceptual model for groundwater flow at the site is included in the *Geological and Hydrogeological Summary Report,* prepared by Golder (October 2018).

Monitoring wells will generally be located outside of areas with frequent auto traffic; however, wells may be installed in heavily trafficked areas when necessary to meet the groundwater monitoring objectives of the EPD rules.

A map depicting monitoring well locations for monitoring Pond-BCD as a multi-unit network is included in Appendix A, Monitoring System Details (Figure A1). Appendix A also includes a tabulated list of individual monitoring wells (Table A1) and piezometers (Table A2) with well construction details such as location coordinates, top-of-casing elevation, well depths and screened intervals. A modification that involves the addition of or a change to the monitoring network will be made by a minor modification to the permit pursuant to 391-3-4-.02(3)(b)6.

4.0 MONITORING WELL DRILLING, CONSTRUCTION, ABANDONMENT & REPORTING

The existing monitoring well network for AP-BCD is in place. Existing monitoring wells were installed following Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division Operating Procedure for Design and Installation of Monitoring Wells as a general guide for best practices. The monitoring wells and piezometers were surveyed by Metro Engineering & Surveying Co., Inc, of McDonough, Georgia, with a horizontal accuracy of 0.5 feet and a vertical accuracy to top of casing of 0.01 feet referenced to Georgia State Plane Coordinate System (Georgia State Plane, West Zone, NAD83) and vertical datum North American Vertical Datum 1988 (NAVD88). To achieve the 0.01-foot vertical accuracy, Metro used a Leica DNA10 digital level with a published accuracy of 0.9 mm per dual-traverse kilometer. Horizontal data of 0.5-foot accuracy was obtained using a Trimble R8 Dual Frequency RTK global positioning system receiver. The certified surveyor's report is included in Appendix A. Monitoring well and piezometer logs for the existing monitoring well network and piezometers, are included in Appendix A.

4.1 Drilling

A variety of well drilling methods are available for installing groundwater wells. Drilling methodology may include, but not be limited to hollow stem augers, direct push, air rotary, mud rotary, or rotosonic techniques. The drilling method will minimize the disturbance of subsurface materials and shall not cause impact to the groundwater. Borings will be advanced using an appropriate drilling technology capable of drilling and installing a well in site-specific geology. Drilling equipment shall be decontaminated before use and between borehole locations using the procedures described in the latest version of the *Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division Operating Procedure for Field Equipment Cleaning and Decontamination* as a guide.

Sampling and/or coring may be used to help determine the stratigraphy and geology. Samples will be logged under the oversight of a qualified groundwater scientist. Screen depths will be chosen based on the depth of the uppermost aquifer.

Drilling for any subsurface hydrologic investigation, installation or abandonment of groundwater monitoring wells will be performed by a driller that has, at the time of installation, a performance bond on file with the Water Well Standards Advisory Council. Driller bonds are included in Appendix A.

Monitoring wells will be installed using the latest version of the *Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division Operating Procedure for Design and Installation of Monitoring Wells* as a general guide for best practices. Drilling and well installation activities will be directed by a qualified groundwater scientist.

4.2 Design and Construction

Well construction materials will be sufficiently durable to resist chemical and physical degradation and will not interfere with the quality of groundwater samples.

4.2.1 Well Casings and Screens

ASTM, NSF rated, Schedule 40, 2-inch polyvinyl chloride (PVC) pipe with flush threaded connections will be used for the well riser and screens. Compounds that can cause PVC to deteriorate (e.g., organic compounds) are not expected at this facility. If conditions warrant, other appropriate materials may be used for construction with prior written approval from the EPD.

4.2.2 Well Intake Design

The design and construction of the intake of the groundwater wells shall: (1) allow sufficient groundwater flow to the well for sampling; (2) minimize the passage of formation materials (turbidity) into the well; and (3) ensure sufficient structural integrity to prevent the collapse of the intake structure.

Each groundwater monitoring well will include a well screen designed to limit the amount of formation material passing into the well when it is purged and sampled. Screens with 0.010-inch slots have proven effective for the earth materials at the site and will be used unless geologic conditions discovered at the time of installation dictate a different size. Screen length shall not exceed 10 feet without justification as to why a longer screen is necessary (e.g., significant variation in groundwater level). If the above techniques prove ineffective for developing a well with sufficient yield or acceptable turbidity, further steps will be taken to assure that the well screen is appropriately sized for the formation material. This may include performing sieve analysis of the formation material and determining well screen slot size based on the grain size distribution.

Pre-packed dual-wall well screens may be used for well construction. Pre-packed well screens combine a centralized inner well screen, a developed filter sand pack, and an outer conductor screen in one integrated unit composed of inert materials. Pre-packed well screens will be installed following general industry standards and using the latest version of the *Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division Operating Procedure for Design and Installation of Monitoring Wells* as a general guide. If the dual-wall pre-packed-screened wells do not yield sufficient water or are excessively turbid after development, further steps will be taken to assure that the well screen is appropriately sized for the formation material. This may include performing sieve analysis of the formation material and determining well screen slot size based on the grain size distribution.

4.2.3 Filter Pack and Annular Seal

The materials used to construct the filter pack will be clean quartz sand of a size that is appropriate for the screened formation. Fabric filters will not be used as filter pack material. Sufficient filter material will be placed in the hole and measurements taken to ensure that no bridging occurs. Upon placement of the filter pack, the well may be pumped to assure settlement of the pack. If pumping is performed, the top of filter pack depth will be measured, and additional sand added if necessary. The filter pack will extend approximately one to two feet above the top of the well screen.

The materials used to seal the annular space must prevent hydraulic communication between strata and prevent migration from overlying areas into the well screen interval. A minimum of two feet of bentonite (chips, pellets, or slurry) will be placed immediately above the filter pack. The bentonite seal will extend up to the base of any overlying confining zone or the top of the water-bearing zone to prevent cementitous grout from entering the water-bearing or screened zone. If dry bentonite is used, the bentonite must be hydrated with potable water prior to grouting the remaining annulus.

The annulus above the bentonite seal will be grouted with a cement and bentonite mixture (approximately 94 pounds cement / 3 to 5 pounds bentonite / 6.5 gallons of potable water) placed via tremie pipe from the top of the bentonite seal. During grouting, care will be taken to assure that the bentonite seal is not disturbed by locating the base of the tremie pipe approximately 2 feet above the bentonite seal and injecting grout at low pressure/velocity.

4.2.4 Protective Casing and Well Completion

After allowing the grout to settle, the well will be finished by installing a flush-mount or above-ground protective casing as appropriate, and building a surface cap. The use of flush-mount wells will generally be limited to paved surfaces unless site operations warrant otherwise. The surface cap will extend from the top of the cement grout to ground surface, where it will become a concrete apron extending outward with a radius of at least 3 feet from the edge of the well casing and sloped to drain water away from the well.

Each well will be fitted with a cap that contains a hole or opening to allow the pressure in the well to equalize with atmospheric pressure. In wells with above-ground protection, the space between the well casing and the protective casing may be filled with coarse sand or pea-gravel to within approximately 6 inches of the top of the well casing. A small weep hole will be drilled at the base of the metal casing for the drainage of moisture from the casing. Above ground protective covers will be locked.

Protective bollards may be installed around each above-grade groundwater monitoring well. Well construction in high traffic areas will generally be limited unless site conditions warrant otherwise.

The groundwater monitoring well detail attached in Appendix B, Groundwater Monitoring Well Detail, illustrates the general design and construction details for a monitoring well.

4.2.5 Well Development

After well construction is completed, wells will be developed by alternately purging and surging until relatively clear discharge water with little turbidity is observed. The goal will be to achieve a turbidity of less than 10 nephelometric turbidity units (NTUs); however, formation-specific conditions may not allow this target to be accomplished. Additionally, the stabilization criteria contained in Appendix C, Groundwater Sampling Procedures, should be met. A variety of techniques may be used to develop site groundwater monitoring wells. The method used must create reversals or surges in flow to eliminate bridging by particles around the well screen. These reversals or surges can be created by using surge blocks, bailers, or pumps. The wells will be developed using a pump capable of inducing the stress necessary to achieve the development goals. Development equipment will be decontaminated prior to first use and between wells.

In low yielding wells, potable water may be added to the well to facilitate surging of the well screen interval and removal of fine-grained sediment. If water is added, the volume will be documented and at minimum, an equal volume purged from the well.

Many geologic formations contain clay and silt particles that are small enough to work their way through the wells' filter packs over time. Therefore, the turbidity of the groundwater from the monitoring wells may gradually increase over time after initial well development. As a result, the monitoring wells may have to be redeveloped periodically to remove the silt and clay that has worked its way into the filter pack of the monitoring wells. Each monitoring well should be redeveloped when sample turbidity values have significantly increased since initial development or since prior redevelopment. The redevelopment should be performed as described above.

4.3 Well Abandonment

Monitoring wells will be abandoned using industry-accepted practices and using the Manual for Groundwater Monitoring (1991) and Georgia Water Well Standards Act (1985) as guides. The wells will be abandoned under the direction of a geologist or engineer registered in Georgia. Neat Portland cement or bentonite will be used as appropriate to complete abandonment and seal the well borehole.

Per Georgia Rule 391-3-4-.10(6)(g): Monitoring wells require abandonment and replacement after two consecutive dry sampling events, unless an alternate schedule is approved by the GA EPD. Well abandonment will be directed by a qualified groundwater scientist.

4.4 Documentation

The following information documenting the construction and development of each well is provided on the boring logs for the existing monitoring system (Appendix A). Within 60 days of the construction and development, or abandonment of each groundwater monitoring well, a well installation/abandonment report will be submitted to the EPD by a qualified groundwater scientist or engineer. For installed wells, the following information will be provided at a minimum:

- Well identification
- Name of drilling contractor and type of drill rig
- Documentation stating that a Georgia-registered professional surveyor shall certify that the horizontal accuracy for the installed monitoring wells is 0.5 feet, and vertical accuracy for top of casing elevations to 0.01 feet using a known datum.
- Documentation that the driller, at the time the monitoring wells were installed, had a bond on file with the Water Well Standards Advisory Council
- Type of protective well cap and sump dimensions for each well
- Screen materials and design (i.e., interval in feet below ground surface and elevation)
- Filter pack material/size and volume (placement narrative)
- Seal emplacement method and type/volume of sealant
- Surface seal and volumes/mix of annular seal material
- Well development date
- Well turbidity following development
- Narrative of well development method - specific well development procedure.

5.0 GROUNDWATER MONITORING PARAMETERS AND FREQUENCY

The following describes groundwater sampling requirements with respect to parameters for analysis, sampling frequency, sample preservation and shipment, and analytical methods. Groundwater samples used to provide compliance monitoring data will not be filtered prior to collection.

Table 1, Groundwater Monitoring Parameters and Frequency presents the groundwater monitoring parameters and sampling frequency. A minimum of eight independent samples from each groundwater well will be collected and analyzed for 40 CFR 257, Subpart D, Appendix III and Appendix IV test parameters to establish a background statistical dataset. Subsequently, in accordance with 391-3-4-.10(6), the monitoring frequency for the Appendix III parameters will be at least semi-annual during the active life of the facility and the post-closure care

period. If required, assessment monitoring will be performed per Georgia Chapter 391-3-4-.10, Rules for Solid Waste Management. GPC may petition for an alternate monitoring schedule for the site pursuant to applicable rules.

When referenced throughout this plan, Appendix III and Appendix IV parameters refer to the parameters contained in Appendix III and Appendix IV of 40 CFR 257, Subpart D, 80 Fed. Reg. 21468 (April 17, 2015).

As shown on Table 2, Analytical Method, the groundwater samples will be analyzed using methods specified in USEPA Manual SW-846, EPA 600/4-79-020, Standard Methods for the Examination of Water and Wastewater (SM18-20), USEPA Methods for the Chemical Analysis of Water and Wastes (MCAWW), American Society for Testing and Materials (ASTM), or other suitable analytical methods approved by the Georgia EPD. The method used will be able to reach a suitable practical quantification limit to detect natural background conditions at the facility. Field instruments used to measure pH must be accurate and reproducible to within 0.1 Standard Units (S.U.).

Table 1: GROUNDWATER MONITORING PARAMETERS & FREQUENCY

MONITORING PARAMETER		GROUNDWATER MONITORING	
		BACKGROUND	SEMI-ANNUAL EVENT(S)
FIELD PARAMETERS	Temperature	X	X
	pH	X	X
	Specific Conductance	X	X
	ORP	X	X
	Turbidity	X	X
	Dissolved Oxygen	X	X
APPENDIX III (DETECTION)	Boron	X	X
	Calcium	X	X
	Chloride	X	X
	Fluoride	X	X
	pH (field)	X	X
	Sulfate	X	X
	Total Dissolved Solids	X	X
APPENDIX IV (ASSESSMENT)	Antimony	X	Assessment sampling frequency and parameter list determined in accordance with Georgia Chapter 391-3-4-.10(6)
	Arsenic	X	
	Barium	X	
	Beryllium	X	
	Cadmium	X	
	Chromium	X	
	Cobalt	X	
	Fluoride	X	
	Lead	X	
	Lithium	X	
	Mercury	X	
	Molybdenum	X	
	Selenium	X	
	Thallium	X	
	Radium 226 & 228	X	

Table 2: ANALYTICAL METHODS

PARAMETERS	EPA METHOD NUMBER
APPENDIX III	
Boron	EPA 6010B/6020
Calcium	EPA 6010B/6020
Chloride	EPA 300.0/300.1/9250/9251/9253/9056A
Fluoride	EPA 300.0/300.1/9214/9056A
pH	150.1 field
Sulfate	EPA 9035/9036/9038300.0/300.1/9056A
Total Dissolved Solids (TDS)	EPA 160/2540C
APPENDIX IV	
Antimony	EPA 7040/7041/6010B/6020
Arsenic	EPA 7060A/7061A/6010B/6020
Barium	EPA 7080A/7081/6010B/6020
Beryllium	EPA 7090/7091/6010B/6020
Cadmium	EPA 7130/7131A/6020
Chromium	EPA 7190/7191/6010B/6020
Cobalt	EPA 7200/7201/6010B/6020
Fluoride	EPA 300.0/300.1/9214/9056/9214
Lead	EPA 7420/7421/6010B/6020
Lithium	EPA 6010/6020B
Mercury	EPA 7470
Molybdenum	EPA 6010/6020B
Selenium	EPA 7740/7741A/6010B/6020
Thallium	EPA 7840/7841/6010/6020
Radium 226 and 228 combined	EPA 903/9320/9315

6.0 SAMPLE COLLECTION

During each sampling event, samples will be collected and handled in accordance with the procedures specified in Appendix C, Groundwater Sampling Procedures. Sampling procedures were developed using standard industry practice and USEPA Region 4 Field Branches Quality System and Technical Procedures as a guide. Low-flow sampling methodology will be utilized for sample collection. Alternative industry accepted sampling techniques may be used when appropriate with prior EPD approval.

For groundwater sampling, positive gas displacement Teflon or stainless-steel bladder pumps will be used for purging. If dedicated bladder pumps are not used, portable bladder pumps or peristaltic pumps (with dedicated or disposable tubing) may be used. When non-dedicated equipment is used, it will be decontaminated prior to use and between wells.

Groundwater wells that are determined to be dry for two consecutive sampling events should be replaced, unless an alternate schedule has been approved by EPD.

7.0 CHAIN-OF-CUSTODY

Samples will be handled under chain-of-custody (COC) procedures beginning in the field. The COC record will contain the following information:

- Sample identification numbers
- Signature of collector
- Date and time of collection
- Sample type
- Sample point identification
- Number of sample containers
- Signature of person(s) involved in the chain of possession
- Dates and times of possession by each individual

The samples will remain in the custody of assigned personnel, an assigned agent, or the laboratory. If the samples are transferred to other employees for delivery or transport, the sampler or possessor must relinquish possession and the samples must be received by the new owner.

If the samples are being shipped, a hard copy COC will be signed and enclosed within the shipping container.

Samplers must use COC forms provided by the analytical laboratory or use a COC form similarly formatted and containing the information listed above.

8.0 FIELD AND LABORATORY QUALITY ASSURANCE/QUALITY CONTROL

Field quality control samples will be prepared the same as compliance samples with regards to sample volume, containers, and preservation. The following quality control samples will be collected during each sampling event:

Field Equipment Rinsate Blanks - Where sampling equipment is not new or dedicated, an equipment rinsate blank will be collected at a rate of one blank per 20 samples using non-dedicated equipment.

Field Duplicates - Field duplicates are collected by filling additional containers at the same location, and the field duplicate is assigned a unique sample identification number. One blind field duplicate will be collected for every 20 samples.

Field Blanks - Field blanks are collected in the field using the same water source that is used for decontamination. The water is poured directly into the supplied sample containers in the field and submitted to the laboratory for analysis of target constituents. One field blank will be collected for every 20 samples

The groundwater samples will be analyzed by licensed and accredited laboratories through the National Environmental Laboratory Accreditation Program (NELAP).

9.0 REPORTING RESULTS

A semi-annual groundwater report that documents the results of sampling and analysis will be submitted to EPD. Semi-annual groundwater monitoring reports will be submitted to the EPD within 90 days of receipt of the groundwater analytical data from the laboratory. At a minimum, semi-annual reports will include:

1) A narrative describing sampling activities and findings including a summary of the number of samples collected, the dates the samples were collected and whether the samples were required by the detection or assessment monitoring programs

2) A record of field sampling conditions including, well signage, well access, sampling and purging equipment condition and site conditions that may affect sampling will be recorded on the Well Inspection Form (Appendix C). These forms will be included as an appendix to the semi-annual groundwater monitoring reports

3) A brief overview of purging/sampling methodologies

4) Discussion of results

5) Recommendations for the future monitoring consistent with the Rules

6) Potentiometric surface contour map for the aquifer(s) being monitored, signed and sealed by a Georgia-registered PG or PE

7) Table of as-built information for groundwater monitoring wells including top of casing elevations, ground elevations, screened elevations, current groundwater elevations and depth to water measurements

8) Groundwater flow rate and direction calculations

9) Identification of any groundwater wells that were installed or decommissioned during the preceding year, along with a narrative description of why these actions were taken

10) A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels

11) If applicable, semi-annual assessment monitoring results

12) Any alternate source demonstration completed during the previous monitoring period, if applicable

13) Laboratory reports

14) COC documentation

15) Field sampling logs including field instrument calibration, indicator parameters and parameter stabilization data

16) Documentation of non-functioning wells

17) Table of current analytical results for each well, highlighting statistically significant increases and concentrations above maximum contaminant level (MCL)

18) Statistical analyses

19) Certification by a qualified groundwater scientist.

10.0 STATISTICAL ANALYSES

Groundwater quality data from each sampling event will be statistically evaluated to determine if there has been a statistically significant change in groundwater chemistry. Historical background data will be used to determine statistical limits. An interwell statistical method will be used to compare Appendix III groundwater monitoring data to background conditions. Confidence intervals will be constructed for each downgradient well and used to compare Appendix IV groundwater monitoring data to the groundwater protection standards. These statistical analyses methods are consistent with the Unified Guidance (EPA, 2009).

According to EPD rules (391-3-4-.10(6)(a), which incorporates the statistical analysis requirements of 40 CFR 257.93 by reference), the site must specify in the operating record the statistical methods to be used in evaluating groundwater monitoring data for each constituent. The statistical test chosen shall be conducted separately for each constituent in each well. As authorized by the rule, statistical tests that may be used include:

1) A prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper prediction limit. (§257.93(f)(3)).

2) A control chart approach that gives control limits for each constituent. ((§257.93(f)(4)).

3) Another statistical test method (such as prediction limits or control charts) that meets the performance standards of §257.93(g). A justification for an alternative method will be placed in the operating record and the Director notified of the use of an alternative test. The justification will demonstrate that the alternative method meets the performance standards of §257.93(g).

A site-specific statistical analysis plan that provides details regarding the statistical methods to be used will be placed in the site's operating record pursuant to 391-3-4-.10(6). Figure 1, Statistical Analysis Plan Overview, includes a flowchart that depicts the process that will be followed to develop the site-specific plan. Figure 2, Decision Logic for Determining Appropriate Statistical Methods, depicts the decision logic that will be used to determine the appropriate method as required by 391-3-4-.10(6). Figure 3 Decision Logic for Computing Prediction Limits, presents the logic that will be used to calculate site-specific statistical limits and test compliance results against those limits.

Figure 1: STATISTICAL PLAN OVERVIEW

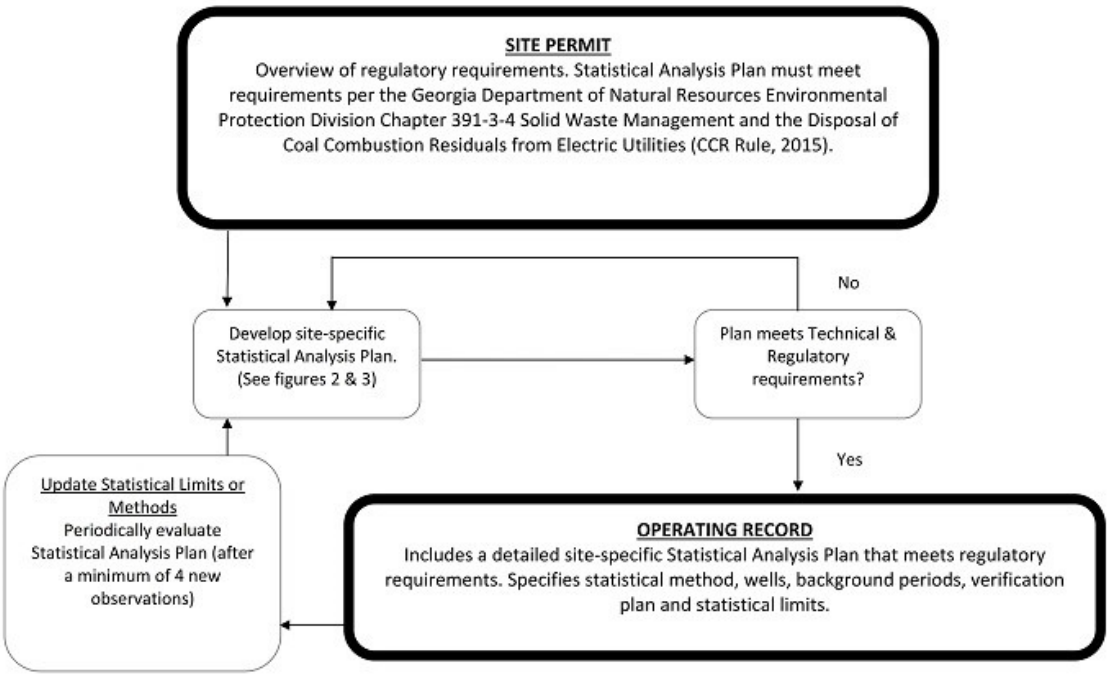


Figure 2: DECISION LOGIC FOR DETERMINING APPROPRIATE STATISTICAL METHOD

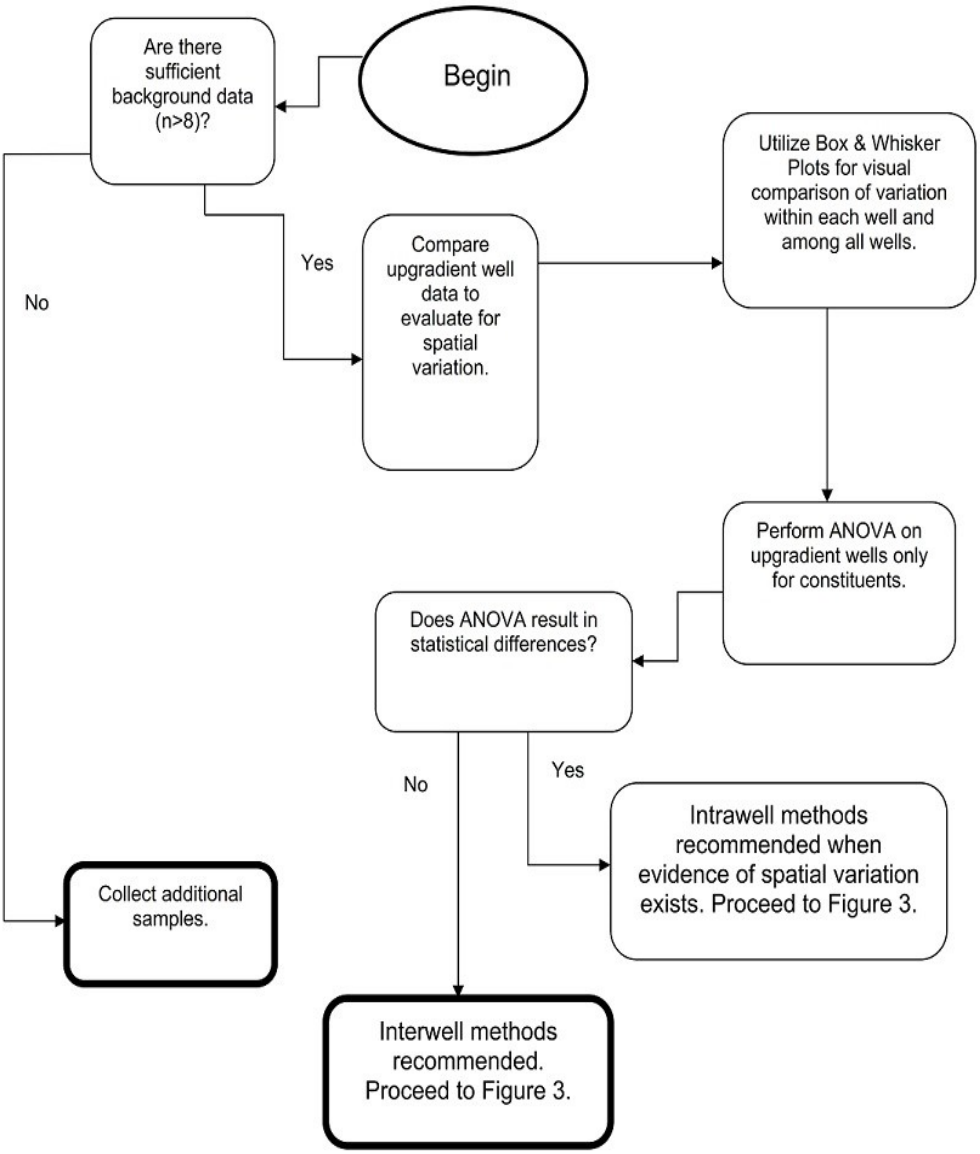
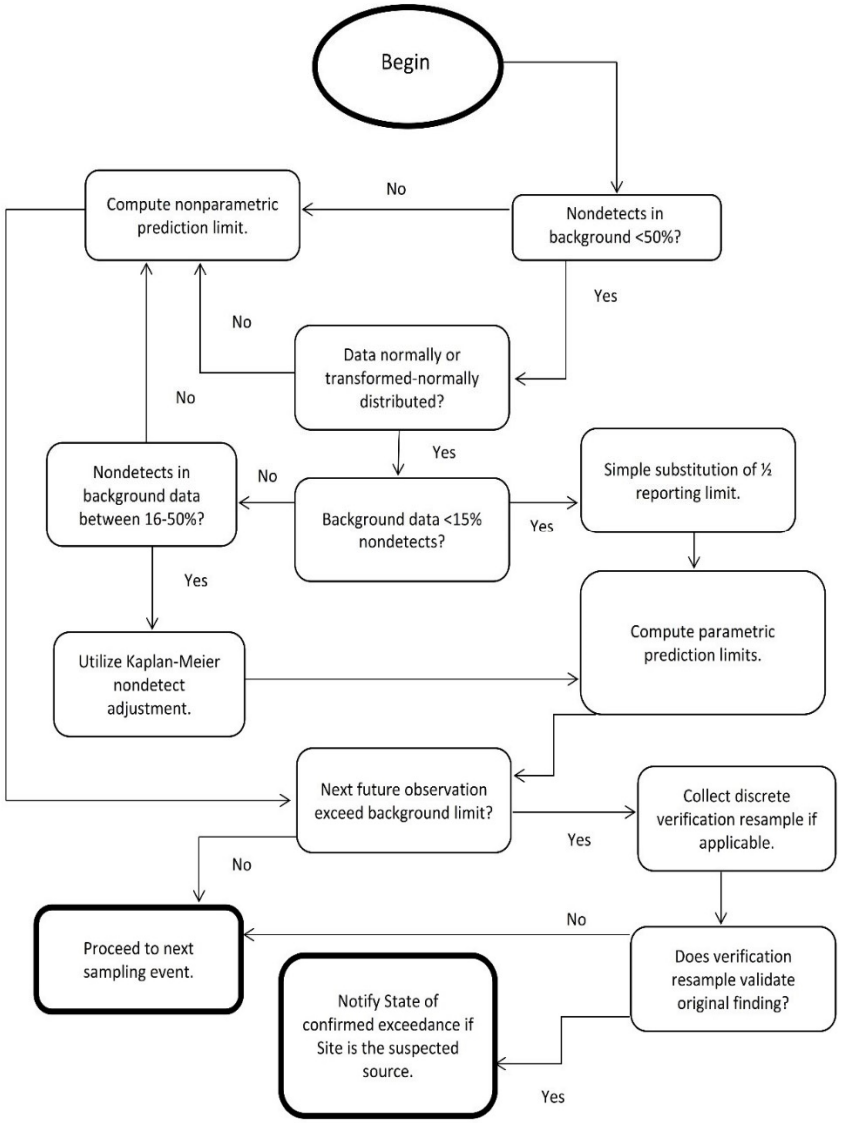


Figure 3: DECISION LOGIC FOR COMPUTING PREDICTION LIMITS



11.0 REFERENCES

American Society for Testing and Materials (ASTM)

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Golder Associates Inc., *Geological and Hydrogeological Summary Report – Plant Branch*, November 2020

Geosyntec, *Hydrogeological Assessment Report – Plant Branch*, 2020

Manual for Groundwater Monitoring (1991)

National Environmental Laboratory Accreditation Program (NELAP)

Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division, Operating Procedure for Design and Installation of Monitoring Wells

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Region 4 U.S. Environmental Protection Agency, Field Branches Quality System and Technical Procedures

U.S. Environmental Protection Agency, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, (EPA 530-R-09-007), March 2009.

U.S. Environmental Protection Agency, Science and Ecosystem Support Division, Field Equipment Cleaning and Decontamination, (SESDPROC-205-R3), December 18, 2015.

U.S. Environmental Protection Agency, 40 CFR 257, Subpart D, 80 Fed. Reg. 21468 (April 17, 2015).

U.S. Environmental Protection Agency, Manual SW-846, EPA 600/4-79-020, Standard Methods for the Examination of Water and Wastewater (SM18-20),

U.S. Environmental Protection Agency, Methods for the Chemical Analysis of Water and Wastes (MCAWW),

APPENDIX A

MONITORING SYSTEM DETAILS

Table A1: GROUNDWATER MONITORING NETWORK WELL DETAILS

Table A2: GROUNDWATER PIEZOMETER DETAILS

Figure A1: SITE PLAN AND DETECTION MONITORING WELL LOCATION MAP

Figure A2: POND BCD POTENTIOMETRIC SURFACE ELEVATION CONTOUR MAP – AUGUST 17, 2020

MONITORING WELL LOGS

PIEZOMETER WELL LOGS

DRILLER BONDS

CERTIFIED WELL SURVEY REPORT

APPENDIX A

Tables

TABLE A-1
POND BCD - GROUNDWATER MONITORING NETWORK WELL DETAILS

Georgia Power - Plant Branch
Milledgeville, GA

MONITORING WELL ID	PURPOSE	NORTHING[1]	EASTING[1]	ELEVATION TOP OF PVC CASING	GROUND ELEVATION (ft)	WELL DEPTH (ft bgs)[2]	TOP OF SCREEN ELEVATION (ft)	BOTTOM OF SCREEN ELEVATION (ft)	DATE INSTALLED	GEOLOGIC UNIT SCREENED[4]
POND BCD										
BRGWA-2S	Upgradient BCD & E	1167139.7	2549952.6	443.20	440.4	44.6	406.20	396.20	4/2/2014	Saprolite
BRGWA-2I	Upgradient BCD & E	1167130.0	2549957.3	443.14	440.5	64.3	386.20	376.20	3/14/2014	Amphibolite Gneiss
BRGWA-5S	Upgradient BCD & E	1170177.5	2549415.5	443.86	440.8	40.0	411.20	401.20	4/3/2014	Saprolite
BRGWA-5I	Upgradient BCD & E	1170183.7	2549408.0	443.79	441.1	61.2	390.30	380.30	4/3/2014	Amphibolite Gneiss
BRGWA-6S	Upgradient BCD & E	1170732.9	2551540.8	458.96	455.8	49.7	416.50	406.50	4/1/2014	Saprolite
BRGWA-12S	Upgradient BCD	1164286.6	2557142.9	434.64	431.6	58.3	383.70	373.70	3/4/2014	Residuum
BRGWA-12I	Upgradient BCD	1164301.2	2557138.9	434.39	431.5	77.6	364.30	354.30	2/20/2014	Biotote Gneiss
BRGWA-23S	Upgradient BCD	1162971.7	2557868.1	428.24	425.5	40.8	394.70	384.70	7/26/2016	Saprolite/TWR
BRGWC-25I	Downgradient B	1160583.7	2561315.1	357.37	355.0	20.5	344.50	334.50	7/25/2016	Saprolite/TWR/Biotite Gneiss
BRGWC-27I	Downgradient C	1159695.3	2559712.2	366.86	364.0	24.0	350.00	340.00	7/22/2016	Saprolite
BRGWC-29I	Downgradient C	1160297.6	2561050.2	353.23	350.6	20.0	340.60	330.60	7/23/2016	TWR
BRGWC-30I	Downgradient D	1161607.6	2557691.8	352.61	350.0	20.3	340.00	330.00	7/18/2016	Saprolite/TWR/Biotite Gneiss
BRGWC-32S	Downgradient D	1160677.7	2558497.9	406.39	403.6	45.0	368.60	358.60	7/20/2016	Saprolite
BRGWC-45	Downgradient B	1162229.8	2561075.5	384.58	381.6	57.0	335.00	325.00	2/3/2018	Saprolite/TWR/Biotite Gneiss
BRGWC-47	Downgradient D	1162700.7	2559456.7	411.20	408.8	92.0	327.20	317.20	1/25/2018	TWR
BRGWC-50	Downgradient B	1161593.3	2562372.9	381.35	378.8	65.0	324.20	314.20	1/31/2018	Residuum/Biotite Gneiss
BRGWC-52I	Downgradient B	1161275.0	2562145.3	383.87	381.2	73.9	317.30	307.30	8/6/2018	Biotite Gneiss

Notes:

ft = feet

ft bgs = feet below ground surface

[1] Coordinates referenced to North American Datum (NAD) 1983, State Plane, Georgia-West Zone, feet.

[2] Vertical elevations are in feet relative to North American Vertical Datum (NAVD) 1988.

[3] Total well depth accounts for the sump if data provided on well construction logs.

[4] TWR = Transitionally Weathered Rock

[5] Equipment used in surveying location work - Timble R8 Dual Frequency GPS Reciever, Leica TS16 Total Station, and Leica DNA10 Digital Level

[6] Field survey work by Metro Engineering & Surveying Co., Inc. (See seal on this page)

I hereby certify that the center of well casing (PVC) has a horizontal accuracy of 0.5+/- feet or better using a Trimble R8 Dual Frequency RTK (survey-grade) global positioning system receiver referencing the Georgia State Plane, west zone, NAD83(2011) coordinate system in US survey feet. The top of well casing (PVC) elevation data was determined in feet above mean sea level based on the NAVD88 vertical datum. Vertical data was confirmed to be accurate within 0.01 foot through establishment of a closed level check loop with a Leica DNA10 digital level having a published accuracy of 0.9mm per dual-traverse kilometer.

James R. Green R.L.S. No. 2543

Date: 7/23/20

GEORGIA REGISTERED NO. LS002543 PROFESSIONAL LAND SURVEYOR JAMES RANDOLPH GREEN

TABLE A-2
GROUNDWATER PIEZOMETER NETWORK DETAILS
Georgia Power - Plant Branch
Milledgeville, GA

MONITORING WELL ID	PURPOSE	NORTHING[1]	EASTING[1]	ELEVATION TOP OF PVC CASING	GROUND ELEVATION (ft)	WELL DEPTH (ft bgs)[2]	TOP OF SCREEN ELEVATION (ft)	BOTTOM OF SCREEN ELEVATION (ft)	DATE INSTALLED	GEOLOGIC UNIT SCREENED[4]
PIEZOMETERS										
PZ-1D	Upgradient	1171999.0	2551598.1	463.41	462.9	160.0	NA	302.90	4/4/2014	Biotite Gneiss
PZ-1I	Upgradient	1171995.8	2551577.8	464.71	461.9	79.5	392.80	382.80	3/10/2014	Biotite Gneiss
PZ-1S	Upgradient	1171996.4	2551588.0	465.07	462.4	65.0	407.80	397.80	3/20/2014	Saprolite
PZ-3D	Upgradient	1165474.4	2550275.1	487.50	486.7	130.0	NA	358.59	3/27/2014	Biotite Gneiss
PZ-3I	Upgradient	1165494.5	2550273.2	489.49	486.5	54.6	442.30	432.30	3/11/2014	Biotite Gneiss
PZ-3S	Upgradient	1165484.5	2550274.6	490.53	487.0	39.9	457.50	447.50	3/11/2014	Saprolite
PZ-4I	Upgradient	1163246.8	2551282.0	482.98	479.9	46.8	443.50	433.50	3/11/2014	Biotite Gneiss
PZ-4S	Upgradient	1163247.8	2551270.1	482.87	479.9	30.0	460.30	450.30	3/10/2014	Saprolite
PZ-7S	Downgradient	1169419.2	2553055.6	451.57	449.0	44.5	414.90	404.90	4/1/2014	Saprolite
PZ-8S	Upgradient	1167801.1	2551188.9	453.08	450.5	49.5	411.40	401.40	4/1/2014	Saprolite
PZ-9S	Upgradient	1162633.3	2553089.6	469.28	466.1	48.0	428.50	418.50	3/5/2014	Saprolite
PZ-10S	Downgradient	1164021.5	2554990.5	433.85	431.0	39.0	402.40	392.40	3/5/2014	Saprolite
PZ-11S	Downgradient	1162467.3	2557002.5	393.99	390.9	24.5	376.80	366.80	2/20/2014	Saprolite
PZ-12D	Downgradient	1164311.9	2557136.4	434.09	431.4	141.7	350.10	290.10	4/14/2014	Biotite Gneiss
PZ-13S	Downgradient	1168011.4	2555276.7	409.97	406.5	34.7	382.20	372.20	3/19/2014	Saprolite
PZ-14I	Downgradient	1168398.2	2554365.6	422.71	419.9	53.8	376.50	366.50	3/20/2014	Biotite Gneiss
PZ-14S	Downgradient	1168398.7	2554359.2	423.31	420.2	37.6	393.00	383.00	3/20/2014	Saprolite
PZ-15I	Downgradient	1167720.9	2554399.2	403.06	400.2	88.7	321.90	311.90	3/25/2014	Biotite Gneiss/Amphibolite
PZ-15S	Downgradient	1167720.3	2554394.0	402.90	400.1	39.9	370.20	360.20	3/27/2014	Saprolite
PZ-16I	Downgradient	1166980.7	2554587.5	382.45	379.5	38.6	351.30	341.30	3/14/2014	Amphibolite Gneiss
PZ-16S	Downgradient	1166977.8	2554581.4	382.52	379.3	19.1	370.60	360.60	3/18/2014	Saprolite
PZ-17I	Downgradient	1166313.8	2554702.5	365.33	362.3	43.5	329.20	319.20	3/17/2014	Amphibolite Gneiss
PZ-18I	Downgradient	1160766.2	2557745.5	362.55	359.6	38.4	331.30	321.30	2/26/2014	Biotite Gneiss
PZ-18S	Downgradient	1160757.3	2557747.4	362.82	359.7	24.2	345.00	335.00	3/26/2014	Saprolite
PZ-19I	Downgradient	1159797.1	2558900.0	371.74	368.9	43.7	335.60	325.60	3/4/2014	Biotite Gneiss
PZ-19S	Downgradient	1159805.4	2558894.5	371.42	368.4	28.0	350.80	340.80	3/4/2014	Saprolite
PZ-20I	Downgradient	1159495.4	2560160.2	365.34	362.2	29.5	343.10	333.10	3/5/2014	Biotite Gneiss
PZ-20S	Downgradient	1159490.3	2560157.0	365.41	362.2	15.3	357.30	347.30	3/5/2014	Saprolite
PZ-21I	Downgradient	1160591.6	2561328.2	358.92	355.8	24.4	341.80	331.80	3/10/2014	Biotite Gneiss
PZ-21S	Downgradient	1160592.4	2561321.3	358.52	355.5	9.8	351.10	346.10	3/11/2014	Residuum/Saprolite
PZ-23I	Downgradient	1162975.4	2557877.7	427.74	425.1	66.5	368.60	358.60	7/29/2016	Biotite Gneiss

TABLE A-2
GROUNDWATER PIEZOMETER NETWORK DETAILS
Georgia Power - Plant Branch
Milledgeville, GA

MONITORING WELL ID	PURPOSE	NORTHING[1]	EASTING[1]	ELEVATION TOP OF PVC CASING	GROUND ELEVATION (ft)	WELL DEPTH (ft bgs)[2]	TOP OF SCREEN ELEVATION (ft)	BOTTOM OF SCREEN ELEVATION (ft)	DATE INSTALLED	GEOLOGIC UNIT SCREENED[4]
PIEZOMETERS										
PZ-24S	Downgradient A	1162400.9	2562862.2	354.10	351.4	42.0	319.90	309.90	7/27/2016	Saprolite
PZ-26I	Downgradient	1160669.0	2561626.4	370.63	368.0	30.5	347.50	337.50	7/26/2016	Biotite Gneiss
PZ-28I	Downgradient	1159505.1	2560151.7	364.81	362.5	24.0	348.50	338.50	7/24/2016	TWR/Biotite Gneiss
PZ-31S	Downgradient	1160936.9	2557971.8	376.77	374.3	39.5	344.80	334.80	7/26/2016	TWR
PZ-39	Downgradient	1163675.4	2557460.5	434.78	432.0	44.7	397.30	387.30	7/30/2016	Saprolite
PZ-40S	Downgradient A	1162414.9	2562807.7	355.96	353.2	40.2	324.40	314.40	2/14/2017	Residuum
PZ-41S	Downgradient A	1162431.8	2562759.4	357.17	354.3	44.2	320.50	310.50	2/14/2017	Saprolite
PZ-42S	Downgradient A	1162845.7	2562735.0	361.66	359.0	32.2	337.20	327.20	2/9/2017	Residuum
PZ-44	Downgradient B	1161724.6	2561587.5	383.04	380.5	57.0	333.90	323.90	2/2/2018	Saprolite/TWR/Biotite Gneiss
PZ-46	Downgradient B	1162756.2	2560559.0	384.64	382.1	45.6	346.50	336.50	2/5/2018	Saprolite/TWR/Biotite Gneiss
PZ-48	Downgradient D	1163046.7	2558444.6	420.90	418.3	67.0	361.70	351.70	1/24/2018	Saprolite/TWR/Amphibolite
PZ-49	Downgradient B	1163321.2	2561125.7	384.99	382.2	17.0	375.60	365.60	1/30/2018	Residuum/Biotite Gneiss
PZ-51S	Downgradient B	1161613.4	2562433.1	380.27	377.9	45.4	337.90	332.90	8/1/2018	Residuum
PZ-51I	Downgradient B	1161631.1	2562439.3	380.52	378.0	65.0	323.10	313.10	8/1/2018	Saprolilte/TWR/Biotite Gneiss
PZ-52D	Downgradient E	1168053.9	2554051.7	417.03	414.3	59.5	364.80	354.8	5/14/2020	Biotite Gneiss
PZ-53D	Downgradient E	1164393.8	2554984.3	434.68	431.6	139.4	302.20	292.2	5/17/2020	Saprolilte/TWR/Biotite Gneiss
PZ-54	Downgradient E	1164828.7	2555458.3	443.86	440.8	52.0	398.80	388.8	5/15/2020	Saprolite/TWR
PZ-55	Downgradient E	1163208.0	2554783.6	453.07	450.2	49.3	410.90	400.9	5/19/2020	Saprolite/TWR/Biotite Gneiss
PZ-56	Downgradient B	1162965.1	2554086.3	418.84	416.2	29.3	396.90	386.90	5/20/2020	Saprolilte/TWR/Biotite Gneiss

Notes:

ft = feet

ft bgs = feet below ground surface

[1] Coordinates referenced to North American Datum (NAD) 1983, State Plane, Georgia-West Zone, feet.

[2] Vertical elevations are in feet relative to North American Vertical Datum (NAVD) 1988.

[3] Total well depth accounts for the sump if data provided on well construction logs.

[4] TWR = Transitionally Weathered Rock

[4] Equipment used in surveying location work - Timble R8 Dual Frequency GPS Reciever, Leica TS16 Total Station, and Leica DNA10 Digital Level

[5] Field survey work by Metro Engineering & Surveying Co., Inc. (See seal on this page)

I hereby certify that the center of well casing (PVC) has a horizontal accuracy of 0.5+/- feet or better using a Trimble R8 Dual Frequency RTK (survey-grade) global positioning system receiver referencing the Georgia State Plane, west zone, NAD83(2011) coordinate system in US survey feet. The top of well casing (PVC) elevation data was determined in feet above mean sea level based on the NAVD88 vertical datum. Vertical data was confirmed to be accurate within 0.01 foot through establishment of a closed level check loop with a Leica DNA10 digital level having a published accuracy of 0.9mm per dual-traverse kilometer.

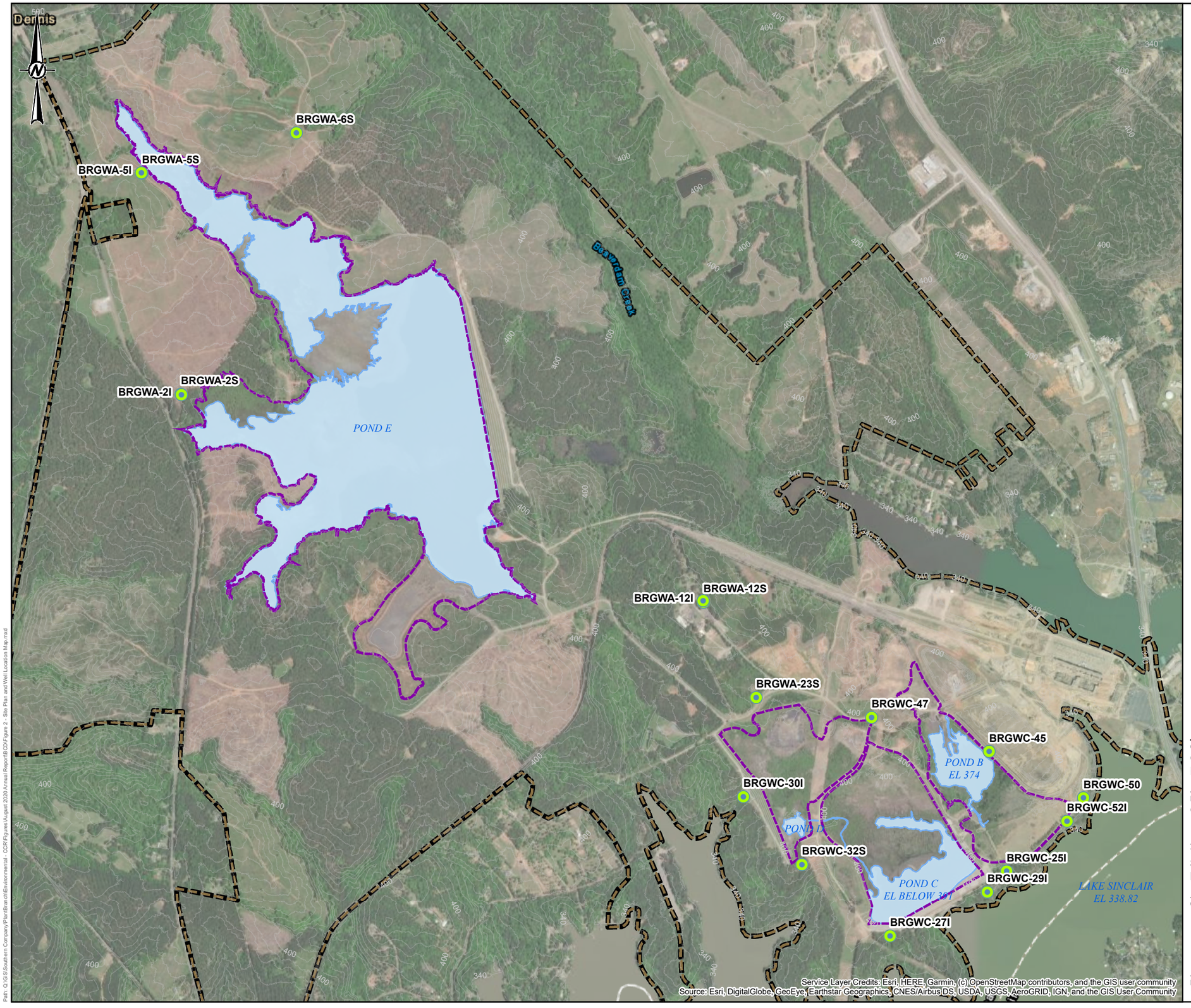
James R. Green R.L.S. No. 2543

Date: 7/23/20

GEORGIA REGISTERED NO. LS002543 PROFESSIONAL LAND SURVEYOR JAMES RANDOLPH GREEN

APPENDIX A

Figures



LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY BOUNDARY
- APPROXIMATE ASH POND BOUNDARY
- APPROXIMATE SURFACE WATER LIMITS

REFERENCE

1. SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

2. COORDINATE SYSTEM: NAD 1983 STATE PLAN GEORGIA WEST (U.S. FEET).

3. BORING/PIEZOMETER LOCATIONS PROVIDED BY METRO ENGINEERING & SURVEYING CO., INC.

4. PROPERTY LINE PROVIDED BY SOUTHERN COMPANY SERVICES.

5. TOPOGRAPHIC CONTOURS PROVIDED BY GEORGIA POWER COMPANY (MARCH 2018).

1500 750 0 1500
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

Georgia Power

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
SITE PLAN AND DETECTION MONITORING WELL LOCATION MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2020-05-21
PREPARED	BAS
DESIGN	BAS
REVIEW	RK
APPROVED	DLP

PROJECT No. 166625418 | CONTROL 1666254V001-GIS.mxd | Rev. 0 | FIGURE **A1**

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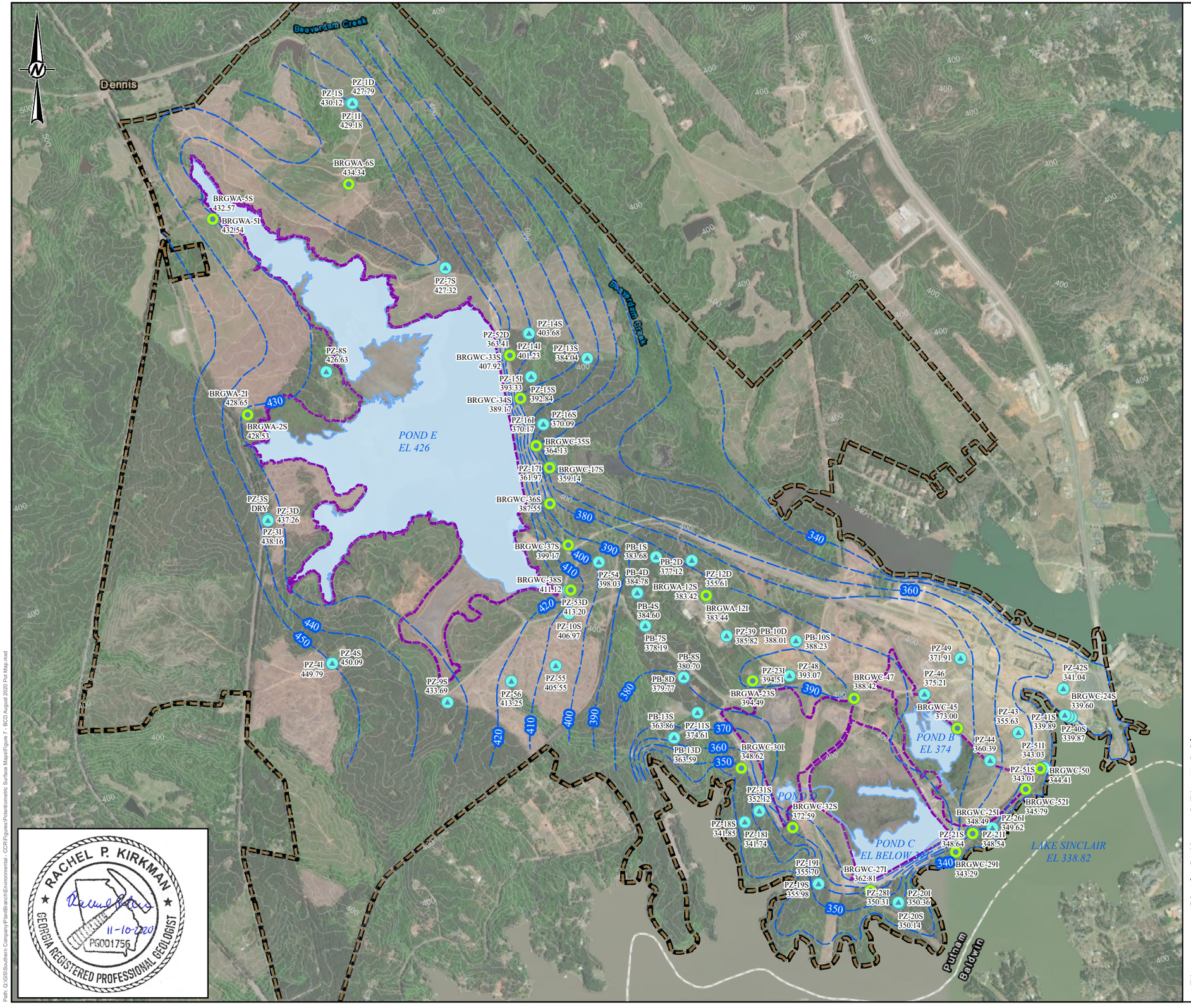

LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY BOUNDARY
- GROUNDWATER ELEVATION CONTOUR (NAVD88)
- APPROXIMATE ASH POND BOUNDARY
- APPROXIMATE SURFACE WATER LIMITS

NOTES

1. GROUNDWATER SURFACE CONTOUR INTERVAL = 10 FEET

2. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, AND TOPOGRAPHIC CONTOURS. THEREFORE, CONTOURS MAY NOT REFLECT ACTUAL CONDITIONS.

3. DEEP AND INTERMEDIATE WELL ELEVATIONS WERE NOT USED FOR GROUNDWATER CONTOURING.

4. NAVD88=NORTH AMERICAN VERTICAL DATUM 88

5. GROUNDWATER ELEVATIONS RECORDED AUGUST 17, 2020.

REFERENCE

1. SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

2. COORDINATE SYSTEM: NAD 1983 STATE PLAN GEORGIA WEST (U.S. FEET).

3. BORING/PIEZOMETER LOCATIONS PROVIDED BY METRO ENGINEERING & SURVEYING CO., INC.

4. PROPERTY LINE PROVIDED BY SOUTHERN COMPANY SERVICES.

1500 750 0 1500
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

Georgia Power

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
GROUNDWATER SURFACE CONTOUR MAP
AUGUST 17, 2020

CONSULTANT
GOLDER

YYYY-MM-DD	2020-07-24
PREPARED	DJC
DESIGN	ED
REVIEW	RK
APPROVED	DLP

PROJECT No.	CONTROL	Rev.	FIGURE
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APPENDIX A

AP-BCD Monitoring

Well Logs

Location resurveyed June - July 2020

BORING BRGWA-2S/PZ-02 S

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DATE STARTED 4/2/2014 **COMPLETED** 4/2/2014 **GROUND ELEVATION** 440.4 ft **COORDINATES** N 1167139.7 E 2549952.6

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 44.6 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 10.2 ft. after 288 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 443.20)
0			440.4		
5		See PZ-02 I for material descriptions			
10		▼			
15					
20					
25					
30					Annular Seal
35					Filter Pack
40					
					Screen Tip

Bottom of borehole at 44.6 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING BRGWA-2I/PZ-02 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DATE STARTED 3/13/2014 **COMPLETED** 3/14/2014 **GROUND ELEVATION** 440.5 ft **COORDINATES** N 1167130 E 2549957.3

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 64.3 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 10.1 ft. after 288 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			440.5		Top of casing Elev. = 443.14
5		subsoil damp, medium stiff, silty CLAY, red and yellow-red			
10		saprolite damp, medium stiff, silty CLAY, yellow-red with black mottles, micas	428.5		
15		saprolite very damp, soft, clayey SILT, soft, red-brown, micas			
20		saprolite very damp, soft, clayey SILT, soft, red-brown, micas, some sand			
25		saprolite very damp, soft, clayey SILT, red-brown, micas, some sand			
30		saprolite very damp, hard, sandy SILT, dark gray and dark brown with black and white mottles	408.5		
35		saprolite wet, dense, silty SAND, dark gray-brown	403.5		
40		saprolite wet, stiff, clayey SILT, stiff, gray-brown with black mottles, micas	397.5		
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

Location resurveyed June - July 2020

BORING BRGWA-2I/PZ-02 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
		saprolite wet, very dense, silty SAND, very dense, dark gray with white mottles *(Con't)*	440.5
50		saprolite wet, dense, silty SAND, very dense, dark gray	390.9
		fine to medium grain, very hard, not weathered, flow banded, few fractures, hornblende, biotite, feldspar, quartz, trace pyrite, vertical quartz veins, fresh	
55		fine to coarse grain, very hard, not weathered, flow banded, few fractures, hornblende, biotite, feldspar, quartz, trace pyrite and garnet, fresh	
60		fine to coarse grain, very hard, not weathered, flow banded, few fractures, hornblende, biotite, feldspar, quartz, trace pyrite, fresh	
			376.2

Bottom of borehole at 64.3 feet.

Natural Gamma

75 150 225

WELL DATA

Top of casing Elev. = 443.14

(CONTINUED)

Annular Seal

Filter Pack

Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING BRGWA-5S/PZ-05 S

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 4/3/2014 **COMPLETED** 4/3/2014 **GROUND ELEVATION** 440.8 ft **COORDINATES** N 1170177.5 E 2549415.5

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 40 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 10 ft. after 250 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 443.86)
0			440.8		
5		See PZ-05 I for material descriptionsSee PZ-5 I for material descriptions			
10		▼			
15					
20					
25					Annular Seal
30					Filter Pack
35					
40		Bottom of borehole at 40.0 feet.			Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING BRGWA-5I/PZ-05 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DATE STARTED 4/2/2014 **COMPLETED** 4/3/2014 **GROUND ELEVATION** 441.1 ft **COORDINATES** N 1170183.7 E 2549408

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 61.2 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 10 ft. after 250 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 443.79)
			441.1		Surface Seal
5		residuum damp, very stiff, silty CLAY, red with yellow-red mottles			
10		residuum damp, medium stiff, silty CLAY, red with yellow-red and black mottles			
15		saprolite very damp, soft, silty CLAY, yellow-red with black mottles, mica	425.1		
20		saprolite wet, soft, clayey SILT, red-yellow with black mottles			Annular Fill
25		saprolite wet, medium stiff, clayey SILT, yellow-brown with black mottles, mica			
30		saprolite wet, stiff, clayey SILT, brown-gray with black mottles			
35		saprolite wet, very stiff, sandy SILT, gray with white mottles			
40		saprolite wet, hard, sandy SILT, gray with white mottles			
45		----auger refusal----	397.2 396.4		

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

Location resurveyed June - July 2020

BORING BRGWA-5I/PZ-05 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
		(CONTINUED)	441.1
		Amphibolite GNEISS fine to medium grain, moderately weathered, massive, numerous fractures, black and white grains, boulder	394.8
		Soft material, norecovery	
50		**Amphibolite GNEISS** fine to coarse grain, not to moderately weathered, massive, numerous fractures, light gray partially weathered rock, then coarse grained weathered amphibolite	
		fine to medium grain, not to highly weathered, massive, numerous fractures, gray to dark gray, light gray banding	
55			
		fine to medium grain, not to slightly weathered, massive, fractures 58-59 ft., gray, light gray banding, pyrite	
60			
		fine to medium grain, not to slightly weathered, massive, fractures 60-61 ft., gray, light gray banding, pyrite	379.9

Bottom of borehole at 61.2 feet.

Natural Gamma

75 150 225

WELL DATA

Top of casing Elev. = 443.79

(CONTINUED)

Annular Fill

Annular Seal

Filter Pack

Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING BRGWA-6S/PZ-06 S

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 4/1/2014 **COMPLETED** 4/1/2014 **GROUND ELEVATION** 455.8 ft **COORDINATES** N 1170732.9 E 2551540.8

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 51 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 24.9 ft. after 300 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 458.96)
			455.8		
5		residuum dry, very stiff, CLAY, red			
10		residuum dry, medium stiff, silty CLAY, red with yellow-red mottles			
			442.8		
15		saprolite dry, medium stiff, clayey SILT, red with red-yellow and black mottles, micas			
20		saprolite dry, medium stiff, clayey SILT, red with red-yellow and black mottles, micas			
			431.8		
25		saprolite wet, soft, clayey SILT, brown-yellow with black mottles, micas			
30		saprolite wet, soft, clayey SILT, brown-yellow with black mottles, micas			
35		saprolite wet, medium stiff, clayey SILT, brown-yellow with black mottles, micas			Annular Seal
40		saprolite wet, medium stiff, clayey SILT, brown-yellow with black mottles, micas			Filter Pack
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING BRGWA-6S/PZ-06 S

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			455.8		Top of casing Elev. = 458.96 (CONTINUED)
50		saprolite wet, stiff, clayey SILT, olive-yellow with gray mottles, sand *(Con't)*			**Screen Tip Elevation**
		saprolite wet, medium stiff, clayey SILT, olive-gray with brown mottles	404.8		

Bottom of borehole at 51.0 feet.

Location resurveyed June - July 2020

BORING BRGWA-12S/PZ-12 S

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DATE STARTED 3/4/2014 **COMPLETED** 3/4/2014 **GROUND ELEVATION** 431.6 ft **COORDINATES** N 1164286.6 E 2557142.9

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 58.3 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 47.5 ft. after 300 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 434.64)
			431.6		
5		See PZ-12 D and PZ-12 I for material descriptions			
10					
15					
20					
25					
30					
35					
40					Annular Seal
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

Location resurveyed June - July 2020

SOUTHERN COMPANY

BORING LOG

BORING BRGWA-12S/PZ-12 S

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			431.6		Top of casing Elev. = 434.64 (CONTINUED)
50		▼			Filter Pack
55					Screen Tip Elevation
		Bottom of borehole at 58.3 feet.			

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING BRGWA-12I/PZ-12 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DATE STARTED 2/20/2014 **COMPLETED** 2/20/2014 **GROUND ELEVATION** 431.5 ft **COORDINATES** N 1164301.2 E 2557138.9

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Rotary **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 77.6 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 47.4 ft. after 240 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			431.5		Top of casing Elev. = 434.39
5		dry, very stiff, sandy CLAY, red with yellow-red mottles, micas			
10		dry, very stiff, sandy CLAY, red with yellow-red mottles, micas			
15		dry, very stiff, silty CLAY, yellow-red with gray-brown mottles, sand, micas			
			413.5		
20		dry, stiff, clayey SILT, red and pink with yellow and yellow-brown mottles, sand, micas			
25		dry, medium dense, clayey SILT, brown-yellow with red mottles, white mottles, black mottles, micas			
30		damp, medium dense, clayey SILT, strong brown and pink with red and white mottles, micas			
35		damp, stiff, clayey SILT, yellow-red with black mottles, sand, micas			
40		damp, stiff, clayey SILT, pale brown with white mottles, sand, micas			
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

Location resurveyed June - July 2020

SOUTHERN COMPANY

BORING LOG

BORING BRGWA-12I/PZ-12 I

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			431.5		Top of casing Elev. = 434.39 (CONTINUED)
		damp, stiff, clayey SILT, pale brown with white and red mottles, sand, micas *(Con't)*			
50		wet, stiff, clayey SILT, wery pale brown with white mottles, sand, micas			
55		wet, hard, clayey SILT, pale brown with white mottles, sand, micas			
60		wet, hard, sandy SILT, hard, pale gray-brown, micas			**Annular Seal**
			366.8		
65		wet, hard, sandy SILT, light olive-brown, micas			**Filter Pack**
		Felsic biotite GNEISS medium to coarse grain, moderately weathered, flow banded, numerous fractures, dark gray, black-white banding, feldspar, quartz, biotite			
70		medium to coarse grain, not weathered, flow banded, few fractures, distinct black-white banding, feldspar, quartz, biotite, felspar phenocrysts			
75		medium to coarse grain, not weathered, flow banded, few fractures, distinct black-white banding, feldspar, quartz, biotite, felspar phenocrysts	353.9		**Screen Tip Elevation**

Bottom of borehole at 77.6 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-23S/BRGWA-23S

SHEET 1 of 1

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 41.00 ft
LOCATION: Milledgville, GA

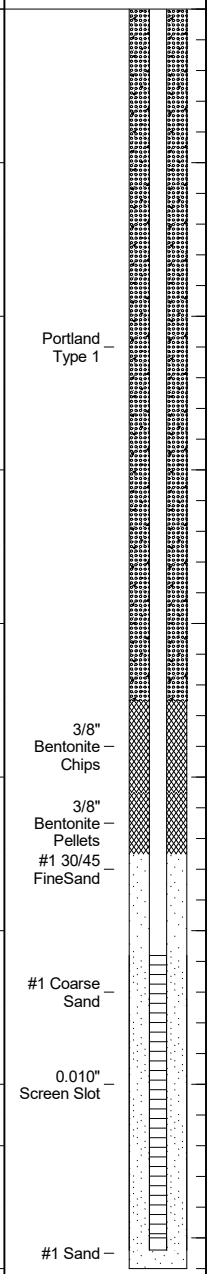
DRILL RIG: Mini-Sonic Track Mounted Rig
DATE STARTED: 7/25/16
DATE COMPLETED: 7/26/16

NORTHING: 1,162,971.70
EASTING: 2,557,868.10
GS ELEVATION: 425.5
TOC ELEVATION: 428.24 ft

DEPTH W.L.: 27.2
ELEVATION W.L.: 401.22
DATE W.L.: 7/25/16
TIME W.L.: na

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	425	0.00 - 5.00 SILT, NP, reddish brown, white mottling, highly weathered, massive, friable, relic foliation structure micaceous, SAPROLITE; cohesive, dry, very stiff	ML	420.5	1		5.00 / 5.00
5	420	5.00 - 19.00 SILT, low plasticity; reddish brown, white mottling, massive, semi-friable, micaceous, SAPROLITE; cohesive, moist, soft		5.00	2		5.00 / 5.00
10	415				3		5.00 / 5.00
15	410				4		5.00 / 5.00
20	405	19.00 - 20.00 trace fine-coarse subangular sand, pinkish brown 20.00 - 28.00 NP, well graded; reddish brown, light brown, dark grey, white mottling , moderately weathered, massive, micaceous, SAPROLITE; cohesive, moist, very soft		406.5 19.00 405.5 20.00	5		5.00 / 5.00
25	400				6		5.00 / 5.00
30	395	28.00 - 31.40 silty SAND, fine grained sand, NP, trace coarse subangular grain sand; reddish brown, white mottling, moderately weathered, massive, micaceous, SAPROLITE; cohesive, moist, very soft	SM	397.5 28.00 394.1	7		5.00 / 5.00
35	390	31.40 - 35.00 SAND, poorly graded, very fine grained, few silt, trace subangular medium grain sand; light grey, brown, white mottling, medium weathered, massive, micaceous, SAPROLITE; non-cohesive, moist, loose 35.00 - 37.00 SAND, poorly graded, fine grained, trace silt; light grey brown, white mottling, highly weathered quartz nodules, heterogenous, micaceous, SAPROLITE; NC, moist-wet, very loose	SP	31.40 390.5 35.00 388.5	8		2.00 / 2.00
40	385	37.00 - 40.50 TRANSITIONALLY WEATHERED ROCK, biotite GNEISS, moderately weathered, banded , dark grey, coarsely crystalline, strong rock, iron oxide staining, Sand part of weathered matrix 40.50 - 41.00 BEDROCK, biotite GNEISS, slightly weathered, banded, grey to light tan, medium crystalline, highly competent rock Boring completed at 41.00 ft	TWR GNEISS	37.00 385	9		4.00 / 4.00
45	380						
50							

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0'-30.8'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 30.8'-40.8'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 27.5'-40.0'
Type: 27.5'-28.5', 30/45 fine sand; 28.5'-40.0', #1 sand

FILTER PACK SEAL
Interval: 22.5'-27.5'
Type: 22.5'-25.5', 3/8" Bentonite Chips; 25.5'-27.5', Bentonite Pellets

ANNULUS SEAL
Interval: 2.0'-22.5'
Type: Portland Cement (Type I)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Scotty Vermillon

GA INSPECTOR: Will Ethier
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS2_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-25I/BRGWC-25I

SHEET 1 of 1

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 21.00 ft
LOCATION: Milledgville, GA

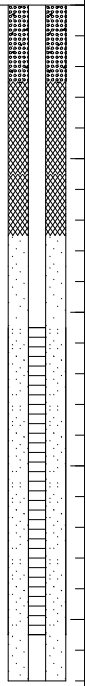
DRILL RIG: Mini-Sonic Track Mounted Rig
DATE STARTED: 7/24/16
DATE COMPLETED: 7/25/16

NORTHING: 1,160,583.70
EASTING: 2,561,315.10
GS ELEVATION: 355.0
TOC ELEVATION: 357.37 ft

DEPTH W.L.: 5.5
ELEVATION W.L.: 351.96
DATE W.L.: 7/24/16
TIME W.L.: 9:45

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	355	0.00 - 3.30 SILT, NP, trace fine-medium sand, trace roots; reddish brown, highly weathered, masssive, micaceous, regolith; cohesive, dry (perched water~2.0'-2.8'), firm	ML		351.7	1		5.00 5.00
		3.30 - 4.00 TRANSITIONALLY WEATHERED ROCK, Moderately weathered, massive, opaque white, slightly yellow, very coarsely crystalline, medium strong, biotite GNEISS, veined, quartz, feldspar, vuggy	TWR		351			
5	350		ML		4.00 350			
		4.00 - 5.00 SILT, NP, trace fine-medium sand, trace roots; reddish brown, highly weathered, masssive, micaceous, regolith; cohesive, dry, firm			5.00 348			
		5.00 - 7.00 SILT, NP, trace fine-medium sand, trace roots; reddish brown, highly weathered, masssive, micaceous, regolith; cohesive, moist, firm	MLS		7.00 345.5			
10	345	7.00 - 9.50 sandy SILT, low plasticity, subangular medium-coarse grain; reddish light brown with light brown mottling, moderately weathered, massive, micaceous, SAPROLITE; cohesive, moist, loose	SM		10.00	2		5.00 10.00
		9.50 - 10.00 silty SAND, angular medium-coarse grain, well graded, NP; medium reddish brown, slightly weathered, massive, micaceous, SAPROLITE; NC, moist, very loose			340			
15	340	10.00 - 15.00 silty SAND, well grdaded, angular fine-coarse grain, NP, trace subangular coarse gravel; medium reddish brown, medium weathered, massive, micaceous, SAPROLITE; NC, moist, loose	PWR		15.00 339			
		15.00 - 16.00 TRANSITIONALLY WEATHERED ROCK, slightly weathered, foliated, dark grey, pink, opaque off-white, fine-coarsely crystalline, highly compotent rock, weathered granitic biotite GNEISS, intensely fractured, saturated rock , discontinuities normal to core axis	GNEISS		16.00 335	3		5.00 15.00
20	335	16.00 - 20.00 Fresh, foliated, dark grey, white, medium-coarsely crystalline, strong rock, biotite GNEISS, instensely fractured	GNEISS		20.00 334			
		20.00 - 21.00 No Recovery				4		1.00 16.00
		Boring completed at 21.00 ft				5		4.00 21.00
25	330							
30	325							
35	320							
40	315							
45	310							
50	305							

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0'-10.5'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 10.5'-20.5'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 7.5'-20.5'
Type: 7.5'-8.5', 30/45 fine sand; 8.5'-20.5', #1 sand

FILTER PACK SEAL
Interval: 2.5'-7.5
Type: 2.5'-5.5', 3/8" Bentonite Chips; 5.5'-7.5', 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 2.0'-2.5'
Type: Portland Cement (Type I)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Scotty Vermillon

GA INSPECTOR: Will Ethier
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS2_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-27S/BRGWC-27I

SHEET 1 of 1

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 24.00 ft
LOCATION: Milledgville, GA

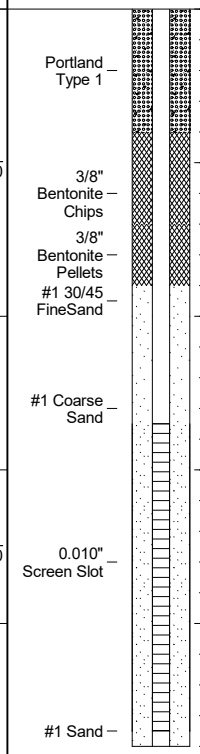
DRILL RIG: Mini-Sonic Track Mounted Rig
DATE STARTED: 7/21/16
DATE COMPLETED: 7/22/16

NORTHING: 1,159,695.30
EASTING: 2,559,712.20
GS ELEVATION: 364.0
TOC ELEVATION: 366.86 ft

DEPTH W.L.: 3.45
ELEVATION W.L.: 364.54
DATE W.L.: 7/22/16
TIME W.L.: 15:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	TYPE	REC
0		0.00 - 10.00 No Recovery; Hydrovac				1		0.00 10.00
10	354	10.00 - 15.00 SAND with CLAY, medium plasticity,. medium-coarse sand, trace fine angular gravel; moderate reddish brown (10R 4/6), moderately weathered, massive, micaceous, SAPROLITE; cohesive, wet, firm	SP-SC		10.00 349			
15		15.00 - 17.50 lean CLAY, medium plasticity, some silt, trace medium grain angular sand; medium reddish brown (10R 4/6), moderate orange pink (5YR 8/4), moderately weathered, laminated, micaceous, SAPROLITE; cohesive, wet, dense	CL		15.00 346.5	2		5.00 15.00
			ML		345.7			
20	345	17.50 - 18.30 SILT, non-plastic, coarse angular sand, fine angular gravel; moderate reddish brown (10R 4/6), moderately weathered, massive, micaceous, SAPROLITE; non-cohesive, wet, loose	CL		18.30 344			
		18.30 - 20.00 lean CLAY, medium plasticity, some silt, trace medium grain angular sand; medium reddish brown (10R 4/6), moderate orange pink (5YR 8/4), moderately weathered, laminated, micaceous, SAPROLITE; cohesive, wet, dense	SM		20.00 342			
			SW					
			SM		23.00 340			
25	340	20.00 - 22.00 silty SAND, medium-coarse angular sand, NP, trace subrounded cobbles; moderate brown (5YR 4/4), moderately weathered, massive, micaceous, SAPROLITE; NC, wet, very loose				3		5.00 20.00
		22.00 - 22.50 gravelly SAND, fine-coarse grain sand, well graded, coarse sub rounded gravel, trace silt; light brown (5YR 5/6), slightly weathered, massive, quartzitic, micaceous, SAPROLITE; NC, wet, very loose						
30	335	22.50 - 23.00 silty SAND, fine-medium grain, well graded, subrounded, trace subrounded coarse quartz gravel; light brown (5YR 6/4) mottled with pale brown (5YR 5/2), lightly weathered, relic foliation structures, micaceous, SAPROLITE; NC, moist, loose						
		23.00 - 24.00 No Recovery				4		4.00 24.00
		Boring completed at 24.00 ft						
35	330							
40	325							
45	320							
50	315							

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0'-14'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 14'-24'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 9.0'-24'
Type: 9.0'-10.0', 30/45 fine sand; 10.0'-23.5', #1 sand

FILTER PACK SEAL
Interval: 4.0'-9.0'
Type: 4.0'-7.0', 3/8" Bentonite Chips; 7.0'-9.0', Bentonite Pellets

ANNULUS SEAL
Interval: 0.0'-4.0'
Type: Portland Cement (Type I)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: N/A

Hydrovac left standing water at 3.45'

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Scotty Vermillon

GA INSPECTOR: Will Ethier
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS2_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-29I/BRGWC-29I

SHEET 1 of 1

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 21.00 ft
LOCATION: Milledgville, GA

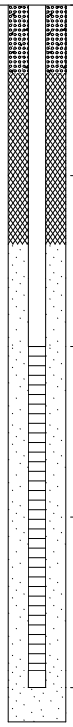
DRILL RIG: Mini-Sonic Track Mounted Rig
DATE STARTED: 7/22/16
DATE COMPLETED: 7/23/16

NORTHING: 1,160,297.60
EASTING: 2,561,050.20
GS ELEVATION: 350.6
TOC ELEVATION: 353.23 ft

DEPTH W.L.: 6.56
ELEVATION W.L.: 346.74
DATE W.L.: 7/24/2016
TIME W.L.: 06:52

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	350	0.00 - 1.00 TOPSOIL, SILTY SAND, some organic matter; dark brown; moist	SM		349.6			
		1.00 - 7.00 Sandy SILT sub-angular fine sand; brown-orange, relic foliation present, SAPROLITE; moist, loose	ML		1.00	1		5.00 / 5.00
5	345				343.6	2		5.00 / 5.00
		7.00 - 8.00 SILTY SAND, micaceous; densely foliated, SAPROLITE; Dense	SM		7.00 342.6			
		8.00 - 20.00 TRANSITIONALLY WEATHERED ROCK, highly weathered (W4), densely foliated, white-black, medium grained, weak (R2) with some strong (W4) fresh sections, BIOTITE GNIESS, with biotite, quartz and some weathered feldspars	TWR		8.00	3		2.50 / 5.00
10	340					4		1.00 / 5.00
15	335				330.6			
20	330	20.00 - 21.00 No recovery			20.00 329.6	5		0.00 / 1.00
		Boring completed at 21.00 ft						
25	325							
30	320							
35	315							
40	310							
45								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0.0'-10.0'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 10.0'-20.0'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 7.0'-21.0'
Type: 7.0'-8.0' 30/45 Sand - 8.0'-21.0' #1 Sand

FILTER PACK SEAL
Interval: 2.0'-7.0'
Type: 2.0'-5.0' 3/8" Bentonite Chips - 5.0'-7.0' 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0.0'-2.0'
Type: Concrete

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: N/A

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade
DRILLER: Ray Whitt

GA INSPECTOR: Mike Smilley, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-30I/BRGWC-30I

SHEET 1 of 1

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 20.25 ft
LOCATION: Milledgville, GA

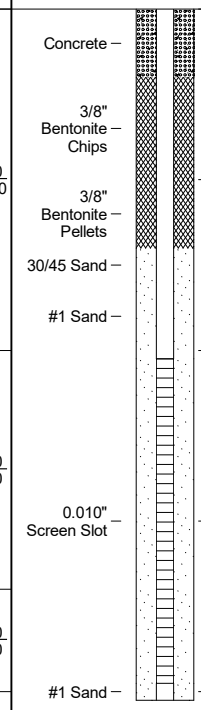
DRILL RIG: Mini-Sonic Track Mounted Rig
DATE STARTED: 7/18/16
DATE COMPLETED: 7/18/16

NORTHING: 1,161,607.60
EASTING: 2,557,691.80
GS ELEVATION: 350.0
TOC ELEVATION: 352.61 ft

DEPTH W.L.: 1.55
ELEVATION W.L.: 350.78
DATE W.L.: 7/20/2016
TIME W.L.: 08:57

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	350	0.00 - 4.70 Sandy CLAYEY SILT, low plasticity fines, fine to medium sub-angular sand, trace organics (roots); moderate reddish brown (10YR 4/6), cohesive, w<PL, soft	ML	345.3			
5	345	4.70 - 6.60 Sandy SILTY CLAY, medium plasticity fines, fine sand; grayish blue green (5BG 5/2) to light blue gray (5B 7/1) mottled with moderate yellowish brown (10YR 5/4) and white (N9), cohesive, w~PL, firm	CL	4.70 343.4	1		8.00 10.00
		6.60 - 6.80 SAND, fine to medium sub-angular sand, non-plastic fines; greenish gray (5G 6/1) to pale olive (10Y 6/2), non-cohesive, moist, loose	SP CL	342.6 7.40			
		6.80 - 7.40 Sandy SILTY CLAY, medium plasticity fines, fine sand; grayish blue green (5BG 5/2) to light blue gray (5B 7/1) mottled with moderate yellowish brown (10YR 5/4) and white (N9), cohesive, w~PL, firm	SM	339.5			
10	340	7.40 - 10.50 SILTY SAND, fine to coarse well graded sub-angular sand, low plasticity fines, trace fine sub-angular gravels; dark yellowish orange (10YR 6/6) to very pale orange (10YR 8/2), SAPROLITE; non-cohesive, moist, compact	SP SP-SM	338.9 11.10			
		10.50 - 11.10 SAND, fine to medium sub-angular sand, trace non-plastic fines, trace fine angular gravels; dusky brown (5YR 2/2) to moderate brown (5YR 4/4), highly weathered (W4), quartz, biotite, and weathered micaceous grains, SAPROLITE; non-cohesive, moist, dense		336.1	2		7.00 7.00
15	335	11.10 - 13.90 SAND, fine angular sand, some non-plastic fines, trace fine angular gravels; dark yellowish orange (10YR 6/6) and grayish orange (10YR 7/4), highly weathered (W$4, weathered micaceous grains, quartz, and biotite, SAPROLITE; non-cohesive, wet, very dense	SW TWR GNEISS	13.90 334.6 15.80 333.2 16.80			
		13.90 - 15.40 SAND, fine to coarse angular sand, trace non-plastic fines, some fine to coarse soft angular gravel (core stones); moderate yellowish brown (10YR 5/4) mottled white (N9) and pale olive (10YR 6/2), moderately to highly weathered (W3 to W4), weathered micaceous grains, quartz, plagioclase, biotite, SAPROLITE; non-cohesive, wet, very dense		330 20.00	3		2.80 3.00
20	330	15.40 - 15.80 TRANSITIONALLY WEATHERED ROCK, fine to coarse angular sand, fine to coarse angular gravels (core stones), trace non-plastic fines; light gray (N7), slightly to moderately weathered (W2-W3), quartz, biotite and weathered micaceous grains, non-cohesive, wet, very dense					
25	325	15.80 - 16.80 Slightly weathered (W2), medium bedded, light olive gray (5Y 5/2) to medium light gray (N7), fine grained, slightly porous, weak rock (R2), GNIESS, some weathering staining, quartz, biotite and weathered micaceous grains.					
30	320	16.80 - 20.00 Slightly weathered (W2), medium to thinly wavy foliated, medium to coarse grained, white (N1) and grayish black (N2) with some dark yellowish orange (10YR 6/6) weathered surfaces, slightly porous (fracture surfaces), medium strong to strong (R3 to R4), BIOTITE GNIESS, with biotite, quartz, hornblende, frequent weathering surfaces 17.00: (17.0) fresh (W1), occasional weathered surfaces					
35	315	Boring completed at 20.25 ft					
40	310						
45	305						

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0'-10'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 10'-20'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 7.0'-20.25'
Type: 7.0'-8.0' 30/45 Sand - 8.0'-20.25' #1 Sand

FILTER PACK SEAL
Interval: 2.0'-7.0'
Type: 2.0'-5.0' 3/8" Bentonite Chips - 5.0'-7.0' 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-2'
Type: Concrete

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: N/A

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Trenton Herod

GA INSPECTOR: Jeffrey Ingram
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-32S/BRGWC-32S

SHEET 1 of 2

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 45.00 ft
LOCATION: Milledgville, GA

DRILL RIG: TS-150 Track Mounted Rig
DATE STARTED: 7/19/16
DATE COMPLETED: 7/20/16

NORTHING: 1,160,677.70
EASTING: 2,558,497.90
GS ELEVATION: 403.6
TOC ELEVATION: 406.39 ft

DEPTH W.L.: 30.05
ELEVATION W.L.: 322.28
DATE W.L.: 7/22/2016
TIME W.L.: 08:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0		0.00 - 0.70 TOPSOIL, SILTY SAND, fine poorly graded sand, non-plastic fines, some organics (roots); dark yellowish brown (10YR 4/2); non-cohesive, dry, loose	SM		402.9 0.70					
	400	0.70 - 8.30 non-plastic to low plasticity fines, trace organics (roots); moderate reddish brown (10R 4/6), completely weathered (W5), some weathered micaceous grains, SAPROLITE; non-cohesive, moist, loose				1		8.80 10.00		
5					395.3					
	395	8.30 - 17.90 fine to coarse well graded angular sand, non-plastic to low plasticity fines, some fine to coarse soft angular gravels (core stones); pale yellowish brown (10YR 6/2), light brown (5YR 5/6) and black (N1), highly to completely weathered (W4 to W5), some relic foliations in core stones, weathered micaceous grains, quartz, biotite, SAPROLITE; non-cohesive, moist, compact			8.30					
10										
	390					2		7.90 10.00	Portland Cement (Type II)	
15					385.7					
	385	17.90 - 19.10 fine to coarse well graded angular sand, non-plastic to low plasticity fines, some fine to coarse soft angular gravels (core stones); layers of dark yellowish orange (10YR 6/6), pale yellowish brown (10YR 6/2), pale reddish brown (10R 5/4) mottled black (N1) and white (N9), highly weathered (W4), some relic foliaitions in core stones, weathered micaceous grains, biotite, quartz, SAPROLITE; non-cohesive, moist, compact			17.90 384.5 19.10					
20		19.10 - 28.50 (SP-SM) SAND, fine to coarse sub-angular sand, non-plastic to low plasticity fines, some soft angular gravels (core stones); pale yellowish brown (10YR 6/2), white (N9), and black (N1), highly weathered (W4), some relic foliaitions in core stones, weathered micausous grains, biotite, quartz, SAPROLITE; non-cohesive, moist, Dense 25.00: (25.0) some white (N9) fresh quartz pockets	SP-SM			3		10.00 10.00		
25					375.1					
	375	28.50 - 30.00 SILTY SAND, fine to medium sub-angular poorly graded sand, non-plastic to low plasticity fines; light brown (5YR 5/6) black (N1), and pale yellowish brown (10YR 6/2), highly weathered (W4), some relic foliations, biotite, quartz, weathered micaceous grains, SAPROLITE; non-cohesive, moist, dense	SM		28.50 373.6				3/8" Bentonite Chips	
30			SC		30.00 371.6				3/8" Bentonite Pellets	
	370	30.00 - 32.00 CLAYEY SAND, fine sand, medium plasticity fines; pale yellowish brown (10YR 6/2), to light olive gray (5Y 5/2) mottled black (N1) and white (N9), some relict foliations, weathered micaceous grains, biotite, quartz, SAPROLITE; cohesive, w~PL, hard			32.00				30/45 Sand #1 Sand	
35		32.00 - 38.70 SAND, fine sand, non-plastic fines; light brown (5YR 5/6), black (N1) and pale yellowish brown (10YR 6/2), highly weathered (W4), weathered micaceous grains, SAPROLITE; non-cohesive, wet, loose	SP-SM			4		10.00 10.00		
	365				364.9					
		38.70 - 40.00 SAND, fine to coarse sub-angular sand, trace non-plastic fines; pale yellowish brown (10YR 6/2) mottled white (N9) and Black (N1), moderately weathered (W3), some foliation layers, SAPROLITE; non-cohesive, wet, dense	SW		38.70 363.6				0.010" Screen Slot	
40			ML		40.00					
		40.00 - 42.50 SANDY SILT, fine sand, low plasticity fines; light olive gray (5Y 5/2), completely weathered rock (W6), weathered micaceous grains, biotite, quartz, SAPROLITE; cohesive, w>PL, firm			361.1	5		5.00 5.15		
	360	42.50 - 45.00 SAND, fine to medium angular sand, trace non-plastic fines; pale yellowish brown (10YR 6/2), some relict foliations, weathered	SP		42.50 358.6					
45		Log continued on next page								

WELL CASING
Interval: 0.0'-35'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 35'-45'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 32.0'-45.15
Type: 32.0'-33.0' 30/45 Sand - 33.0'-45.15' #1 Sand

FILTER PACK SEAL
Interval: 27.0'-32.0'
Type: 27.0'-30.0' 3/8" Bentonite Chips - 30.0'-32.0' 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 3'-27'
Type: Portland Cement (Type II)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: N/A

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Trenton Herod

GA INSPECTOR: Jeffrey Ingram
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-32S/BRGWC-32S

SHEET 2 of 2

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 45.00 ft
LOCATION: Milledgville, GA

DRILL RIG: TS-150 Track Mounted Rig
DATE STARTED: 7/19/16
DATE COMPLETED: 7/20/16

NORTHING: 1,160,677.70
EASTING: 2,558,497.90
GS ELEVATION: 403.6
TOC ELEVATION: 406.39 ft

DEPTH W.L.: 30.05
ELEVATION W.L.: 322.28
DATE W.L.: 7/22/2016
TIME W.L.: 08:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45		micaceous grains, biotite, quartz, SAPROLITE; non-cohesive, wet, dense							#1 Sand	
		Boring completed at 45.00 ft								
	355									
50										
	350									
55										
	345									
60										
	340									
65										
	335									
70										
	330									
75										
	325									
80										
	320									
85										
	315									
90										

WELL CASING
Interval: 0.0'-35'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 35'-45'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 32.0'-45.15
Type: 32.0'-33.0' 30/45 Sand - 33.0'-45.15' #1 Sand

FILTER PACK SEAL
Interval: 27.0'-32.0'
Type: 27.0'-30.0' 3/8" Bentonite Chips - 30.0'-32.0' 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 3'-27'
Type: Portland Cement (Type II)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: N/A

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Trenton Herod

GA INSPECTOR: Jeffrey Ingram
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-45/BRGWC-45

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 57.00 ft
LOCATION: Former Coal Pile

DRILL RIG: Pro Sonic 150
DATE STARTED: 2/3/18
DATE COMPLETED: 2/3/18

NORTHING: 1,162,229.80
EASTING: 2,561,075.50
GS ELEVATION: 381.6
TOC ELEVATION: 384.58 ft

DEPTH W.L.: 11.41
ELEVATION W.L.: 370.19
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	381	0.00 - 8.00 Soils removed by Hydrovac from 0-8 feet bgs.							Grout mix with stainless steel casing	**WELL CASING** Interval: 0-46.6 Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw
5	375				373.6					**WELL SCREEN** Interval: 46.6-56.6 Material: 0.010 Slotted Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: 56.6-57
10	370	8.00 - 33.00 Fill, Silty Sand, orangish brown, non-cohesive, moist.	SM		8.00					**FILTER PACK** Interval: 45-57 Type: FilterSil **FILTER PACK SEAL** Interval: 40-45 Type: 3/8" PEL-PLUG Bentonite Pellets **ANNULUS SEAL** Interval: 0-40 Type: Portland Cement/Quikrete Grout Mix
15	365								Portland Cement/Quikrete grout mix	**WELL COMPLETION** Pad: 4'x4' Protective Casing: 4"x4"x5' **DRILLING METHODS** Soil Drill: Rotosonic Rock Drill: Core
20	360									
25	355									
30	350				348.6					
35	345	33.00 - 52.00 Saprolite, Sand, reddish brown with white and black relic foliation, non cohesive, moist.	SP		33.00					
40		Log continued on next page								

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-45/BRGWC-45

SHEET 2 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 57.00 ft
LOCATION: Former Coal Pile

DRILL RIG: Pro Sonic 150
DATE STARTED: 2/3/18
DATE COMPLETED: 2/3/18

NORTHING: 1,162,229.80
EASTING: 2,561,075.50
GS ELEVATION: 381.6
TOC ELEVATION: 384.58 ft

DEPTH W.L.: 11.41
ELEVATION W.L.: 370.19
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45	340	33.00 - 52.00 Saprolite, Sand, reddish brown with white and black relic foliation, non cohesive, moist. *(Continued)*	SP						3/8" PEL-PLUG Bentonite Pellets FilterSil 0.010" Slotted Schedule 40 PVC	**WELL CASING** Interval: 0-46.6 Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw **WELL SCREEN** Interval: 46.6-56.6 Material: 0.010 Slotted Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: 56.6-57 **FILTER PACK** Interval: 45-57 Type: FilterSil **FILTER PACK SEAL** Interval: 40-45 Type: 3/8" PEL-PLUG Bentonite Pellets **ANNULUS SEAL** Interval: 0-40 Type: Portland Cement/Quikrete Grout Mix **WELL COMPLETION** Pad: 4'x4' Protective Casing: 4"x4"x5' **DRILLING METHODS** Soil Drill: Rotosonic Rock Drill: Core
50	335									
55	330				329.6					
60	325	52.00 - 57.00 BIOTITE GNEISS, moderately weathered to fresh, oxide staining, thinly bedded, black and white, phaneritic, extremely weak to strong.			52.00 324.6					
65	320	Boring completed at 57.00 ft								
70	315									
75	310									
80	305									

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-47/BRGWC-47

SHEET 1 of 3

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 97.00 ft
LOCATION: Between Pond B

DRILL RIG: Pro Sonic 150
DATE STARTED: 1/25/18
DATE COMPLETED: 1/26/18

NORTHING: 1,162,700.70
EASTING: 2,559,456.70
GS ELEVATION: 408.8
TOC ELEVATION: 411.20 ft

DEPTH W.L.: 25.93
ELEVATION W.L.: 382.87
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	408	0.00 - 0.50 Ash as sand, fine, dark gray, moist, non-cohesive.	SP		408.3 0.50				Grout Mix with stainless steel casing	**WELL CASING** Interval: 0-81.6 Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw **WELL SCREEN** Interval: 81.6-91.6 Material: 0.010" Slotted Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: 91.6-92 **FILTER PACK** Interval: 80-93 Type: FilterSil **FILTER PACK SEAL** Interval: 75-80 Type: 3/8" PEL-PLUG Bentonite Pellets **ANNULUS SEAL** Interval: 0-75 Type: Portland Cement/Quikrete grout mix **WELL COMPLETION** Pad: 4'x4' Protective Casing: 4"x4"x5' **DRILLING METHODS** Soil Drill: Rotosonic Rock Drill: Core
5	405	0.50 - 15.00 Residuum, silty Sand, sands f-m, reddish brown, micaceous, moist, non-cohesive.	SM							
10	400									
15	395	15.00 - 75.00 Saprolite, silty Sand, reddish brown to grayish brown with intermediate white mottling, relic structure, micaceous, dry to moist, non			393.8 15.00					
20	390									
25	385		SM							
30	380								Portland Cement/Quikrete grout mix	
35	375									
40	370									

Log continued on next page

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-47/BRGWC-47

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 97.00 ft
LOCATION: Between Pond B

DRILL RIG: Pro Sonic 150
DATE STARTED: 1/25/18
DATE COMPLETED: 1/26/18

NORTHING: 1,162,700.70
EASTING: 2,559,456.70
GS ELEVATION: 408.8
TOC ELEVATION: 411.20 ft

DEPTH W.L.: 25.93
ELEVATION W.L.: 382.87
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45	365	15.00 - 75.00 Saprolite, silty Sand, reddish brown to grayish brown with intermediate white mottling, relic structure, micaceous, dry to moist, non *(Continued)*	SM							
50	360									
55	355									
60	350									
65	345									
70	340									
75	335				333.8 / 75.00					
80	330	75.00 - 92.00 Partially Weathered Rock, shows in sample as Sand with trace gravel and silt, grayish brown with white mottling, micaceous, relic foliation where preserved, dry, non-cohesive.	SP						3/8" PEL-PLUG Bentonite Pellets FilterSil	**WELL CASING** Interval: 0-81.6 Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw **WELL SCREEN** Interval: 81.6-91.6 Material: 0.010" Slotted Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: 91.6-92 **FILTER PACK** Interval: 80-93 Type: FilterSil **FILTER PACK SEAL** Interval: 75-80 Type: 3/8" PEL-PLUG Bentonite Pellets **ANNULUS SEAL** Interval: 0-75 Type: Portland Cement/Quikrete grout mix **WELL COMPLETION** Pad: 4'x4' Protective Casing: 4"x4"x5' **DRILLING METHODS** Soil Drill: Rotosonic Rock Drill: Core

Log continued on next page

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-47/BRGWC-47

SHEET 3 of 3

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 97.00 ft
LOCATION: Between Pond B

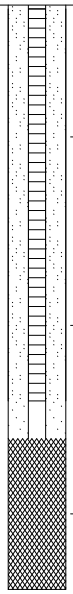
DRILL RIG: Pro Sonic 150
DATE STARTED: 1/25/18
DATE COMPLETED: 1/26/18

NORTHING: 1,162,700.70
EASTING: 2,559,456.70
GS ELEVATION: 408.8
TOC ELEVATION: 411.20 ft

DEPTH W.L.: 25.93
ELEVATION W.L.: 382.87
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
85	325	75.00 - 92.00 Partially Weathered Rock, shows in sample as Sand with trace gravel and silt, grayish brown with white mottling, micaceous, relic foliation where preserved, dry, non-cohesive. *(Continued)*	SP					
90	320				316.8 / 92.00			
95	315	92.00 - 97.00 BIOTITE GNEISS, sample recovered as rock flour, cobbles, and gravel. Slightly weathered to fresh, white and black, thinly bedded, phaneritic, strong.	GP		311.8			
100	310	Boring completed at 97.00 ft						
105	305							
110	300							
115	295							
120	290							

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-81.6
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Screw

WELL SCREEN
Interval: 81.6-91.6
Material: 0.010" Slotted Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: 91.6-92

FILTER PACK
Interval: 80-93
Type: FilterSil

FILTER PACK SEAL
Interval: 75-80
Type: 3/8" PEL-PLUG Bentonite Pellets

ANNULUS SEAL
Interval: 0-75
Type: Portland Cement/Quikrete grout mix

WELL COMPLETION
Pad: 4'x4'
Protective Casing: 4"x4"x5'

DRILLING METHODS
Soil Drill: Rotosonic
Rock Drill: Core

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-50/BRGWC-50

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 67.00 ft
LOCATION: South boundary of site

DRILL RIG: Pro Sonic 150
DATE STARTED: 1/31/18
DATE COMPLETED: 1/31/18

NORTHING: 1,161,593.30
EASTING: 2,562,372.90
GS ELEVATION: 378.8
TOC ELEVATION: 381.35 ft

DEPTH W.L.: 37.68
ELEVATION W.L.: 341.12
DATE W.L.: 2/14/19
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	375	0.00 - 7.00 Soil removed by Hydrovac from 0-7 ft bgs, but logged by sight. silty Sand, reddish brown, micaceous, moist, non-cohesive.	SM		371.8 7.00				Grout mix and stainless steel casing	**WELL CASING** Interval: 0-54.6 Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw **WELL SCREEN** Interval: 54.6-64.6 Material: 0.010" Slotted Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: 64.6-65 **FILTER PACK** Interval: 53-66 Type: FilterSil **FILTER PACK SEAL** Interval: 48-53 Type: 3/8" PEL-PLUG Bentonite Pellets **ANNULUS SEAL** Interval: 0-48 Type: Portland Cement/Quikrete grout mix **WELL COMPLETION** Pad: 4'x4' Protective Casing: 4"x4"x5' **DRILLING METHODS** Soil Drill: Rotosonic Rock Drill: Core
5										
10	370	7.00 - 47.00 Residuum, silty Sand, reddish brown, micaceous, non-cohesive, moist.								
15	365									
20	360									
25	355		SM							
30	350								Portland cement/Quikrete grout mix	
35	345									
40	340									

Log continued on next page

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-50/BRGWC-50

SHEET 2 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 67.00 ft
LOCATION: South boundary of site

DRILL RIG: Pro Sonic 150
DATE STARTED: 1/31/18
DATE COMPLETED: 1/31/18

NORTHING: 1,161,593.30
EASTING: 2,562,372.90
GS ELEVATION: 378.8
TOC ELEVATION: 381.35 ft

DEPTH W.L.: 37.68
ELEVATION W.L.: 341.12
DATE W.L.: 2/14/19
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45	335	7.00 - 47.00 Residuum, silty Sand, reddish brown, micaceous, non-cohesive, moist. *(Continued)*	SM							
					331.8 / 47.00					
50	330	47.00 - 60.00 Residuum, Sand with trace gravel, some relic structure, light reddish brown, moist, non-cohesive.	SP						3/8" PEL-PLUG Bentonite Pellets	
55	325								FilterSil	
60	320				318.8 / 60.00				0.010" Slotted Schedule 40 PVC	
65	315	60.00 - 67.00 BIOTITE GNEISS, slightly weathered to fresh, subhorizontal foliation, white/black, phaneritic, moderately strong to strong.								
					311.8				3/8" PEL-PLUG Bentonite Pellets	
		Boring completed at 67.00 ft								
70	310									
75	305									
80	300									

WELL CASING
Interval: 0-54.6
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Screw

WELL SCREEN
Interval: 54.6-64.6
Material: 0.010" Slotted Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: 64.6-65

FILTER PACK
Interval: 53-66
Type: FilterSil

FILTER PACK SEAL
Interval: 48-53
Type: 3/8" PEL-PLUG Bentonite Pellets

ANNULUS SEAL
Interval: 0-48
Type: Portland Cement/Quikrete grout mix

WELL COMPLETION
Pad: 4'x4'
Protective Casing: 4"x4"x5'

DRILLING METHODS
Soil Drill: Rotosonic
Rock Drill: Core

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-52I/BRGWC-52I

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 75.00 ft
LOCATION: SE of Pond B

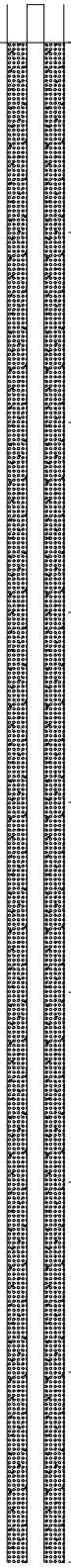
DRILL RIG: 8140LC
DATE STARTED: 8/6/18
DATE COMPLETED: 8/6/18

NORTHING: 1,161,275.00
EASTING: 2,562,145.30
GS ELEVATION: 381.2
TOC ELEVATION: 383.87 ft

DEPTH W.L.: 35.99
ELEVATION W.L.: 345.21
DATE W.L.: 8/9/2018
TIME W.L.: 11:45:00

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	380	0.00 - 8.00 Soil was hydrovacuum to 8 feet			373.2			
		8.00 - 10.00 Loss of material			8.00 371.2			
10	370	10.00 - 18.00 sandy SILT w/ trace gravel, fine to coarse, weathered, micaceous, fill, moist to dry, loose to compact, non-cohesive	MLS		10.00	S - 1	ROTO SONIC	4.00 / 10.00
15	365				363.2			
		18.00 - 20.00 sandy SILT, fine to coarse, weathered, dry, loose, non-cohesive, trace gravel at bottom	MLS		18.00 361.2			
20	360	20.00 - 26.00 sandy SILT with trace gravel, dark brown, micaceous, sand/gravel fine to coarse, loose to compact	MLS		20.00	S - 2	ROTO SONIC	7.00 / 10.00
25	355				355.2			
		26.00 - 30.00 sandy SILT with trace gravel, grey to brown, less micaceous, sand/gravel fine to coarse, moist, compact	MLS		26.00 351.2			
30	350	30.00 - 32.50 sandy SILT with trace gravel, red, sand/gravel fine to coarse, moist, compact, non-cohesive,high plasticity	MLS		30.00 348.7			
		32.50 - 37.00 CLAY with some sand, RED, cohesive, w>PL, stiff to very stiff, sand fine to coarse, high plasticity	CH		32.50	S - 3	ROTO SONIC	10.00 / 10.00
35	345				344.2			
		37.00 - 40.00 sandy SILT, red, w>PL, soft to firm,sand fine to coarse, cohesive, high plasticity	MLS		37.00 341.2			
40		Log continued on next page						

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-73.9'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Flush/Screen

WELL SCREEN
Interval: 63.9-73.9'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2
Slot Size: 0.010
End Cap: 73.9

FILTER PACK
Interval: 59.7-73.9
Type: FilterSil

FILTER PACK SEAL
Interval: 50.4-59.7'
Type: 3/8" PEL-PLUG

ANNULUS SEAL
Interval: 0.50.4'
Type: Portland Cement and Quick Gel Bentonite Mix

WELL COMPLETION
Pad: 4' x 4'
Protective Casing: 4" x 4" x 5'

DRILLING METHODS
Soil Drill: Geoprobe
Rock Drill: None

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Environmental, LLC
DRILLER: M.Rodriguez

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel Kirkman, PG
DATE: 9/6/18

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-52I/BRGWC-52I

SHEET 2 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 75.00 ft
LOCATION: SE of Pond B

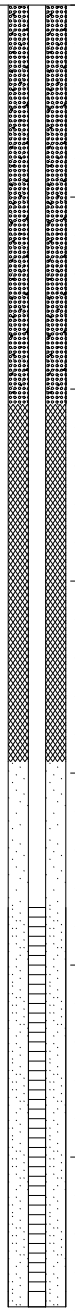
DRILL RIG: 8140LC
DATE STARTED: 8/6/18
DATE COMPLETED: 8/6/18

NORTHING: 1,161,275.00
EASTING: 2,562,145.30
GS ELEVATION: 381.2
TOC ELEVATION: 383.87 ft

DEPTH W.L.: 35.99
ELEVATION W.L.: 345.21
DATE W.L.: 8/9/2018
TIME W.L.: 11:45:00

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
40		SOIL PROFILE				SAMPLES		
	340	40.00 - 45.00 silty SAND with trace gravel and clay, light grey to brown , sand/gravel fine to coarse, non-cohesive, compact to dense, wet	GM		40.00 336.2	S - 4	ROTO SONIC	10.00 10.00
45		45.00 - 47.50 Sandy Clay, red, cohesive, very stiff w> PL, sand, fine, high plasticity	SC		45.00 333.7			
	335	47.50 - 50.00 Sandy Clay with trace gravel, red, fine to coarse, cohesive, very firm to stiff, w > PL to w ~ PL, high plasticity	SC		47.50 331.2			
50		50.00 - 60.00 BIOTITE GNEISS, fresh to weathered, medium to coarse, banding, black/white, weak to strong	BR		50.00	S - 5	ROTO SONIC	3.00 3.00
	330					S - 6	ROTO SONIC	2.30 7.00
55	325							
60		60.00 - 70.00 BIOTITE GNEISS, fresh, banded coarse and fine grain, black/white, very strong			321.2 60.00	S - 7	ROTO SONIC	6.00 10.00
	320							
65	315		BR					
70		70.00 - 75.00 BIOTITE GNEISS, fresh, banded coarse and fine grain, black/white, very strong			311.2 70.00	S - 8	ROTO SONIC	0.00 5.00
	310		BR					
75		Boring completed at 75.00 ft			306.2			
	305							
80								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-73.9'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Flush/Screen

WELL SCREEN
Interval: 63.9-73.9'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2
Slot Size: 0.010
End Cap: 73.9

FILTER PACK
Interval: 59.7-73.9
Type: FilterSil

FILTER PACK SEAL
Interval: 50.4-59.7'
Type: 3/8" PEL-PLUG

ANNULUS SEAL
Interval: 0.50.4'
Type: Portland Cement and Quick Gel Bentonite Mix

WELL COMPLETION
Pad: 4' x 4'
Protective Casing: 4" x 4" x 5'

DRILLING METHODS
Soil Drill: Geoprobe
Rock Drill: None

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Environmental, LLC
DRILLER: M.Rodriguez

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel Kirkman, PG
DATE: 9/6/18

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

APPENDIX A

Piezometer Well

Logs

Location resurveyed June - July 2020

BORING PZ-01 D

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/20/2014 **COMPLETED** 4/4/2014 **GROUND ELEVATION** 462.9 ft **COORDINATES** N 1171999 E 2551598.1

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 160 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 49.5 ft. after 100 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 463.41)
		Lean Clay (CL) residuum dry, silty CLAY, red	462.9		
			459.9		
		Silt (ML) residuum dry, clayey SILT, yellow-red with yellow mottles, micas			
5		saprolite dry, clayey SILT, light red, then pale brown with yellow-red mottles, some sand, micas			
10		saprolite damp, clayey SILT, pale brown with black and white mottles, then pale red with black and white mottles			
15		saprolite damp, clayey SILT, brown with black mottles, micas, sand			
20			442.9		
		Lean Clay (CL) saprolite damp, silty CLAY, brown and gray-brown with black mottles, micas			
25			437.9		
		Silt (ML) saprolite damp, clayey SILT, pale red-brown with white and black mottles, quartz gravel seams, micas			
			433.9		
30		**Lean Clay (CL)** saprolite dry, CLAY, yellow			
		saprolite dry, CLAY, yellow and pale yellow			
			429.9		
		Silt (ML) saprolite dry, clayey SILT, light gray with red and black mottles, micas			
35		saprolite damp, clayey SILT, gray-brown, then light brown with red mottles, sand, micas			
40		saprolite damp, clayey SILT, brown with white and black mottles			
			420.9		
		Lean Clay (CL) saprolite damp, silty CLAY, light brown with white mottles, quartz gravel seams			
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING PZ-01 D

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			462.9		Top of casing Elev. = 463.41 (CONTINUED)
		Lean Clay (CL) saprolite damp, silty CLAY, light brown with white mottles, quartz gravel seams *(Con't)*			
		saprolite damp, silty CLAY, light brown with white mottles, quartz gravel seams			
50		▼	412.9		
55		casing advance - no samples 50-65.5 ft., unconsolidated material			
60					
65			397.4		
70		fine grain, hard, not weathered, massive, numerous fractures, dark gray and white, biotite, feldspar, quartz			
75		fine to coarse grain, hard, not weathered, massive, numerous fractures, dark gray and white, biotite, feldspar, quartz			
80		fine to coarse grain, hard, not weathered, massive, numerous fractures, dark gray and white, biotite, feldspar, quartz			
85		fine to coarse grain, hard to soft, not to highly weathered, flow banded, numerous fractures, dark gray, white bands, biotite, feldspar, quartz, fresh			
90		fine to coarse grain, hard, not weathered, flow banded, numerous fractures, dark gray, white bands, biotite, feldspar, quartz, fresh			
95		fine grain, hard, not weathered, massive, few fractures, dark gray, white bands, biotite, feldspar phenocrysts, quartz, micro-folds, fresh			
		fine grain, hard, not weathered, massive, few fractures, dark gray, white bands, biotite, feldspar phenocrysts, quartz, few micro-folds, fresh			

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING PZ-01 D

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			462.9		Top of casing Elev. = 463.41
100		*(Con't)*			(CONTINUED)
		fine grain, hard, not weathered, flow banded, few fractures, dark gray, white banding, biotite, feldspar phenocrysts, quartz, micro-folds, fresh			
105		fine grain, hard, not weathered, massive, few fractures, dark gray, white bands, biotite, feldspar phenocrysts, quartz, dark gray, white bands, micro-folds, fresh			
110		fine grain, hard, not weathered, massive, few fractures, dark gray and white, biotite, feldspar phenocrysts, quartz, micro-folds, fresh			
115		coarse grain, hard, not weathered, massive, numerous fractures, dark gray, dark green, biotite (coarse), quartz			
120		coarse grain, hard, not weathered, flow banded, few fractures, dark gray, white banding, biotite, feldspar phenocrysts, quartz, micro-folds, fresh			
125		fine grain, hard, not weathered, massive, few fractures, dark gray, biotite, quartz			
130		fine to coarse grain, hard, not weathered, massive, few fractures, dark gray and white, biotite, quartz, feldspar phenocrysts			
135		fine to coarse grain, hard, not weathered, massive, numerous fractures, dark gray and white, biotite, quartz, feldspar phenocrysts			
140		fine to coarse grain, hard, not weathered, massive, numerous fractures, dark gray and white, biotite, quartz, feldspar phenocrysts			
145		fine grain, hard, not weathered, massive, few fractures, dark gray, biotite, quartz			
150		fine grain, hard, not weathered, massive, few fractures, dark gray, white bands, biotite, feldspar, quartz, fresh			

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING PZ-01 D
Page 4 of 4

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			462.9		Top of casing Elev. = 463.41 (CONTINUED)
155		*(Con't)*			
		fine grain, hard, not weathered, massive, few fractures, dark gray, white bands, biotite, feldspar, quartz, fresh			
160			302.9		

Bottom of borehole at 160.0 feet.

Location resurveyed June - July 2020

BORING PZ-01 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/18/2014 **COMPLETED** 3/19/2014 **GROUND ELEVATION** 461.9 ft **COORDINATES** N 1171995.8 E 2551577.8

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 79.6 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 46.3 ft. after 100 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			461.9		Top of casing Elev. = 464.71
5		residuum dry, very stiff, silty CLAY, red with yellow-red mottles, micas			
10		residuum dry, stiff, silty CLAY, red, dark red and red-brown, yellow and black mottles, micas	448.9		
15		saprolite dry, stiff, SILT, red-yellow with white mottles			
20		saprolite dry, very stiff, clayey SILT, gray-brown, micas			
25		saprolite dry, very stiff, clayey SILT, gray-brown, micas			
30		saprolite dry, very stiff, clayey SILT, gray-brown with black mottles, micas			
35		saprolite dry, very stiff, clayey SILT, gray-brown with black mottles, micas			
40		saprolite dry, very stiff, clayey SILT, gray-brown with white and black mottles, micas			
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

Location resurveyed June - July 2020

BORING PZ-01 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
			461.9
		saprolite dry, very hard, clayey SILT, gray-brown with white and black mottles, micas	
50			
		saprolite dry, very hard, clayey SILT, gray-brown with dark gray mottles, sand, micas	409.9
55		saprolite dry, very dense, SAND, gray and light gray, fine grained, gravel (pulverized rock fragments)	
60		saprolite dry, very dense, SAND, gray and light gray, fine grained, gravel (pulverized rock fragments)	
65		No recovery	395.9
		Biotite GNEISS fine to coarse grain, hard, not weathered, massive, banded, numerous fractures, biotite, feldspar, quartz, gray	
70		fine to coarse grain, hard, not weathered, massive, banded, few fractures, biotite, feldspar, quartz, dark gray and white	
75		fine to coarse grain, hard, not weathered, massive, banded, numerous fractures, biotite, feldspar, quartz, dark gray and white	
			382.3

Bottom of borehole at 79.6 feet.

Natural Gamma

75 150 225

WELL DATA

Top of casing Elev. = 464.71

(CONTINUED)

Annular Seal

Filter Pack

Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-01 S

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/19/2014 **COMPLETED** 3/20/2014 **GROUND ELEVATION** 462.4 ft **COORDINATES** N 1171996.4 E 2551588

CONTRACTOR SCS Field Services **METHOD** Casing Advance **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 65 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 43.4 ft. after 96 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 465.07)
			462.4		
5		See PZ-01 I and PZ-01 D for material descriptions			
10					
15					
20					
25					
30					
35					Annular Seal
40					Filter Pack
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

Location resurveyed June - July 2020

SOUTHERN COMPANY

BORING LOG

BORING PZ-01 S

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			462.4		Top of casing Elev. = 465.07 (CONTINUED)
50					Filter Pack
55					
60					
65		Bottom of borehole at 65.0 feet.			Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-03 D

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/11/2014 **COMPLETED** 3/27/2014 **GROUND ELEVATION** 486.7 ft **COORDINATES** N 1165474.4 E 2550275.1

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; HQ Rock Core; HQ Reaming **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 130 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 49.8 ft. after 288 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			486.7		Top of casing Elev. = 487.50
10		**Silty Clay (CL-ML)** residuum dry, CLAY, red, then clayey SILT red with red-yellow and black mottles, micas			
			472.2		
15		**Silty Sand (SM)** saprolite silty SAND, light red with white and black mottles, micas			
		saprolite damp, silty SAND, white with black mottles, micas	468.7		
		Lean Clay (CL) silty CLAY, red, yellow-red, dark red, micas	467.7		
20		**Silty Sand (SM)** silty SAND, light red and white	466.7		
		Silt (ML) saprolite damp, clayey SILT, white and red, yellow-red, pink, black, micas, quartz sand and gravel, weathered amphibolite			
25		saprolite damp, clayey SILT, dark gray-brown, red-yellow, black and weak red, micas			
30		saprolite damp, clayey SILT, red-yellow, black and red, micas			
			453.7		
35		**Silty Sand (SM)** saprolite dry, silty SAND, gray-brown, white, some gravel,			
			449.7		
		Partially Weathered Rock (PWR) saprolite dry, weathered GNEISS, black-white banding	448.2		
40					
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING PZ-03 D

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
			486.7
50		**Horneblende/biotite GNEISS** fine to medium grain, hard, not weathered, flow banded, few fractures, gray-brown, black-white banding, feldspar, quartz, horneblende, biotite, fresh	
		fine to medium grain, hard, not weathered, flow banded, few fractures, gray-brown, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh	
55			
		fine to medium grain, hard, not weathered, flow banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh	
60			
		fine to medium grain, hard, not weathered, flow banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh	
65			
		fine to medium grain, hard, not weathered, flow banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh	
70			
		fine to coarse grain, hard, not weathered, flow banded, banded, few fractures, gray-brown, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh	
75			
		fine to coarse grain, hard, not weathered, massive, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh	
80			
		fine to coarse grain, hard, not weathered, massive, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh, highly fractured, 80-80.5	
85			
		fine to coarse grain, hard, not weathered, massive, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh	
90			
		fine to coarse grain, hard, not weathered, massive, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh	
95			
		fine to coarse grain, hard, not weathered, flow banded, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh	

Natural Gamma
75 150 225

WELL DATA
Top of casing Elev. = 487.50
(CONTINUED)

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING PZ-03 D

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			486.7		Top of casing Elev. = 487.50 (CONTINUED)
100		**Horneblende/biotite GNEISS** fine to medium grain, hard, not weathered, flow banded, few fractures, gray-brown, black-white banding, feldspar, quartz, horneblende, biotite, fresh*(Con't)*			
		fine to coarse grain, hard, not weathered, flow banded, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh, coarse schistose biotite			
105					
		fine to coarse grain, hard, not weathered, flow banded, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh, coarse schistose biotite			
110					
		fine to coarse grain, hard, not weathered, massive, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh			
115					
		coarse grain, hard, not weathered, flow banded, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh, pink augen-shaped feldspar			
120					
		fine to coarse grain, hard, not weathered, flow banded, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh			
125					
		medium to coarse grain, hard, not weathered, flow banded, banded, few fractures, black-white banding, variable bedding thicknesses, feldspar, quartz, horneblende, biotite, fresh, pink augen-shaped feldspar			
130			356.7		

Bottom of borehole at 130.0 feet.

Location resurveyed June - July 2020

BORING PZ-03 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/11/2014 **COMPLETED** 3/11/2014 **GROUND ELEVATION** 486.5 ft **COORDINATES** N 1165494.5 E 2550273.2
CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550
DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 54.6 ft.
GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 49.1 ft. after 168 hrs.
NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 489.49)
			486.5		
5		residuum damp, hard, CLAY, red, some sand	479.5		
10		saprolite dry, very stiff, clayey SILT, yellow-red, micas			
15		saprolite dry, medium stiff, clayey SILT, yellow-red, black mottles, micas			
20		saprolite dry, stiff, clayey SILT, red-brown, black mottles, micas			
25		saprolite dry, medium stiff, clayey SILT, red-yellow and gray-brown, black mottles, micas			
30		saprolite dry, medium stiff, clayey SILT, red-yellow and gray-brown, black mottles, micas			
35		saprolite dry, medium stiff, clayey SILT, red-yellow and gray-brown, black mottles, micas, quartz gravel	449.5		
40		saprolite dry, hard, sandy SILT, gray, white mottles, quartz gravel	446.4		Annular Seal
		Biotite GNEISS medium grain, medium hard to soft, moderately weathered, fractures, gray-brown, black-white banding, biotite, quartz, feldspar phenocrysts			Filter Pack
45			441.9		

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

Location resurveyed June - July 2020

BORING PZ-03 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			486.5		Top of casing Elev. = 489.49 (CONTINUED)
		No recovery*(Con't)*			
50		**Felsic biotite GNEISS** medium grain, very soft to hard, highly to not weathered, flow banded, occassional fractures, gray with black-white banding, partially weathred to 50 FT., then fresh, feldpsar phenocrysts	436.9		
			431.9		**Screen Tip Elevation**

Bottom of borehole at 54.6 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-03 S
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/11/2014 **COMPLETED** 3/11/2014 **GROUND ELEVATION** 487.0 ft **COORDINATES** N 1165484.5 E 2550274.6

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 40 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** Dry after 100 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
0			487.0		Top of casing Elev. = 490.53
5		See PZ-03 D and PZ-03 I for material descriptions			
10					
15					
20					
25					Annular Seal
30					Filter Pack
35					
40		Bottom of borehole at 40.0 feet.			Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-04 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/6/2014 **COMPLETED** 3/6/2014 **GROUND ELEVATION** 479.9 ft **COORDINATES** N 1163246.8 E 2551282
CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550
DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 47 ft.
GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 30.6 ft. after 144 hrs.
NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
			479.9
5		residuum damp, stiff, silty CLAY red, some sand, micas	473.9
10		saprolite very damp, loose, silty SAND, red-yellow with white and black mottles, clay, coarse quartz sand, micas	467.9
15		saprolite damp, medium stiff, clayey SILT, yellow-red and red-brown with black mottles, micas	
20		saprolite very damp, stiff, sandy SILT, brown-yellow and red-brown with black mottles	456.9
25		saprolite very damp, medium dense, silty SAND, medium dense, pale brown with white mottles	452.9
30		saprolite wet, very stiff, sandy SILT, yellow-brown with white mottles, micas, clay	447.4
		---auger refusal----	
35		fine to coarse grain, hard to soft, slightly weathered, dark gray, black-white banding, feldspar, quartz, biotite, some fractures	444.9
		medium to coarse grain, medium hard to soft, moderately to highly weathered, banded, numerous fractures, dark gray with black-white banding, weathered zone 35-37 ft., feldspar phenocrysts, quartz, biotite, hornblende	442.9
40		medium to coarse grain, hard, not weathered, one fractrure, distinct black-white banding, feldspar phenocrysts, quartz, biotite, hornblende, fresh	
45			

Natural Gamma
75 150 225

WELL DATA
Top of casing Elev. = 482.98

Annular Seal

Filter Pack

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma 75 150 225	WELL DATA
			479.9		Top of casing Elev. = 482.98 (CONTINUED)
		(Con't) medium to coarse grain, hard, not weathered, distinct black-white banding, feldspar, quartz, biotite, hornblende, felspar phenocrysts, fresh	432.9		**Screen Tip Elevation**
		Bottom of borehole at 47.0 feet.			

Location resurveyed June - July 2020

BORING PZ-04 S
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/10/2014 **COMPLETED** 3/10/2014 **GROUND ELEVATION** 479.9 ft **COORDINATES** N 1163247.8 E 2551270.1

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 30 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** Dry after 100 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 482.87)
5		See PZ-04 I for material descriptions	479.9		
10					
15					Annular Seal
20					Filter Pack
25					
30					Screen Tip Elevation

Bottom of borehole at 30.0 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-07 S

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 4/1/2014 **COMPLETED** 4/1/2014 **GROUND ELEVATION** 449.0 ft **COORDINATES** N 1169419.2 E 2553055.6

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 46 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 20.5 ft. after 300 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 451.57)
			449.0		
5		residuum dry, CLAY, red, trace micas			
			441.0		
10		saprolite dry, clayey SILT, red with yellow-red mottles, micas			
15		saprolite dry, clayey SILT, red-yellow with black and white mottles, micas			
20		saprolite damp, sandy SILT, weak red with gray and white mottles, micas			
25		saprolite damp, clayey SILT, yellow-brown with red-brown and black mottles, sand			
30		saprolite damp, clayey SILT, yellow-brown with red-brown and black mottles, sand			Annular Seal Filter Pack
35		saprolite damp, SILT, gray with black mottles, micas			
40		saprolite damp, SILT, dark gray-brown, micas			
45					Elevation Tip

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING PZ-07 S

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			449.0		Top of casing Elev. = 451.57
			403.0		(CONTINUED)
		saprolite damp, SILT, gray-brown with white mottles, micas			
		Bottom of borehole at 46.0 feet.			

Location resurveyed June - July 2020

BORING PZ-08 S

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 4/1/2014 **COMPLETED** 4/1/2014 **GROUND ELEVATION** 450.5 ft **COORDINATES** N 1167801.1 E 2551188.9

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 51 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 21.5 ft. after 300 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 453.08)
			450.5		
5		residuum dry, stiff, silty CLAY, red, micas			
			442.5		
10		saprolite dry, stiff, SILT, dark red with black and white mottles, micas			
15		saprolite dry, stiff, sandy SILT, red with pale red and black mottles, micas			
20		saprolite dry, stiff, sandy SILT, red with pale red and black mottles, micas			
			428.5		
25		saprolite damp, medium stiff, sandy SILT, red and yellow-brown, white mottles, micas			
30		saprolite wet, medium stiff, clayey SILT, gray-brown with white mottles, micas			
35		saprolite wet, medium stiff, clayey SILT, brown with white and black mottles			Annular Seal
40		saprolite wet, medium stiff, clayey SILT, brown with white and black mottles			Filter Pack
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING PZ-08 S

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			450.5		Top of casing Elev. = 453.08 (CONTINUED)
50		saprolite wet, medium stiff, clayey SILT, brown with white and black mottles *(Con't)*			**Screen Tip Elevation**
		saprolite wet, stiff, clayey SILT, brown with white and black mottles	399.5		
		Bottom of borehole at 51.0 feet.			

Location resurveyed June - July 2020

BORING PZ-09 S

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/5/2014 **COMPLETED** 3/5/2014 **GROUND ELEVATION** 466.1 ft **COORDINATES** N 1162633.3 E 2553089.6

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 50.5 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 36.1 ft. after 170 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 469.28)
			466.1		
5		residuum dry, very stiff, silty CLAY, red, yellow-red mottles	459.1		
10		saprolite dry, stiff, clayey SILT, yellow-red with pink mottles, micas			
15		saprolite dry, medium stiff, SILT, pale brown, red-yellow and white mottles, micas, schistose			
20		saprolite dry, stiff, SILT, pale brown with white mottles, sand, micas			
25		saprolite dry, stiff, sandy SILT, pale gray-brown with yellow-brown mottles, micas			
30		saprolite damp, stiff, clayey SILT, stiff, pale brown with dark brown mottles, sand, micas			Annular Seal
35		saprolite damp, very stiff, sandy SILT, dark gray-brown with pale yellow and light gray-brown mottles, micas			Filter Pack
40		saprolite damp, very stiff, sandy SILT, gray-brown with red-yellow and light gray mottles, micas			
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING PZ-09 S
Page 2 of 2

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			466.1		Top of casing Elev. = 469.28 (CONTINUED)
50		saprolite damp, very stiff, clayey SILT, gray-brown with white mottles, sand, micas *(Con't)*			**Screen Tip Elevation**
		saprolite very damp, hard, clayey SILT, gray with white mottles, micas	415.6		
		Bottom of borehole at 50.5 feet.			

Location resurveyed June - July 2020

BORING PZ-10 S

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/4/2014 **COMPLETED** 3/5/2014 **GROUND ELEVATION** 431.0 ft **COORDINATES** N 1164021.5 E 2554990.5

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 41 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 21.4 ft. after 192 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 433.85)
			431.0		
5		residuum dry, medium dense, silty SAND, red-yellow with pale yellow mottles	424.0		
10		saprolite damp, stiff, sandy SILT, pale gray-brown with pale yellow and light red mottles, micas			
15		saprolite damp, stiff, sandy SILT, stiff, dark gray-brown with red mottles, micas			
20		saprolite damp, medium stiff, sandy SILT, medium stiff, yellow-red with white and gray-brown mottles, micas			
25		saprolite wet, stiff, sandy SILT, gray and white with yellow, mottles, micas			Annular Seal; Filter Pack
30		saprolite wet, stiff, SILT, dark gray and white with red-brown mottles, micas, some sand and clay			
35		saprolite damp, very stiff, sandy SILT, gray and white, clay			Screen Tip Elevation
40		saprolite damp, hard, clayey SILT, gray and white, micas, sand	390.0		

Bottom of borehole at 41.0 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-11 S
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 2/20/2014 **COMPLETED** 2/20/2014 **GROUND ELEVATION** 390.9 ft **COORDINATES** N 1162467.3 E 2557002.5

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 26 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 9.2 ft. after 250 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
		Lean Clay (CL) residuum damp, stiff, silty CLAY, red with dark gray-brown mottles, sand micas	390.9
5		saprolite damp, stiff, clayey SILT, yellow-red with black mottles, sand, micas	386.9
10		saprolite very damp, medium stiff, clayey SILT, yellow-brown with black mottles, sand, micas	
15		saprolite wet, soft, SILT, pale yellow with white mottles, sand, micas	
20		saprolite wet, medium stiff, SILT, pale yellow, light gray-brown, white and black mottles, sand, micas`	
25		saprolite wet, medium stiff, SILT, pale yellow, light gray-brown, white and black mottles, sand, micas	364.9

Bottom of borehole at 26.0 feet.

Natural Gamma
75 150 225

WELL DATA
Top of casing Elev. = 393.99

Annular Seal
Filter Pack
Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-12 D

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 4/1/2014 **COMPLETED** 4/14/2014 **GROUND ELEVATION** 431.4 ft **COORDINATES** N 1164311.9 E 2557136.4

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY T. Milam **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 143.2 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 56 ft. after 200 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
		Lean Clay (CL) dry, silty CLAY, red with pale yellow mottles	431.4		Top of casing Elev. = 434.09
5		damp, silty CLAY, red with red-yellow mottles, sand, trace micas			
10		damp, silty CLAY, red with red-yellow mottles, sand, trace micas	419.4		
15		dry, clayey SILT, red-yellow and red with white and pink mottles, some quartz gravel, micas			
		dry, clayey SILT, pale red and red with yellow-red mottles, then gray-brown and olive-yellow with white mottles, occasional quartz sand, micas			
20					
		dry, clayey SILT,yellow-brown and pale red with white and black mottles, white felsic seam with quartz sand 23-24 ft., micas			
25					
		dry, sandy SILT, dry, gray-brown, red and yellow-red with black mottles, micas, white felsic sand seam 28-29 ft.			
30					
		dry, sandy SILT, pale gray-brown with white mottles, yellow-red with black mottles, micas			
35					
		dry, sandy SILT, pale gray-brown with white mottles, yellow-red with black mottles, micas			
40					
		dry, clayey SILT, dry to damp, dark gray to black, red and pale gray-brown with white mottles, sand, micas			
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING PZ-12 D

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
		(Con't)	431.4
		very damp, sandy SILT, gray-brown and gray with white mottles, sand seams, very wet 44-45 ft.	
50			381.4
		Silty Sand (ML) wet, silty SAND, gray-brown with white mottles, mica	
55			376.4
		----sampler refusal----	
60			
			369.5
		fine to medium grain, soft to medium hard, slightly weathered, flow banded, few fractures, gray and white banding, partially weathered	
65		----auger refusal----	
		fine to coarse grain, hard, not weathered, flow banded, few fractures, dark gray and white banding, fresh	
70		medium to coarse grain, hard, flow banded, few fractures, dark gray and white banding, fresh	
75		medium to coarse grain, hard, flow banded, few fractures, dark gray and white banding, fresh	
80		medium to coarse grain, hard, flow banded, few fractures, dark gray to black with white banding, fresh	
85		medium to coarse grain, hard, flow banded, few fractures, dark gray to black with white banding, fresh	
90		medium to coarse grain, hard, flow banded, few fractures, dark gray to black with white banding, fresh	
95		medium to coarse grain, hard, flow banded, few fractures, dark gray to black with white banding, fresh	

Natural Gamma
75 150 225

WELL DATA
Top of casing Elev. = 434.09
(CONTINUED)

Annular Seal

Filter Pack

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING PZ-12 D

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			431.4		Top of casing Elev. = 434.09 (CONTINUED)
100		*(Con't)*			
		medium to coarse grain, hard to medium hard, flow banded, few fractures, dark gray to black with white banding, fresh			
105		medium to coarse grain, hard, flow banded, few fractures, dark gray to black with white banding, fresh			
110		medium to coarse grain, hard, flow banded, few fractures, dark gray to black with white banding, fresh			
115		medium to coarse grain, hard to medium hard, flow banded, few fractures, dark gray to black with white banding, micro-folds, fresh			
120		medium to coarse grain, hard to medium hard, flow banded, few fractures, dark gray to black with white banding, fresh			
125		medium to coarse grain, hard to medium hard, flow banded, few fractures, dark gray to black with white banding, feldspar phenocrysts, fresh			
130		medium to coarse grain, hard to medium hard, flow banded, one fracture, dark gray to black with white banding, fresh			
135		medium to coarse grain, hard to medium hard, flow banded, several fractures, dark gray to black with white banding, fresh			
140		medium to coarse grain, hard to medium hard, flow banded, several fractures, dark gray to black with white banding, fresh	288.2		**Screen Tip Elevation**

Bottom of borehole at 143.2 feet.

Location resurveyed June - July 2020

BORING PZ-13 S
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/18/2014 **COMPLETED** 3/19/2014 **GROUND ELEVATION** 406.5 ft **COORDINATES** N 1168011.4 E 2555276.7

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 36 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 19.9 ft. after 170 hrs.

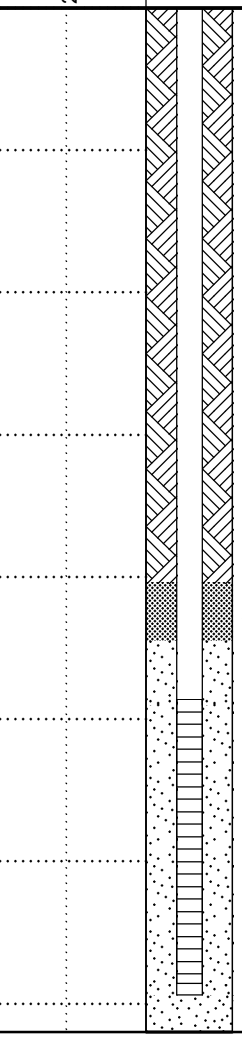
NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
			406.5
5		residuum dry, very stiff, silty CLAY, red with yellow-red mottles, sand, micas	399.5
10		saprolite dry, medium stiff, clayey SILT, medium stiff, red-yellow with pale yellow mottles, micas	
15		saprolite dry, medium stiff, clayey SILT, yellow-brown, white and brown with black mottles, micas	389.5
20		saprolite wet, soft, clayey SILT, gray-brown and red-brown with black mottles, sand, micas	
25		saprolite wet, soft, clayey SILT, gray-brown and red-brown with black mottles, sand, micas	
30		saprolite wet, stiff, sandy SILT, brown, white and pale brown, micas	
35		saprolite wet, very stiff, sandy SILT, brown, white and pale brown, micas	370.5

Bottom of borehole at 36.0 feet.

Natural Gamma
75 150 225

WELL DATA
Top of casing Elev. = 409.97



SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-14 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/19/2014 **COMPLETED** 3/20/2014 **GROUND ELEVATION** 419.9 ft **COORDINATES** N 1168398.2 E 2554365.6

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 53.8 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 11.4 ft. after 130 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 422.71)
			419.9		
5		residuum dry, stiff, silty CLAY, red, micas, sand	412.9		
10		saprolite dry, stiff, sandy SILT, yellow-red, red-brown	407.9		
15		saprolite wet, soft, sandy SILT, gray-brown, white, yellow-brown with black mottles, micas, clay			
20		saprolite wet, medium stiff, sandy SILT, white, pale brown with black mottles, micas	397.9		
25		saprolite wet, loose, silty SAND, pale brown with red-brown mottles, trace micas, fine grained			
30		saprolite wet, loose, SAND, brown with red-brown mottles, micas, clay, silt			
35		saprolite wet, loose, SAND, brown with red-brown mottles, micas, clay, silt	382.9		
40		saprolite wet, hard, sandy SILT, dark gray-brown and white with black mottles, micas	379.9		Annular Seal
		coarse grain, soft to hard, moderately to not weathered, flow banded, Several fractures, dark brown, white bands, partially weathered to 41.5 ft., then fresh, black and white banding, pink and white felspar phenocrysts			Filter Pack
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

SOUTHERN COMPANY

BORING LOG

BORING PZ-14 I
Page 2 of 2

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			419.9		Top of casing Elev. = 422.71 (CONTINUED)
		hard, not weathered, flow banded, no fractures, black and white bands, fresh, pink and white feldspar phenocrysts *(Con't)*			
50		hard, not weathered, flow banded, no fractures, black and white bands, fresh, pink and white feldspar phenocrysts			
			366.1		**Screen Tip Elevation**

Bottom of borehole at 53.8 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-14 S
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/20/2014 **COMPLETED** 3/20/2014 **GROUND ELEVATION** 420.2 ft **COORDINATES** N 1168398.7 E 2554359.2

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 38 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 12.5 ft. after 48 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 423.31)
			420.2		
5		SeePZ-14 I for material descriptions			
10					
15					
20					
25					Annular Seal
30					Filter Pack
35					Screen Tip Elevation

Bottom of borehole at 38.0 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-15 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/24/2014 **COMPLETED** 3/25/2014 **GROUND ELEVATION** 400.2 ft **COORDINATES** N 1167720.9 E 2554399.2

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 88.7 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 15 ft. after 240 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			400.2		Top of casing Elev. = 403.06
5		residuum damp, stiff, silty CLAY, red with light red mottles, micas			
			390.7		
10		**Fat Clay (CH)** residuum wet, soft, silty CLAY, red with light red mottles, micas			
			385.7		
15		**Elastic Silt (MH)** saprolite wet, soft, sandy SILT, light brown and light red, micas			
20		saprolite wet, soft, clayey SILT, brown-yellow, micas			
25		saprolite damp, medium stiff, clayey SILT, brown and red-brown with white mottles, micas			
			370.7		
30		**Poorly-graded Sand (SP)** saprolite wet, medium dense, silty SAND, light brown with white mottles, micas			
35		saprolite wet, dense, silty SAND, light brown with white mottles, micas			
40		saprolite wet, dense, silty SAND, light brown with white mottles, micas			
45					

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

(Continued Next Page)

Location resurveyed June - July 2020

BORING PZ-15 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study

LOCATION Milledgeville, GA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
		saprolite wet, very dense, silty SAND, light brown with white mottles	400.2
		Poorly-graded Sand (SP) saprolite wet, medium dense, silty SAND, light brown with white mottles, micas	
50			350.7
		Fat Clay (CH) saprolite wet, very dense, sandy CLAY, gray-brown, micas	
55			345.7
		Well-graded Sand (SP) saprolite wet, very dense, clayey SAND, dark gray-brown with black mottles, micas	
60		saprolite wet, very dense, sandy CLAY, gray-brown, micas	
65		saprolite wet, very dense, sandy SILT, dark gray with brown mottles, gravel	
70		saprolite wet, very dense, sandy SILT, dark gray with brown mottles, gravel	
75		----auger refusal----	325.9
		Biotite/amphibolite GNEISS fine to coarse grain, soft to hard, highly to not weathered, flow banded, several fractures, black and white banding, weathered zone 76-77.5 ft., then fresh, feldspar, biotite, quartz, hornblende, feldspar phenocrysts	
80		GRAVEL, pulverized rock	
		fine to coarse grain, hard, not weathered, flow banded, few fractures, black and white banding, fresh, feldspar, biotite, quartz, hornblende, feldspar phenocrysts	
85		fine to coarse grain, hard, not weathered, flow banded, few fractures, black and white banding, fresh, feldspar, biotite, quartz, hornblende, feldspar phenocrysts	
			311.5

Bottom of borehole at 88.7 feet.

Natural Gamma

75 150 225

WELL DATA

Top of casing Elev. = 403.06

(CONTINUED)

Annular Seal

Filter Pack

Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-15 S
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/25/2014 **COMPLETED** 3/27/2014 **GROUND ELEVATION** 400.1 ft **COORDINATES** N 1167720.3 E 2554394

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 39.9 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 6 ft. after 240 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 402.90)
			400.1		
5		▼ See PZ-15 I for material descriptions			
10					
15					
20					
25					Annular Seal
30					Filter Pack
35					
		Bottom of borehole at 39.9 feet.			Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-16 I
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/13/2014 **COMPLETED** 3/14/2014 **GROUND ELEVATION** 379.5 ft **COORDINATES** N 1166980.7 E 2554587.5

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Rock Core **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 39.2 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 6.6 ft. after 150 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 382.45)
			379.5		
5		residuum dry, very stiff, silty CLAY, yellow-brown and red-yellow with black mottles	372.5		
10		saprolite wet, stiff, sandy SILT, olive-brown with white and black mottles			
15		saprolite wet, stiff, clayey SILT, dark gray-brown, brown, micas			
20		saprolite wet, hard, clayey SILT, olive-brown and brown with white mottles, sand			
25		saprolite wet, hard, clayey SILT, olive-brown and brown with white mottles, sand	354.6		Annular Seal
		Amphibolite GNEISS medium to coarse grain, soft to hard, highly to not weathered, numerous fractures, dark gray-brown, weathered, then fresh dark gray			Filter Pack
30		medium to coarse grain, soft to hard, highly to not weathered, numerous fractures, alternating partially weathered rock and fresh rock			
35		medium to coarse grain, soft to hard, highly to not weathered, numerous fractures, alternating partially weathered rock and fresh rock	340.3		Screen Tip Elevation

Bottom of borehole at 39.2 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-16 S
Page 1 of 1

BORING LOG

SOUTHERN COMPANY

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/18/2014 **COMPLETED** 3/18/2014 **GROUND ELEVATION** 379.3 ft **COORDINATES** N 1166977.8 E 2554581.4

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 19.8 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 6.5 ft. after 48 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 382.52)
5		▽ See PZ-16 I for material descriptions	379.3		Annular Seal
10					Filter Pack
15					Screen Tip Elevation

Bottom of borehole at 19.8 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-17 I
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/11/2014 **COMPLETED** 3/12/2014 **GROUND ELEVATION** 362.3 ft **COORDINATES** N 1166313.8 E 2554702.5

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 43.5 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 0.1 ft. after 24 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
			362.3
		alluvium wet, very soft, silty CLAY, dark brown and blue-gray, gravel	
			354.0
		Amphibolite GNEISS fine grain, hard, slightly weathered, massive, dark gray	353.6
		residuum wet, loose, silty SAND, brown-yellow with light brown mottles	
			350.4
		Amphibolite GNEISS fine grain, hard, slightly weathered, massive, dark gray	350.0
		casing advance - no samples, unconsolidated material	347.6
		Amphibolite GNEISS fine grain, hard, slightly weathered, massive, fractures 15-18 ft., dark gray	
			343.0
		casing advance - no samples, unconsolidated material	
		saprolite wet, medium dense, silty SAND, dark brown with pale yellow mottles	
		saprolite wet, very dense, silty SAND, brown with pale yellow mottles	
			329.8
		Amphibolite GNEISS medium grain, medium hard, moderately weathered, massive, dark gray and dark gray-brown	329.4
			326.6
		Amphibolite GNEISS medium grain, medium hard, moderately weathered, massive, dark gray and dark gray-brown	326.1
		casing advance - no samples, unconsolidated material	
		refusal, no recovery	318.8

Bottom of borehole at 43.5 feet.

Natural Gamma
75 150 225

WELL DATA
Top of casing Elev. = 365.33

Annular Seal
Filter Pack
Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-18 I
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 2/24/2014 **COMPLETED** 2/26/2014 **GROUND ELEVATION** 359.6 ft **COORDINATES** N 1160766.2 E 2557745.5

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 38.8 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 14.7 ft. after 260 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 362.55)
		Lean Clay (CL) residuum dry, medium stiff, CLAY, red, micas, silt	359.6		
5		residuum dry, stiff, Clayey SILT, reds, mica	352.6		
10		residuum dry, stiff, Clayey SILT, yellow-red, micas			
15		saprolite very damp, stiff, Clayey SILT, yellow-red, light gray, pale yellow, micas			
20		saprolite wet, stiff, Clayey SILT, brown, white, micas, sand			**Annular Seal**
25		saprolite wet, hard, Clayey SILT, yellow-brown, dark gray, gray, micas, sand	333.5		
		Felsic biotite GNEISS medium to coarse grain, medium hard to hard, moderately to not weathered, flow banded, numerous fractures, dark gray, pale yellow, white banding, feldspar, quartz, biotite, pyrite			**Filter Pack**
30		medium to coarse grain, medium hard to hard, slightly to not weathered, flow banded, few fractures, dark gray, white banding, feldspar, quartz, biotite, pyrite			
35		medium to coarse grain, medium hard to hard, slightly to not weathered, flow banded, few fractures, dark gray, white banding, feldspar, quartz, biotite, pyrite	320.8		**Screen Tip Elevation**

Bottom of borehole at 38.8 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-18 S
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 2/26/2014 **COMPLETED** 2/26/2014 **GROUND ELEVATION** 359.7 ft **COORDINATES** N 1160757.3 E 2557747.4

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 25.1 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 14.8 ft. after 260 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 362.82)
			359.7		
5		See PZ-18 I for material descriptions			
10					Annular Seal
					Filter Pack
15		▽			
20					
25					Screen Tip Elevation

Bottom of borehole at 25.1 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-19 I
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 2/27/2014 **COMPLETED** 3/4/2014 **GROUND ELEVATION** 368.9 ft **COORDINATES** N 1159797.1 E 2558900

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 43.7 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 7 ft. after 50 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 371.74)
		Lean Clay (CL) residuum damp, soft, sandy CLAY, dark red-brown	368.9		
5		subsoil dry, very dense, silty SAND, pale gray-brown, gravel, weathered rock/boulder	364.9		
10		---no recovery/sampler plugged by gravel----	361.9		
15		saprolite damp, stiff, silty CLAY, dark red-brown, sand, micas	355.9		
20		saprolite very damp, dense, silty SAND, pale gray-brown with yellow mottles, clay, micas	350.9		
25		saprolite wet, very dense, silty SAND, dark yellow-brown, clay			
30		saprolite wet, very dense, silty SAND, red-yellow and pale gray-brown	338.7		**Annular Seal**
		Felsic biotite GNEISS medium to coarse grain, hard, slightly to not weathered, flow banded, few fractures, black and white banding, feldspar, quartz, biotitie, feldsapr phenocrysts			**Filter Pack**
35		medium to coarse grain, hard, slightly to not weathered, flow banded, few fractures, distinct black and white banding, feldspar, quartz, biotitie, feldsapr phenocrysts			
40		medium to coarse grain, hard, slightly to not weathered, flow banded, few fractures, distinct black and white banding, feldspar, quartz, biotitie, feldsapr phenocrysts			
			325.2		**Screen Tip Elevation**

Bottom of borehole at 43.7 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-19 S
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/4/2014 **COMPLETED** 3/4/2014 **GROUND ELEVATION** 368.4 ft **COORDINATES** N 1159805.4 E 2558894.5

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 28 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 6 ft. after 42 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA
			368.4		Top of casing Elev. = 371.42
5		▽ See PZ-19 I for material descriptions			
10					
15					Annular Seal
20					Filter Pack
25					Screen Tip Elevation

Bottom of borehole at 28.0 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-20 I

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/5/2014 **COMPLETED** 3/5/2014 **GROUND ELEVATION** 362.2 ft **COORDINATES** N 1159495.4 E 2560160.2

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 29.5 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 8.9 ft. after 115 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 365.34)
			362.2		
			358.2		
5		residuum damp, very stiff, silty CLAY, red, pale yellow mottles, sand, micas			
10		saprolite dry, medium dense, silty SAND, pale brown, fine to medium grained, gravel			
15		saprolite dry, very dense, silty SAND, brown, fine grained, gravel, some clay	346.9		Annular Seal
		Felsic biotite GNEISS fine to coarse grain, soft to hard, moderately to not weathered, flow banded, fractures, some weathered, gray with white banding, moderately weathered to 16 ft., then fresh, feldspar, quartz, biotite			Filter Pack
20		medium to coarse grain, hard, not weathered, flow banded, very few fractures, dark gray to black with white banding, fresh			
25		medium to coarse grain, hard to soft, not to highly weathered, flow banded, very few fractures, dark gray to black with white banding, fresh, highly weathered 24.5-25.3 ft.			
			332.7		Screen Tip Elevation

Bottom of borehole at 29.5 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-20 S
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/5/2014 **COMPLETED** 3/5/2014 **GROUND ELEVATION** 362.2 ft **COORDINATES** N 1159490.3 E 2560157

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 15 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 9.4 ft. after 115 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 365.41)
			362.2		
5		See PZ-20 I for material descriptions			Annular Seal; Filter Pack
10					
15		Bottom of borehole at 15.0 feet.			Screen Tip Elevation

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-21 I
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/6/2014 **COMPLETED** 3/10/2014 **GROUND ELEVATION** 355.8 ft **COORDINATES** N 1160591.6 E 2561328.2

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger; Casing Advance; HQ Coring **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 24.4 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 7.9 ft. after 50 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 358.92)
			355.8		
5		residuum damp, stiff, sandy CLAY, red-brown with red-yellow mottles, silt, micas	348.8		
10		saprolite wet, stiff, sandy SILT, brown with pale yellow-brown mottles, clay, micas	344.8		Annular Seal
		Felsic biotite GNEISS medium to coarse grain, medium hard to hard, slightly to not weathered, flow banded, few fractures, dark gray to black with white bands, slightly weathered to 12 ft., then fresh, feldspar, quartz, biotite			Filter Pack
15		medium to coarse grain, hard, not weathered, flow banded, very few fractures, fresh rock, feldspar, quartz, biotite, felspar phenocrysts			
20		medium to coarse grain, hard, not weathered, flow banded, very few fractures, fresh rock, feldspar, quartz, biotite, felspar phenocrysts			
			331.4		Screen Tip Elevation

Bottom of borehole at 24.4 feet.

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

BORING PZ-21 S
Page 1 of 1

SOUTHERN COMPANY

BORING LOG

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Branch Hydrogeologic Study
LOCATION Milledgeville, GA

DATE STARTED 3/11/2014 **COMPLETED** 3/11/2014 **GROUND ELEVATION** 355.5 ft **COORDINATES** N 1160592.4 E 2561321.3

CONTRACTOR SCS Field Services **METHOD** Hollow Stem Auger **EQUIPMENT** CME 550

DRILLED BY S. Denty **LOGGED BY** W. Shaughnessy **CHECKED BY** _____ **BORING DEPTH** 9.5 ft.

GROUND WATER DEPTH: DURING _____ **COMP.** _____ **DELAYED** 4.3 ft. after 50 hrs.

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	Natural Gamma (75 / 150 / 225)	WELL DATA (Top of casing Elev. = 358.52)
			355.5		Annular Seal
					Filter Pack
5		See PZ-21 I for material descriptions			
					Screen Tip Elevation
		Bottom of borehole at 9.5 feet.			

SIMPLE GEOLOGY WITH WELL - ESEE DATABASE.GDT - 10/29/20 14:45 - \\ALTRCFP01\LAPARKER$\DESKTOP\GPC\PLANT BRANCH PIEZOMETERS.GPJ

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-23I

SHEET 1 of 2

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 67.00 ft
LOCATION: Milledgville, GA

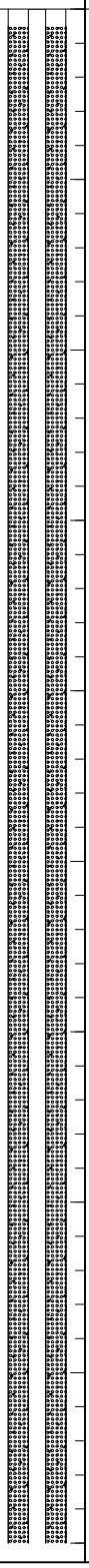
DRILL RIG: Mini-Sonic Track Mounted Rig
DATE STARTED: 7/27/16
DATE COMPLETED: 7/29/16

NORTHING: 1,162,975.40
EASTING: 2,557,877.70
GS ELEVATION: 425.1
TOC ELEVATION: 427.74 ft

DEPTH W.L.: 52.00
ELEVATION W.L.: 375.90
DATE W.L.: 07/29/2016
TIME W.L.: na

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	425	0.00 - 6.00 sandy SILT, fine sand, reddish borwn , cohesive, w < PL	ML		419.1	1		6.00 / 6.00
5	420							
		6.00 - 16.00 silty SAND, fine to medium sand, light reddish brown, non-cohesive, moist, micaseous			6.00			
10	415					2		8.00 / 10.00
15	410				409.1			
		16.00 - 24.00 light grayish brown	SM		16.00	3		5.40 / 10.00
20	405				401.1			
		24.00 - 36.00 silty SAND, fine to coarse, trace gravel, light grayish brown, moist, relict rock structure apparent, SAPROLITE			24.00			
25	400					4		7.50 / 10.00
30	395							
35	390				389.1			
		36.00 - 37.00 No Recovery			36.00 388.1	5		0.00 / 1.00
		37.00 - 40.00 Biotite Gneiss, highly competent, litlle weathering	GNEISS		37.00	6		2.50 / 3.00
40	385				385.1			
		40.00 - 42.00 Difficult drilling			40.00 383.1			
		42.00 - 67.00 Biotite Gneiss			42.00	7		0.00 / 6.00
45		Log continued on next page						

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0'-56.5'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 56.5'-66.5'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: PVC

FILTER PACK
Interval: 54.5'-67'
Type: 54.5-55.0 - 30/45 Sand; 55.5-67 - #1 Sand

FILTER PACK SEAL
Interval: 48.5'-54.5'
Type: 52.5'-54.5' - 3/8" Bentonite Pellets, 50.5' -52.5' - 3/8" Bentonite Chips

ANNULUS SEAL
Interval: 0' - 48.5'
Type: Portland Cement (Type II)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminium

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade
DRILLER: John Vasquez

GA INSPECTOR: Randy Pettyjohn
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-23I

SHEET 2 of 2

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 67.00 ft
LOCATION: Milledgville, GA

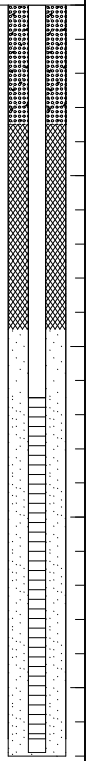
DRILL RIG: Mini-Sonic Track Mounted Rig
DATE STARTED: 7/27/16
DATE COMPLETED: 7/29/16

NORTHING: 1,162,975.40
EASTING: 2,557,877.70
GS ELEVATION: 425.1
TOC ELEVATION: 427.74 ft

DEPTH W.L.: 52.00
ELEVATION W.L.: 375.90
DATE W.L.: 07/29/2016
TIME W.L.: na

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
45	380	42.00 - 67.00 Biotite Gneiss *(Continued)*				7		
50	375					8		6.00 / 10.00
55	370							
60	365					9		8.60 / 10.00
65	360				358.1			
		Boring completed at 67.00 ft						
70	355							
75	350							
80	345							
85	340							
90								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0'-56.5'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 56.5'-66.5'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: PVC

FILTER PACK
Interval: 54.5'-67'
Type: 54.5-55.0 - 30/45 Sand; 55.5-67 - #1 Sand

FILTER PACK SEAL
Interval: 48.5'-54.5'
Type: 52.5'-54.5' - 3/8" Bentonite Pellets, 50.5' -52.5' - 3/8" Bentonite Chips

ANNULUS SEAL
Interval: 0' - 48.5'
Type: Portland Cement (Type II)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminium

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade
DRILLER: John Vasquez

GA INSPECTOR: Randy Pettyjohn
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-24S/BRGWC-24S

SHEET 1 of 1

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 42.00 ft
LOCATION: Milledgville, GA

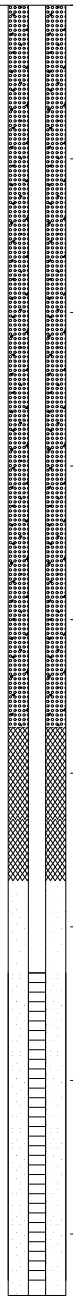
DRILL RIG: Prosonic Truck Mounted Rig
DATE STARTED: 7/27/16
DATE COMPLETED: 7/27/16

NORTHING: 1,162,400.90
EASTING: 2,562,862.20
GS ELEVATION: 351.4
TOC ELEVATION: 354.10 ft

DEPTH W.L.:11.25
ELEVATION W.L.: 342.75
DATE W.L.:7/28/16
TIME W.L.:na

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	350	0.00 - 10.00 No Recovery; Hydrovac			341.4			
10	340	10.00 - 11.00 SILT, NP, light grey brown, mottled; moderately weathered, relic structure foliations, friable, micaceous, sapprolite; cohesive, dry, firm	ML		10.00 340.4 11.00 339.4	1	7.00	10.00
		11.00 - 12.00 SILT, NP, few fine sand; light grey brown, white brown, mottled, moderately weathered, relict structure foliations, micaceous, sapprolite; cohesive, dry, soft	SW		12.00 338.1			
		12.00 - 13.30 SAND, medium grain, well graded, trace few silt, trace coarse sand, subangular; light grey, mottled, moderately weathered, massive, micaceous, sapprolite; cohesive, moist, very loose	MLS SW		337.4 14.00 334.6			
15	335	13.30 - 14.00 sandy SILT, low plasticity, fine-medium grain sand, well graded, trace subrounded coarse sand; grey brown and white, moderately weathered, massive, micaceous, SAPROLITE; cohesive, moist, loose	ML		333.9 17.50 332.6			
		14.00 - 16.80 SAND, medium grain, well graded, trace few silt, trace coarse sand, subangular; light grey, mottled, moderately weathered, massive, micaceous, SAPROLITE; cohesive, moist, very loose			18.80 329.4	2	10.00	10.00
20	330	16.80 - 17.50 SILT, NP, light grey brown, mottled; moderately weathered, relic structure foliations, friable, micaceous, SAPROLITE; cohesive, moist, firm	MLS ML		22.00 328.1 23.30 326.9			
		17.50 - 18.80 SILT, NP, trace fine grain sand; grey brown, moderately weathered, massive, micaceous, SAPROLITE; cohesive, moist, very loose			24.50 325.3			
25	325	18.80 - 22.00 SILT, NP, trace medium sand; grey brown, moderately weathered, massive, micaceous, SAPROLITE; cohesive, moist, loose	SM		324.4 27.00			
		22.00 - 23.30 sandy SILT, NP, fine sand; light brown, moderately weathered, massive, micaceous, SAPROLITE; cohesive, moist, very soft	ML					
30	320	23.30 - 24.50 SILT, NP; grey brown motteled dark grey white, moderately weathered, massive, micaceous, SAPROLITE; cohesive, moist, stiff				3	10.00	10.00
		24.50 - 26.10 SILT, NP, trace fine-medium grain sand; mottled white and grey brown, lightly wetahered, relict structure foliation, micaceous, SAPROLITE; cohesive, moist, soft			316.9 34.50 315.9			
35	315	26.10 - 27.00 silty SAND, low plasticity, wel graded fine-medium sand; white, light brey brown mottling, lightly weathered, relict structure foliations, micaceous, SAPROLITE; cohesive, moist, very soft	SP		35.50			
		27.00 - 34.50 SILT, NP, trace fine sand; grey brown and white mottleing, lightly weathered, relict structure foliation, micaceous, SAPROLITE; cohesive, moist, soft				4	5.00	5.00
40	310	34.50 - 35.50 SILT, NP, trace fine sand; grey brown and white mottleing, lightly weathered, relict structure foliation, micaceous, SAPROLITE; cohesive, moist, firm			310.9 40.50 309.4			
		35.50 - 40.50 SAND, fine-coarse sand, gap graded, subangular, trace silt; light grey brown, white mottling, lightly weathered, relict structure foliation, micaceous, SAPROLITE; NC, moist, compact						
45	305	40.50 - 42.00 No Recovery						
50		Boring completed at 42.00 ft						

MONITORING WELL DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0.0'-31.5'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 31.5'-41.5'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 28.5'-41.5'
Type: 28.5'-29.5', 30/45 fine sand; 29.5'-41.5', #1 sand
Quantity:

FILTER PACK SEAL
Interval: 23.5'-28.5'
Type: 23.5'-26.5', 3/8" Bentonite Chips; 26.5'-28.5', 3/8" Bentonite Pellets
Quantity:

ANNULUS SEAL
Interval: 0.0'-23.5'
Type: Portland Cement (Type I)
Quantity:

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: N/A

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: John Vasquez

GA INSPECTOR: Will Ethier
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS2_SURVEY UPDATED.GPJ PIEDMONT.GDT 11/10/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-26I

SHEET 1 of 1

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 30.50 ft
LOCATION: Milledgville, GA

DRILL RIG: TS-150 Track Mounted Rig
DATE STARTED: 7/26/16
DATE COMPLETED: 7/26/16

NORTHING: 1,160,669.00
EASTING: 2,561,626.40
GS ELEVATION: 368.0
TOC ELEVATION: 370.63 ft

DEPTH W.L.: 18.71
ELEVATION W.L.: 352.22
DATE W.L.: 7/21/2016
TIME W.L.: 13:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES
0		0.00 - 4.30 SILTY SAND, fine to coarse angular sand, non-plastic fines, trace fine to coarse sub-angular gravels; moderate reddish brown (10YR 4/6), some weathered micaceous grains, non-cohesive, compact, dry	SM		363.7	1		6.90 / 7.00	
5	365	4.30 - 6.10 SAND, fine to medium sub-angular sand, trace fine angular gravel (weathered bedrock); dusky brown (5YR 2/2), completely weathered (W5), SAPROLITE; non-cohesive, dry, compact	SP		4.30 361.9				Portland Cement (Type II)
		6.10 - 8.50 SILTY SAND, fine sand, non-plastic to low plasticity fines; light brown (5YR 6/6) to moderate reddish brown (10YR 4/6), highly weathered (W4), some relic foliaitions in core stones, weathered micaceous grains and quartz, SAPROLITE; cohesive, w<PL, firm	SM		6.10 359.5	2		3.00 / 3.00	
10	360	8.50 - 9.40 Gravelly SAND, fine to medium angular sand, fine to coarse soft angular gravels (weathered core stones), trace non-plastic fines; very pale orange (10YR 8/6) with black (N1) and pale yellowish orange (10YR 6/6) core stones, highly weathered (W4), weathered micaceous grains, biotite, and quartz, SAPROLITE; non-cohesive, dry, dense	SP		8.50 358.6 9.40 355.2	3		6.00 / 6.00	3/8" Bentonite Chips
15	355	9.40 - 12.80 SAND, medium to coarse sub-angular sand, some coarse soft angular gravels (weathered core stones); light brown (5YR 5/6), completely weathered (W5), SAPROLITE; non-cohesive, dry, dense to very dense	SM		12.80 353.7				
			TWR		14.30 352.5				3/8" Bentonite Pellets
		12.80 - 14.30 SILTY SAND, fine to medium sub-angular sand, non-plastic to low plasticity fines, some fine to coarse soft angular gravels (weathered core stones); very pale orange (10YR 8/2) to dark yellowish orange (10YR 6/6), highly weathered (W4), weathered micaceous minerals, biotite and quartz, SAPROLITE; non-cohesive, moist, dense	GNIESS		15.50	4		3.30 / 4.00	30/45 Sand
20	350	14.30 - 15.50 TRANSITIONALLY WEATHERED ROCK, fine to medium sub-angular sand, non-plastic to low plasticity fines, trace soft angular gravels (weathered core stones); light gray (N7), medium weathered (W3), quartz and biotite, non-cohesive, moist, very dense			348 20.00				#1 Sand
25	345	15.50 - 20.00 BEDROCK, Fresh (W1) to slightly weathered (W2), strongly foliaited (1 to 2 cm thick), light gray (N7) to grayish black (N2) mottled brownish gray (5YR 4/1) and medium bluish gray (5B 5/10) with some light brown (5YR 5/6) staining, fine to medium grained, non-porous to faintly porous, very strong (R4), GNIESS with hornblende, biotite and quartz, moist. 20.00 - 30.50 fresh (W1), some weathered fracture surfaces (spaced ~2 feet apart), trace weathered micaceous grains				5		8.40 / 10.49	0.010" Screen Slot
30	340				337.5				#1 Sand
		Boring completed at 30.50 ft							
35	335								
40	330								
45	325								

WELL CASING
Interval: 0.0'-20.5'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 20.5'-30.5'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.006"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 17.0'-30.5'
Type: 17.0'-18.0' 30/45 Sand - 18.0'-30.5' #1 Sand

FILTER PACK SEAL
Interval: 12.0'-17.0'
Type: 12.0'-15.0' 3/8" Bentonite Chips - 15.0'-17.0' 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 2'-12'
Type: Portland Cement (Type II)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Trenton Herod

GA INSPECTOR: Jeffrey Ingram
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-28I

SHEET 1 of 1

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 25.00 ft
LOCATION: Milledgville, GA

DRILL RIG: Mini-Sonic Track Mounted Rig
DATE STARTED: 7/23/16
DATE COMPLETED: 7/24/16

NORTHING: 1,159,505.10
EASTING: 2,560,151.70
GS ELEVATION: 362.5
TOC ELEVATION: 364.81 ft

DEPTH W.L.: 10.5
ELEVATION W.L.: 354.38
DATE W.L.: 7/23/16
TIME W.L.: 7:30

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0		0.00 - 5.00 SILT, NP, some fine-medium sand, trace subrounded fine gravel; reddish brown mottled light grey, whighly weathered, massive, micaceous, SAPROLITE; NC, dry, compact	ML		357.5	1		4.00 5.00	Portland Type 1	**WELL CASING** Interval: 0'-14.0' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded
5	360	5.00 - 6.10 sandy SILT, NP, finesand, trace subrounded fine quartz gravel; light reddish grey brown, moderately weathered, massive, micaceous, SAPROLITE; NC, dry, loose	MLS		5.00 356.4	2		5.00 5.00	3/8" Bentonite Chips	**WELL SCREEN** Interval: 14.0-24.0' Material: Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: Schedule 40 PVC
		6.10 - 9.50 SAND, poorly graded, fine-medium grain, some silt, trace subangular coarse gravel; grey lightly weathered, massive, micaceous, SAPROLITE; NC, dry, very loose	SP		6.10 353				3/8" Bentonite Pellets	**FILTER PACK** Interval: 11.0'-24.0' Type: 11.0'-12.0', 30/45 fine sand; 12.0'-24.0', #1 sand
10		9.50 - 10.00 TRANSITIONALLY WEATHERED ROCK, slightly weathered, foliated; brown to light yellowish brown, medium crystalline, weak rock, biotite GNEISS, biotite, quartz, feldspar, intensely fractured	TWR SPG ML		351.7 351				#1 30/45 FineSand	**FILTER PACK SEAL** Interval: 6.0'-11.0' Type: 6.0'-9.0', 3/8" Bentonite Chips; 9.0'-11.0', Bentonite Pellets
	350	10.00 - 10.80 gravelly SAND, well graded, medium-coarse grain, some subangular coarse grain gravel, trace silt, trace subrounded cobbles; olive brown, moderately weathered, massive, homogenous, micaceous, SAPROLITE; NC, moist, loose	SPG		11.50 347.5	3		5.00 5.00		**ANNULUS SEAL** Interval: 2.0'-6.0' Type: Portland Cement (Type I)
15		10.80 - 11.50 SILT, NP, some medium-coarse sand, trace quartz fine angular gfvael; reddish brown, moderately weathered, massive, micaceous, SAPROLITE; cohesive, wet, firm	TWR		15.00 344.7	4		3.50 5.00	#1 Coarse Sand	**WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum
	345	11.50 - 15.00 gravelly SAND, well graded, medium-coarse grain, some subangular coarse grain gravel, trace silt, tracel subrounded cobbles; olive brown, moderately weathered, massive, homogenous, micaceous, SAPROLITE; NC, moist, loose			17.80 342.5					
20		15.00 - 17.80 TRANSITIONALLY WEATHERED ROCK, slightly weathered, foliated; grey brown to light yellowish brown, medium crystalline, weak rock, biotite GNEISS, biotite, quartz, feldspar, moderately fractured, fine-medium sand present, wet	GNEISS		20.00	5		5.00 5.00	0.010" Screen Slot	**DRILLING METHODS** Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
	340	17.80 - 20.00 sluff in hole								
25		20.00 - 25.00 BEDROCK, biotite GNEISS, fresh, foliated, dark grey and light grey, yellow brown disoloration, medium-very coarsely crystalline, little fracrues, biotite, quartz, feldspar, wet			337.5				#1 Sand	
	335	Boring completed at 25.00 ft								
30										
	330									
35										
	325									
40										
	320									
45										
	315									
50										

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Scotty Vermillon

GA INSPECTOR: Will Ethier
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS2_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-31S

SHEET 1 of 1

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 39.50 ft
LOCATION: Milledgville, GA

DRILL RIG: Prosonic Truck Mounted Rig
DATE STARTED: 7/15/16
DATE COMPLETED: 7/26/16

NORTHING: 1,160,936.90
EASTING: 2,557,971.80
GS ELEVATION: 374.3
TOC ELEVATION: 376.77 ft

DEPTH W.L.: 19.6
ELEVATION W.L.: 357.34
DATE W.L.: 7/26/16
TIME W.L.: 10:07

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0		0.00 - 5.50 sandy SILT, NP, medium grain, trace fine gravel; reddish brown, massive, micaceous, SAPROLITE; NC, dry loose	MLS		368.8	1		7.00 7.00		
5	370	5.50 - 5.80 SAND, poorly graded, fine grain; light yellowish brown; NC, dry, loose	SP MLS		5.80 367.3					
		5.80 - 7.00 sandy SILT, NP, medium grain, trace fine gravel; reddish brown, massive, micaceous, SAPROLITE; NC, dry, loose			7.00 364.8					
10	365	7.00 - 9.50 fine sand, trace coarse subangular sand; brown, homogenous, micaceous, SAPROLITE; NC, dry, compact			9.50					
		9.50 - 17.00 SAND, well graded, medium grain, trace subrounded coarse sand, trace silt; grey brown with white mottle, massive, micaceous, SAPROLITE; NC, dry (moist at 16 ft), compact	SW		357.3	2		10.00 10.00		
15	360								Portland Type 1	
		17.00 - 19.50 clayey SAND, medium grain, poorly graded, highly plastic clay, trace subangular coarse sand; yellowish brown sand, grey clay, moderately weathered, heterogenous, micaceous; NC, moist, slightly loose	SC		17.00 354.8					
20	355	19.50 - 23.00 poorly graded, medium grain sand, low plastic clay; grey with brown mottling, homogenous, micaceous, SAPROLITE; cohesive, wet, firm	SC		19.50 351.3	3		10.00 10.00		
		23.00 - 25.00 highly plastic clay, trace subangular coarse sand; yellowish brown sand, grey clay, moderately weathered, heterogenous, micaceous, SAPROLITE; NC, moist, slightly loose	SC		23.00 349.3				3/8" Bentonite Chips	
25	350	25.00 - 27.00 well graded, medium-coarse grained sand, few clay, trace subangular fine gravel, trace cobbles; dark grey clay, light brown sand with white mottling, heterogenous, micaceous, SAPROLITE; NC, moist, loose	SC		25.00 347.3				3/8" Bentonite Pellets	
		27.00 - 29.50 CLAYEY SAND, poorly graded, medium grained sand, low plastic clay; grey with brown mottling, homogenous, micaceous, SAPROLITE; cohesive, wet, firm	SC		27.00 344.8				#1 30/45 FineSand	
30	345	29.50 - 31.50 gravelly SAND, medium-coarse sand, well graded, some angular cobbles; grey-white mottling, highly weathered bedrock, micaceous; NC, wet, very loose	SPG TWR		29.50 342.8 31.50 341.3	4		10.00 10.00	#1 Coarse Sand	
		31.50 - 33.00 TRANSITIONALLY WEATHERED ROCK, biotite GNEISS, highly weathered, yellow, white brown, medium-coarsely crystalling, soft rock, feldspar, quartz, biotite, pulverized rock, moist, highly fractured			33.00 337.3				0.010" Screen Slot	
35	340	33.00 - 37.00 No Recovery								
		37.00 - 37.80 sluff in hole			336.5					
		37.80 - 38.00 TRANSITIONALLY WEATHERED ROCK, biotite GNEISS, highly weathered, yellow, white brown, medium-coarsely crystalling, soft rock, feldspar, quartz, biotite, pulverized rock, wet, highly fractured			38.00 334.8	5		1.00 2.50	#1 Sand	
40	335	38.00 - 39.50 No Recovery								
		Boring completed at 39.50 ft								
45	330									
50	325									

WELL CASING
Interval: 0'-29.5'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 29.5'-39.5'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 26.5'-39.5'
Type: 26.5.'-27.5', 30/45 fine sand; 27.5'-39.5', #1 sand

FILTER PACK SEAL
Interval: 21.5'-26.5'
Type: 21.5'-24.5', 3/8" Bentonite Chips; 24.5'-26.5', Bentonite Pellets

ANNULUS SEAL
Interval: 2.0'-21.5'
Type: Portland Cement (Type I)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: John Vasquez

GA INSPECTOR: Will Ethier
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/15/16

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS2_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/20/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-39

SHEET 1 of 2

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 56.50 ft
LOCATION: Milledgville, GA

DRILL RIG: TS-150 Track Mounted Rig
DATE STARTED: 7/30/16
DATE COMPLETED: 7/30/16

NORTHING: 1,163,675.40
EASTING: 2,557,460.50
GS ELEVATION: 432.0
TOC ELEVATION: 434.78 ft

DEPTH W.L.: 46.02
ELEVATION W.L.: 388.68
DATE W.L.: 08/02/2016
TIME W.L.: 14:15

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	430	0.00 - 10.00 SILT, NP; reddish brown, moderately weathered, massive, micaceous, SAPROLITE; cohesive, dry, firm	ML		422	1		10.00 10.00		
10	420	10.00 - 15.00 No Recovery			10.00 417	2		5.00 10.00		
15	415	15.00 - 19.50 SILT, NP, trace fine sand; reddish brown, moderately weathered, massive, micaceous, SAPROLITE; cohesive, dry, firm	ML		15.00 412.5					
20	410	19.50 - 20.00 trace fine-coarse sand; white mottling, relict rock structure, micaceous, SAPROLITE; cohesive, dry, soft			20.00 410	3		8.00 10.00	Portland Type 1 3/8" Bentonite Chips 3/8" Bentonite Pellets #1 30/45 FineSand	
		20.00 - 22.00 No Recovery			22.00					
25	405	22.00 - 30.00 SILT, NP, trace fine-coarse sand; reddish brown with white mottling, moderately weathered, relict rock structure, micaceous, SAPROLITE; cohesive, moist, soft	ML		402					
30	400	30.00 - 33.00 No Recovery			30.00 399	4		7.00 10.00	#1 Coarse Sand 0.010" Screen Slot	
		33.00 - 34.00 SILT, NP, trace fine-coarse sand; reddish brown with white mottling, moderately weathered, relict rock structure, micaceous, SAPROLITE; cohesive, moist, soft	ML		33.00 398 34.00					
35	395	34.00 - 40.00 light grey brown			392					
40	390	40.00 - 45.20 sandy SILT, NP, fine-medium grain sand, trace coarse sand; reddish light grey brown mottled, moderately weathered, relict foliation structure, micaceous, SAPROLITE; cohesive, wet, very soft	MLS		40.00 386.8	5		6.50 6.50	#1 Sand 3/8" Bentonite Chips	
45	385	45.20 - 46.20 silty SAND, well graded fine-coarse sand, angular, NP, trace subangular cobbles, weathered beadrock, quartz, mica; grey brown, lightly weathered, relict foliation structures, micaceous, SAPROLITE, cohesive, wet, very soft	SM		45.20 385.8					
		46.20 - 56.50 Fresh, foliated, dark grey, white, red, finely-medium crystalline, highly competent rock, biotite GNEISS, little fractured	GNEISS		46.20	6		3.50 3.50		
50		Log continued on next page								

WELL CASING
Interval: 0'-34.7'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 34.7'-44.7'
Material: U-Pack Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 31.4'-44.7'
Type: 31.4'-32.5', 30/45 fine sand; 32.5'-44.7', #1 sand

FILTER PACK SEAL
Interval: 26.2'-31.4'
Type: 26.2'-29.4', 3/8" Bentonite Chips; 29.4'-31.4', Bentonite Pellets

ANNULUS SEAL
Interval: 2'-26.2'
Type: Portland Cement (Type I)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: N/A

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Trenton Herod

GA INSPECTOR: Will Ethier
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/15/17

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS2_SURVEY UPDATED.GPJ PIEDMONT.GDT 9/29/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-39

PROJECT: SCS Plant Branch
PROJECT NUMBER: 166-0939
DRILLED DEPTH: 56.50 ft
LOCATION: Milledgville, GA

DRILL RIG: TS-150 Track Mounted Rig
DATE STARTED: 7/30/16
DATE COMPLETED: 7/30/16

NORTHING: 1,163,675.40
EASTING: 2,557,460.50
GS ELEVATION: 432.0
TOC ELEVATION: 434.78 ft

DEPTH W.L.: 46.02
ELEVATION W.L.: 388.68
DATE W.L.: 08/02/2016
TIME W.L.: 14:15

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
50		46.20 - 56.50 Fresh, foliated, dark grey, white, red, finely-medium crystalline, highly competent rock, biotite GNEISS, little fractured *(Continued)*	GNEISS							
55	380				375.5				3/8" Bentonite – Pellets	
60	375	Boring completed at 56.50 ft								
65	370									
70	365									
75	360									
80	355									
85	350									
90	345									
95	340									
100	335									

WELL CASING
Interval: 0'-34.7'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 34.7'-44.7'
Material: U-Pack Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 31.4'-44.7'
Type: 31.4'-32.5', 30/45 fine sand; 32.5'-44.7', #1 sand

FILTER PACK SEAL
Interval: 26.2'-31.4'
Type: 26.2'-29.4', 3/8" Bentonite Chips; 29.4'-31.4', Bentonite Pellets

ANNULUS SEAL
Interval: 2'-26.2'
Type: Portland Cement (Type I)

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: N/A

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Trenton Herod

GA INSPECTOR: Will Ethier
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/15/17

GOLDER

BOREHOLE RECORD PLANT BRANCH LOGS2_SURVEY UPDATED.GPJ PIEDMONT.GDT 9/29/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-40S

SHEET 1 of 1

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 40.20 ft
LOCATION: Aera A

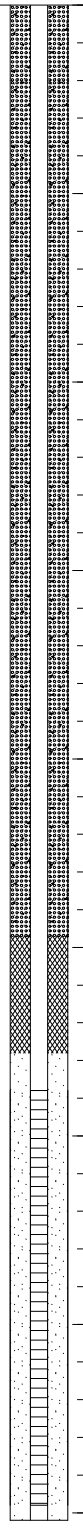
DRILL RIG: CME 550
DATE STARTED: 2/14/17
DATE COMPLETED: 2/14/17

NORTHING: 1,162,414.90
EASTING: 2,562,807.70
GS ELEVATION: 353.2
TOC ELEVATION: 355.96 ft

DEPTH W.L.: 12.7'
ELEVATION W.L.: 340.5
DATE W.L.: 2/14/2017
TIME W.L.: 13:45

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N-VALUE	REC
0	353	0.00 - 10.00 Boring was Hydrovacuum to 10 feet.								
5	350									
10	345				343.2					
		10.00 - 23.50 ML, SILT, with some sand, fine to medium grained, non-plastic; gray/silver to red; cohesive, moist, w<PL.	ML		10.00	S1	DO	2-2-2	4	1.50/1.50
15	340									
						S2	DO	2-2-3	5	1.50/1.50
20	335									
					329.7					
		23.50 - 33.50 SM, SILTY SAND, fine to coarse, non plastic; light brown to black to white; non-cohesive, dry to moist, W<PL.	SM		23.50	S3	DO	21-37-50/3	87/9	1.25/1.50
25	330									
						S4	DO	11-20-35	55	1.50/1.50
30	325									
					319.7					
		33.50 - 38.50 ML, SILT, with trace fine sand, non-plastic, white to black to bronze, weathered; cohesive, moist, firm to stiff, W<PL.	ML		33.50	S5	DO	7-13-17	30	1.00/1.50
35	320									
					314.7					
		38.50 - 40.20 SP, SAND, fine to coarse grained with trace silt, non-plastic; white to bronze; non-cohesive, dry, W<PL.	SP		38.50 313	S6	DO	12-18-24	42	1.00/1.50
40	315	Boring completed at 40.20 ft								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-28.5'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Flush/Screw

WELL SCREEN
Interval: 28.8-38.8'
Material: Schedule 40 PVC Pre-Pack
Diameter: 2
Slot Size: 0.010
End Cap: 39.8-40.2'

FILTER PACK
Interval: 27.8-40.2'
Type: FilterSil

FILTER PACK SEAL
Interval: 24.7-27.8'
Type: 3/8" PEL-PLUG Bentonite Pellets

ANNULUS SEAL
Interval: 0-24.7
Type: Pure Gold Grout (70:30)

WELL COMPLETION
Pad: 4' x 4'
Protective Casing: 4" x 4" x 5' Aluminum

DRILLING METHODS
Soil Drill: 4.25 inch HSA
Rock Drill: None

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Southern Company Services
DRILLER: S. Milam

GA INSPECTOR: Michael Boatman
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 4/13/17

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-41S

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 45.00 ft
LOCATION: Aera A

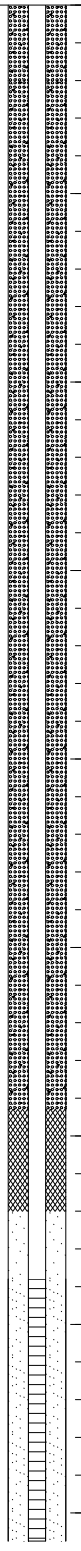
DRILL RIG: CME 550
DATE STARTED: 2/13/17
DATE COMPLETED: 2/14/17

NORTHING: 1,162,431.80
EASTING: 2,562,759.40
GS ELEVATION: 354.3
TOC ELEVATION: 357.17 ft

DEPTH W.L.: 13.7
ELEVATION W.L.: 340.6
DATE W.L.: 2/14/2017
TIME W.L.: 0735

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N-VALUE	REC
0		0.00 - 10.00 Boring was Hydrovacuum to 10 feet.								
5	350									
	345				344.3					
10		10.00 - 28.50 CL, CLAY, with trace-some sand, fine to coarse, and trace silt, moderate plasticity; white to red orange brown; cohesive, dry to moist, soft to stiff, W< to ~PL.			10.00					
	340					S1	DO	2-1-5	6	1.00 / 1.50
15										
	335		CL			S2	DO	5-8-11	19	1.50 / 1.50
20										
	330					S3	DO	3-5-8	13	1.50 / 1.50
25					325.8					
	325	28.50 - 38.50 SM, SILTY SAND, non to low plasticity; silvery bronze to light brown to red brown, contians mica, biotite gneiss saprolite; cohesive, moist, soft to firm, W<PL.			28.50	S4	DO	2-3-3	6	1.50 / 1.50
30			SM							
	320					S5	DO	3-4-7	11	1.16 / 1.50
35					315.8					
	315	38.50 - 45.00 ML, SILT, with trace fine sand, non plastic; white to bronze, weathered, biotite gneiss saprolite; cohesive, moist, soft, W<PL.	ML		38.50	S6	DO	3-7-11	18	1.50 / 1.50
40		Log continued on next page								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-29.3'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Flush/Screw

WELL SCREEN
Interval: 33.8-43.8'
Material: Schedule 40 PVC Pre-Pack
Diameter: 2
Slot Size: 0.010
End Cap: 43.8-44.2'

FILTER PACK
Interval: 32-44.2'
Type: FilterSil

FILTER PACK SEAL
Interval: 29.3-32'
Type: 3/8" PEL-PLUG Bentonite Pellets

ANNULUS SEAL
Interval: 0-29.3'
Type: Pure Gold Grout (70:30)

WELL COMPLETION
Pad: 4' x 4'
Protective Casing: 4" x 4" x 5' Aluminum

DRILLING METHODS
Soil Drill: 4.25 inch HSA
Rock Drill: None

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Southern Company Services
DRILLER: S. Milam

GA INSPECTOR: Michael Boatman
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 4/13/17

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-41S

SHEET 2 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 45.00 ft
LOCATION: Aera A

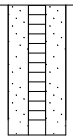
DRILL RIG: CME 550
DATE STARTED: 2/13/17
DATE COMPLETED: 2/14/17

NORTHING: 1,162,431.80
EASTING: 2,562,759.40
GS ELEVATION: 354.3
TOC ELEVATION: 357.17 ft

DEPTH W.L.: 13.7
ELEVATION W.L.: 340.6
DATE W.L.: 2/14/2017
TIME W.L.: 0735

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N-VALUE	REC
		38.50 - 45.00 ML, SILT, with trace fine sand, non plastic; white to bronze, weathered, biotite gneiss saprolite; cohesive, moist, soft, W<PL. *(Continued)*	ML							
45	310				309.3	S7	DO	8-12-13	25	1.33 / 1.50
		Boring completed at 45.00 ft								
50	305									
55	300									
60	295									
65	290									
70	285									
75	280									
80	275									

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-29.3'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Flush/Screw

WELL SCREEN
Interval: 33.8-43.8'
Material: Schedule 40 PVC Pre-Pack
Diameter: 2
Slot Size: 0.010
End Cap: 43.8-44.2'

FILTER PACK
Interval: 32-44.2'
Type: FilterSil

FILTER PACK SEAL
Interval: 29.3-32'
Type: 3/8" PEL-PLUG Bentonite Pellets

ANNULUS SEAL
Interval: 0-29.3'
Type: Pure Gold Grout (70:30)

WELL COMPLETION
Pad: 4' x 4'
Protective Casing: 4" x 4" x 5' Aluminum

DRILLING METHODS
Soil Drill: 4.25 inch HSA
Rock Drill: None

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Southern Company Services
DRILLER: S. Milam

GA INSPECTOR: Michael Boatman
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 4/13/17

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-42S

SHEET 1 of 1

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 32.20 ft
LOCATION: Aera A

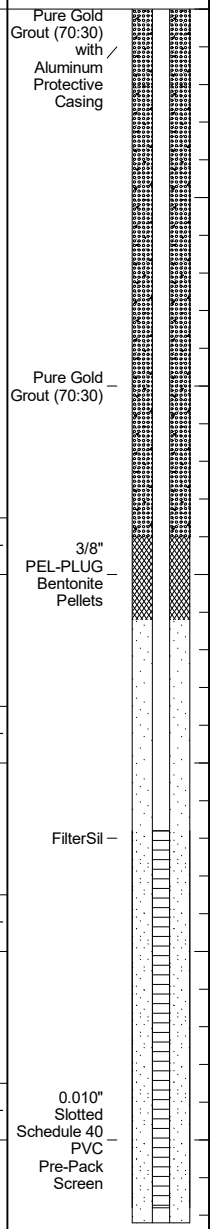
DRILL RIG: CME 550
DATE STARTED: 2/8/17
DATE COMPLETED: 2/9/17

NORTHING: 1,162,845.70
EASTING: 2,562,735.00
GS ELEVATION: 359.0
TOC ELEVATION: 361.66 ft

DEPTH W.L.: 20.84
ELEVATION W.L.: 338.16
DATE W.L.: 2/10/2017
TIME W.L.: 10:45

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N-VALUE	REC
0		0.00 - 10.00 Boring was Hydrovacuum for the first 10 feet.								
5	355									
10	350				349					
		10.00 - 28.50 SM, SILTY SAND, fine to medium grained, non-plastic; brown to black to white, non-cohesive, dry, compact, W<PL. **Becomes more saprolitic with depth.	SM		10.00	S1	DO	4-5-8	13	1.50 / 1.50
15	345									
20	340					S2	DO	4-11-20	31	1.33 / 1.50
25	335					S3	DO	14-40-50/5	90/11	1.18 / 1.50
30	330	28.50 - 32.20 SP, SAND, medium grained, with trace silt, non-plastic; black; non-cohesive, moist, very dense, W<PL. Auger Refusal.	SP		330.5 28.50	S4	DO	50/2	50/2	0.17 / 1.50
35	325	Boring completed at 32.20 ft			326.8					
40	320									

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-14'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Flush/Screw

WELL SCREEN
Interval: 21.8-31.8
Material: Schedule 40 PVC Pre-Pack
Diameter: 2
Slot Size: 0.010
End Cap: 31.8-32.2'

FILTER PACK
Interval: 16.2-32.2'
Type: FilterSil

FILTER PACK SEAL
Interval: 14-16.2'
Type: 3/8" PEL-PLUG Bentonite Pellets

ANNULUS SEAL
Interval: 0-16.2
Type: Pure Gold Grout (70:30)

WELL COMPLETION
Pad: 4' x 4'
Protective Casing: 4" x 4" x 5' Aluminum

DRILLING METHODS
Soil Drill: 4.25 inch HSA
Rock Drill: None

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Southern Company Services
DRILLER: S. Milam

GA INSPECTOR: Michael Boatman
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 4/13/17

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-43

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 41.50 ft
LOCATION: Former Coal Pile

DRILL RIG: Pro Sonic 150
DATE STARTED: 2/6/18
DATE COMPLETED: 2/7/18

NORTHING: 1,162,159.80
EASTING: 2,562,031.30
GS ELEVATION: 381.0
TOC ELEVATION: 383.71 ft

DEPTH W.L.: 30.60
ELEVATION W.L.: 350.4
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	380	0.00 - 8.50 Soil was removed by Hydorvac to 8.5 ft bgs							Grout with aluminum casing	**WELL CASING** Interval: 0-30 Material: Schedule 40 PVC Diameter: 2 inch Joint Type: Screw
5	375									**WELL SCREEN** Interval: 30.0-40.0 Material: .010 Slotted Screen Diameter: 1 inch Slot Size: .010" End Cap: 40-40.4
					372.5 / 8.50					**FILTER PACK** Interval: 28.0-41.5 Type: FilterSil
10	370	8.50 - 17.00 Fill, Silty Sand, sands f-m, reddish brown, micaceous, non-cohesive, moist, loose.	SM							**FILTER PACK SEAL** Interval: 23.0-28.0 Type: 3/8" PEL-PLUG Bentonite Pellets
15	365								Portland cement/Quikrete Grout mix	**ANNULUS SEAL** Interval: 0-23.0 Type: Portland Cement and Quikrete
					364 / 17.00					**WELL COMPLETION** Pad: NA Protective Casing: 4"x4"x5'
20	360	17.00 - 39.50 Residuum, Silty Sand, sands f-c, grayish brown, micaceous, non-cohesive, moist to wet (may be some perching of water table in areas with higher fine content), loose.								**DRILLING METHODS** Soil Drill: Rotosonic Rock Drill: Core
25	355		SM						3/8" PEL-PLUG Bentonite Pellets	
30	350								FilterSil	
35	345								One inch piezometer pipe	
					341.5 / 39.50					
40		Log continued on next page								

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-43

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 41.50 ft
LOCATION: Former Coal Pile

DRILL RIG: Pro Sonic 150
DATE STARTED: 2/6/18
DATE COMPLETED: 2/7/18

NORTHING: 1,162,159.80
EASTING: 2,562,031.30
GS ELEVATION: 381.0
TOC ELEVATION: 383.71 ft

DEPTH W.L.: 30.60
ELEVATION W.L.: 350.4
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
	340	39.50 - 41.50 BIOTITE GNEISS, slightly weathered to fresh, very thin layer of saprolite, thinly banded, white and black, phaneritic. *(Continued)*			339.5					
		Boring completed at 41.50 ft								
45	335									
50	330									
55	325									
60	320									
65	315									
70	310									
75	305									
80	300									

WELL CASING
Interval: 0-30
Material: Schedule 40 PVC
Diameter: 2 inch
Joint Type: Screw

WELL SCREEN
Interval: 30.0-40.0
Material: .010 Slotted Screen
Diameter: 1 inch
Slot Size: .010"
End Cap: 40-40.4

FILTER PACK
Interval: 28.0-41.5
Type: FilterSil

FILTER PACK SEAL
Interval: 23.0-28.0
Type: 3/8" PEL-PLUG Bentonite Pellets

ANNULUS SEAL
Interval: 0-23.0
Type: Portland Cement and Quikrete

WELL COMPLETION
Pad: NA
Protective Casing: 4"x4"x5'

DRILLING METHODS
Soil Drill: Rotosonic
Rock Drill: Core

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-44

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 57.00 ft
LOCATION: Former Coal Pile

DRILL RIG: Pro Sonic 150
DATE STARTED: 2/1/18
DATE COMPLETED: 2/2/18

NORTHING: 1,161,724.60
EASTING: 2,561,587.50
GS ELEVATION: 380.5
TOC ELEVATION: 383.04 ft

DEPTH W.L.: 24.83
ELEVATION W.L.: 355.67
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	380	0.00 - 8.00 Soil was removed by Hydrovac from 0-8 ft bgs							Grout Mix and Stainless Steel Casing	**WELL CASING** Interval: 0-47 Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw **WELL SCREEN** Interval: 46.6-56.6 Material: Schedule 40 PVC Diameter: 2" Slot Size: 0.010" Slotted End Cap: 56.6-57 **FILTER PACK** Interval: 45-57 Type: FilterSil **FILTER PACK SEAL** Interval: 40-45 Type: 3/8" PEL-PLUG Bentonite Pellets **ANNULUS SEAL** Interval: 0-40 Type: Portland Cement/Quikrete **WELL COMPLETION** Pad: 4'x4' Protective Casing: 4"x4"x5' **DRILLING METHODS** Soil Drill: Rotosonic Rock Drill: Core
5	375				372.5					
		8.00 - 29.00 Fill, Sand with trace silt and gravel, reddish brown, non-cohesive, moist.	SP-SM		8.00				Grout Mix	
10	370									
15	365									
20	360									
25	355				351.5					
		29.00 - 48.00 Residuum, Sand with trace silt and gravel, grayish brown, micaceous, non-cohesive, moist.	SP		29.00					
30	350									
35	345									
40	340									

Log continued on next page

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-44

SHEET 2 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 57.00 ft
LOCATION: Former Coal Pile

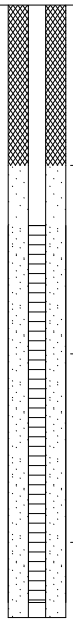
DRILL RIG: Pro Sonic 150
DATE STARTED: 2/1/18
DATE COMPLETED: 2/2/18

NORTHING: 1,161,724.60
EASTING: 2,561,587.50
GS ELEVATION: 380.5
TOC ELEVATION: 383.04 ft

DEPTH W.L.: 24.83
ELEVATION W.L.: 355.67
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
45	335	29.00 - 48.00 Residuum, Sand with trace silt and gravel, grayish brown, micaceous, non-cohesive, moist. *(Continued)*	SP		332.5			
50	330	48.00 - 51.00 Saprolite, recovered as rock flour, gravel, and cobbles.	GP-GM		48.00 329.5			
55	325	51.00 - 57.00 BIOTITE GNEISS, slightly weathered to fresh, white/black, phaneritic, strong.			51.00 323.5			
		Boring completed at 57.00 ft						
60	320							
65	315							
70	310							
75	305							
80	300							

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-47
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Screw

WELL SCREEN
Interval: 46.6-56.6
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010" Slotted
End Cap: 56.6-57

FILTER PACK
Interval: 45-57
Type: FilterSil

FILTER PACK SEAL
Interval: 40-45
Type: 3/8" PEL-PLUG Bentonite Pellets

ANNULUS SEAL
Interval: 0-40
Type: Portland Cement/Quikrete

WELL COMPLETION
Pad: 4'x4'
Protective Casing: 4"x4"x5'

DRILLING METHODS
Soil Drill: Rotosonic
Rock Drill: Core

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-46

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 47.00 ft
LOCATION: Former Coal Pile

DRILL RIG: Pro Sonic 150
DATE STARTED: 2/5/18
DATE COMPLETED: 2/5/18

NORTHING: 1,162,756.20
EASTING: 2,560,559.00
GS ELEVATION: 382.1
TOC ELEVATION: 384.64 ft

DEPTH W.L.: 8.85
ELEVATION W.L.: 373.25
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	382	0.00 - 8.00 Soil was removed by Hydrovac from 0-8 ft bgs.							Grout mix and stainless steel casing	**WELL CASING** Interval: 0-35.6 Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw **WELL SCREEN** Interval: 35.6-45.6 Material: 0.010" Slotted Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: 45.6-47 **FILTER PACK** Interval: 34-46 Type: FilterSil **FILTER PACK SEAL** Interval: 29-34 Type: 3/8" PEL-PLUG Bentonite Pellets **ANNULUS SEAL** Interval: 0-29 Type: Portland Cement/Quikrete grout mix **WELL COMPLETION** Pad: 4'x4' Protective Casing: 4"x4"x5' **DRILLING METHODS** Soil Drill: Rotosonic Rock Drill: Core
5	377									
	375				374.1					
		8.00 - 37.00 Residuum, silty Sand, sands f-c, dark brown, micaceous, non-cohesive, moist, loose.			8.00					
10	372									
	370									
15	367									
	365									
20	362								Portland cement/quikrete grout mix	
	360		SM							
25	357									
	355									
30	352								3/8" PEL-PLUG Bentonite Pellets	
	350									
35	347								FilterSil	
	345				345.1					
		37.00 - 39.00 Saprolite, BIOTITE GNEISS, core presented as rock flour, and gravel/cobbles, black and white with light green coating around rock, highly mafic, thinly laminated, fine grained, soft.	GP-GM		37.00					
					343.1				0.010" Slotted Schedule 40 PVC	
40		39.00 - 47.00 BIOTITE GNEISS, slightly weathered to fresh, thickly banded, white and black, phaneritic, very strong.			39.00					
		Log continued on next page								

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-46

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 47.00 ft
LOCATION: Former Coal Pile

DRILL RIG: Pro Sonic 150
DATE STARTED: 2/5/18
DATE COMPLETED: 2/5/18

NORTHING: 1,162,756.20
EASTING: 2,560,559.00
GS ELEVATION: 382.1
TOC ELEVATION: 384.64 ft

DEPTH W.L.: 8.85
ELEVATION W.L.: 373.25
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45	340	39.00 - 47.00 BIOTITE GNEISS, slightly weathered to fresh, thickly banded, white and black, phaneritic, very strong. *(Continued)*								
					335.1					
50	335	Boring completed at 47.00 ft								
55	330									
60	325									
65	320									
70	315									
75	310									
80	305									

WELL CASING
Interval: 0-35.6
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Screw

WELL SCREEN
Interval: 35.6-45.6
Material: 0.010" Slotted Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: 45.6-47

FILTER PACK
Interval: 34-46
Type: FilterSil

FILTER PACK SEAL
Interval: 29-34
Type: 3/8" PEL-PLUG Bentonite Pellets

ANNULUS SEAL
Interval: 0-29
Type: Portland Cement/Quikrete grout mix

WELL COMPLETION
Pad: 4'x4'
Protective Casing: 4"x4"x5'

DRILLING METHODS
Soil Drill: Rotosonic
Rock Drill: Core

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-48

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 67.00 ft
LOCATION: South of Skills Center

DRILL RIG: Pro Sonic 150
DATE STARTED: 1/24/18
DATE COMPLETED: 1/25/18

NORTHING: 1,163,046.70
EASTING: 2,558,444.60
GS ELEVATION: 418.3
TOC ELEVATION: 420.90 ft

DEPTH W.L.: 30.55
ELEVATION W.L.: 387.75
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0		0.00 - 8.00 Soil removed by Hydrovac from 0-8 ft bgs.							Grout mix with stainless steel casing	**WELL CASING** Interval: 0-56.6 Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw
	415									**WELL SCREEN** Interval: 56.6-66.6 Material: 0.010" Slotted Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: 66.6-67
5										**FILTER PACK** Interval: 55-67 Type: FilterSil
					410.3					
	410	8.00 - 17.00 Fill, silty Sand, reddish brown, micaceous, moist, non-cohesive.			8.00					**FILTER PACK SEAL** Interval: 50-55 Type: 3/8" PEL-PLUG Bentonite Pellets
10			SM							**ANNULUS SEAL** Interval: 0-50 Type: Portland Cement/Quikrete grout mix
	405									**WELL COMPLETION** Pad: 4'x4' Protective Casing: 4"x4"x5'
15										**DRILLING METHODS** Soil Drill: Rotosonic Rock Drill: Core
					401.3					
	400	17.00 - 64.50 Residuum, Sand with some silt, grayish brown with white mottling, occasional relic structure, micaceous, dry, non-cohesive.			17.00					
20										
	395									
25									Portland Cement/Quikrete grout mix	
	390		SM							
30										
	385									
35										
	380									
40		Log continued on next page								

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-48

SHEET 2 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 67.00 ft
LOCATION: South of Skills Center

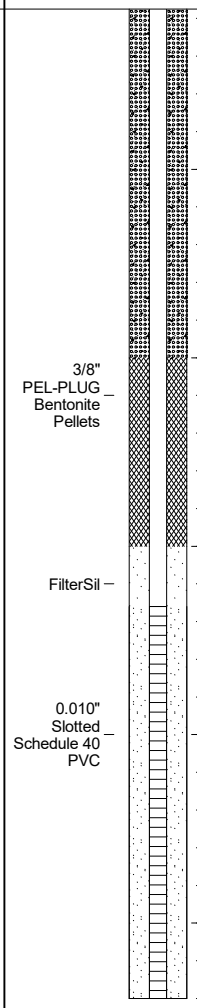
DRILL RIG: Pro Sonic 150
DATE STARTED: 1/24/18
DATE COMPLETED: 1/25/18

NORTHING: 1,163,046.70
EASTING: 2,558,444.60
GS ELEVATION: 418.3
TOC ELEVATION: 420.90 ft

DEPTH W.L.: 30.55
ELEVATION W.L.: 387.75
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
		17.00 - 64.50 Residuum, Sand with some silt, grayish brown with white mottling, occasional relic structure, micaceous, dry, non-cohesive. *(Continued)*						
45	375							
50	370							
	365		SM					
55								
60	360							
	355				353.8			
65		64.50 - 65.50 Partially weathered rock, sampled as sand and gravel with trace silt, grayish brown, subangular, non-cohesive.	GP-GM		64.50 352.8			
		65.50 - 67.00 GRANITIC BUTTON SCHIST, fresh, with biotite/muscovite/feldspar/quartz, weak foliation near horizontal, strong.			65.50 351.3			
	350	Boring completed at 67.00 ft						
70								
	345							
75								
	340							
80								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0-56.6
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Screw

WELL SCREEN
Interval: 56.6-66.6
Material: 0.010" Slotted Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: 66.6-67

FILTER PACK
Interval: 55-67
Type: FilterSil

FILTER PACK SEAL
Interval: 50-55
Type: 3/8" PEL-PLUG Bentonite Pellets

ANNULUS SEAL
Interval: 0-50
Type: Portland Cement/Quikrete grout mix

WELL COMPLETION
Pad: 4'x4'
Protective Casing: 4"x4"x5'

DRILLING METHODS
Soil Drill: Rotosonic
Rock Drill: Core

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-49

SHEET 1 of 1

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 27.00 ft
LOCATION: Near former pyrite pit

DRILL RIG: Pro Sonic 150
DATE STARTED: 1/30/18
DATE COMPLETED: 1/30/18

NORTHING: 1,163,321.20
EASTING: 2,561,125.70
GS ELEVATION: 382.2
TOC ELEVATION: 384.99 ft

DEPTH W.L.: 8.10
ELEVATION W.L.: 374.1
DATE W.L.: 2/14/18
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	382	0.00 - 2.00 Fill, silty Sand with trace gravel, reddish brown, micaceous, moist, non-cohesive.	SM		380.2				Grout mix and stainless steel casing	**WELL CASING** Interval: 0-6.6 Material: Schedule 40 PVC Diameter: 2" Joint Type: Screw
	380	2.00 - 7.00 Residuum, Sand, reddish brown, micaceous, moist, non-cohesive.	SP		2.00				3/8" PEL-PLUG Bentonite Pellets	**WELL SCREEN** Interval: 6.6-16.6 Material: 0.010" Slotted Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: 16.6-17
5									FilterSil	**FILTER PACK** Interval: 5-18 Type: FilterSil
	375	7.00 - 27.00 BIOTITE GNEISS, slightly weathered to fresh, thinly bedded, white/black, phaneritic, strong.			375.2 7.00					**FILTER PACK SEAL** Interval: 2-5 Type: 3/8" PEL-PLUG Bentonite Pellets
10									0.010" Slotted Schedule 40 PVC	**ANNULUS SEAL** Interval: 0-2 Type: Portland Cement/Quikrete grout mix
	370									**WELL COMPLETION** Pad: 4'x4' Protective Casing: 4"x4"x5'
15										**DRILLING METHODS** Soil Drill: Rotosonic Rock Drill: Core
	365									
20										
	360									
25									3/8" PEL-PLUG Bentonite Pellets	
	355	Boring completed at 27.00 ft			355.2					
30										
	350									
35										
	345									
40										

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade
DRILLER: Matt Pope

GA INSPECTOR: David Hannam
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 5/31/18

GOLDER

BOREHOLE RECORD 1666254-01 (1)_SURVEY UPDATED.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-51S

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 50.00 ft
LOCATION: East of Coal Pile near Lake

DRILL RIG: 8140LC
DATE STARTED: 8/2/18
DATE COMPLETED: 8/2/18

NORTHING: 1,161,613.40
EASTING: 2,562,433.10
GS ELEVATION: 377.9
TOC ELEVATION: 380.27 ft

DEPTH W.L.: 35.6
ELEVATION W.L.: 342.3
DATE W.L.: 8/1/2018
TIME W.L.: 14:56:00

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0		0.00 - 10.00 Soil was hydrovacuumed to 10 feet.			367.9			
10		10.00 - 20.00 Silty SAND, reddish brown, fine to medium grained, some relic structure, micaceous, cohesive, w>PL, dry, loose	SM		10.00 357.9	S - 1	ROTO SONIC	3.70 / 10.00
20		20.00 - 30.00 Silty SAND, reddish brown with black sand intrusions, fine to medium grained, micaceous, non-cohesive, moist, loose	SM		20.00 347.9	S - 2	ROTO SONIC	9.10 / 10.00
30		30.00 - 35.00 silty to clayey SAND, reddish brown w/ black sand intrusions, fine to medium grain, micaecoues, non-cohesive, moist to wet	SC-SM		30.00 342.9	S - 3	ROTO SONIC	5.00 / 5.00
35		35.00 - 45.00 silty SAND, reddish brown, fine to medium grained, micaecous, non-cohesive, moist to wet	SM		35.00	S - 4	ROTO SONIC	10.00 / 10.00
40		Log continued on next page						

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES: Aquaguard Bentonite; Riser; Bentonite; #1 Sand; 0.010" Slotted Schedule 40

WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0'-50'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 40.0'-45.0'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 35.7'-47'
Type: #1 Sand

FILTER PACK SEAL
Interval: 45.4'-47.0'
Type: 3/8" PEL-PLUG

ANNULUS SEAL
Interval: 0'-33.2'
Type: AquaGuard Bentonite

WELL COMPLETION
Pad: 4' x 4'
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Geoprobe
Rock Drill: N/A

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Environmental, LLC
DRILLER: M.Rodriguez

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel Kirkman, PG
DATE: 9/6/18

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-51S

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 50.00 ft
LOCATION: East of Coal Pile near Lake

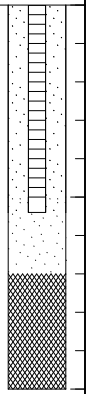
DRILL RIG: 8140LC
DATE STARTED: 8/2/18
DATE COMPLETED: 8/2/18

NORTHING: 1,161,613.40
EASTING: 2,562,433.10
GS ELEVATION: 377.9
TOC ELEVATION: 380.27 ft

DEPTH W.L.: 35.6
ELEVATION W.L.: 342.3
DATE W.L.: 8/1/2018
TIME W.L.: 14:56:00

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
40		35.00 - 45.00 silty SAND, reddish brown, fine to medium grained, micaecous, non-cohesive, moist to wet *(Continued)*	SM		332.9	S - 4	ROTO SONIC	10.00 / 10.00
45	335	45.00 - 50.00 high plastic CLAY with some sand, dark brown, fine to coarse sand, dark brown, cohesive, dry, firm to stiff	CH		45.00 327.9	S - 5	ROTO SONIC	5.00 / 5.00
50	330	Boring completed at 50.00 ft						
55	325							
60	320							
65	315							
70	310							
75	305							
80	300							

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0'-50'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 40.0'-45.0'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 35.7'-47'
Type: #1 Sand

FILTER PACK SEAL
Interval: 45.4'-47.0'
Type: 3/8" PEL-PLUG

ANNULUS SEAL
Interval: 0'-33.2'
Type: AquaGuard Bentonite

WELL COMPLETION
Pad: 4' x 4'
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Geoprobe
Rock Drill: N/A

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Environmental, LLC
DRILLER: M.Rodriguez

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel Kirkman, PG
DATE: 9/6/18

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-51I

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 65.00 ft
LOCATION: East of Pond B

DRILL RIG: 8140LC
DATE STARTED: 8/1/18
DATE COMPLETED: 8/1/18

NORTHING: 1,161,631.10
EASTING: 2,562,439.30
GS ELEVATION: 378.0
TOC ELEVATION: 380.52 ft

DEPTH W.L.: 35.20'
ELEVATION W.L.: 342.8
DATE W.L.: 8/3/2018
TIME W.L.: 08:33:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	SAMPLES TYPE	SAMPLES REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES
0		0.00 - 10.00 Soil was hydrovacuumed to 10 feet.			368				AquaGuard / Bentonite
5	375								
10	370	10.00 - 20.00 silty SAND, reddish brown with white mottling, fine to coarse, some relic structure, non-cohesive, dy, loose	SM		10.00 358	S - 1	ROTO SONIC	2.70 / 10.00	Riser
15	365								
20	360	20.00 - 25.00 silty SAND with trace gravel, fine to coarse	SM		20.00 353	S - 2	ROTO SONIC	4.00 / 5.00	
25	355	25.00 - 35.00 silty SAND with some boulders > 3inches, dark brown fine to coarse, non-cohesive, dry, loose to compact	SM		25.00 343	S - 3	ROTO SONIC	8.40 / 10.00	
30	350								
35	345	35.00 - 45.00 silty SAND, fine to coarse, relic granitic structure, micaecous, non-cohesive, moist, loose to compact	SM		35.00	S - 4	ROTO SONIC	5.50 / 10.00	
40	340	Log continued on next page							

WELL CASING
Interval: 0'-65'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 54.9-64.9'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 52.5'-65.0'
Type: #1 Sand

FILTER PACK SEAL
Interval: 49.2'-52.5'
Type: 3/8" PEL-PLUG

ANNULUS SEAL
Interval: 0'-49.2'
Type: Portland Cement and Quick Gel Bentonite Mix

WELL COMPLETION
Pad: 4' x 4'
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Geoprobe
Rock Drill: N/A

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Environmental, LLC
DRILLER: M. Rodriguez

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel Kirkman, PG
DATE: 9/6/18

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-51I

SHEET 2 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 65.00 ft
LOCATION: East of Pond B

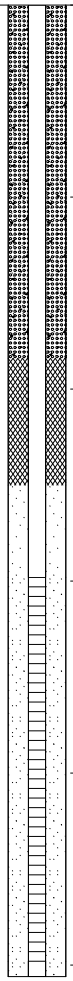
DRILL RIG: 8140LC
DATE STARTED: 8/1/18
DATE COMPLETED: 8/1/18

NORTHING: 1,161,631.10
EASTING: 2,562,439.30
GS ELEVATION: 378.0
TOC ELEVATION: 380.52 ft

DEPTH W.L.: 35.20'
ELEVATION W.L.: 342.8
DATE W.L.: 8/3/2018
TIME W.L.: 08:33:00

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
40		35.00 - 45.00 silty SAND, fine to coarse, relic granitic structure, micaecous, non-cohesive, moist, loose to compact *(Continued)*	SM			S - 4	ROTO SONIC	5.50 / 10.00
	335				333			
45		45.00 - 53.50 high plastic CLAY, clay with some sand, sand fine to medium, light reddish brown, cohesive, moist to wet, stiff	CH		45.00	S - 5	ROTO SONIC	8.50 / 8.50
	330							
50								
	325				324.5			
		53.50 - 55.00 silty Sand, reddish brown, relic foliation, micaceous, moist, loose to compact	SM		53.50 323	S - 6	ROTO SONIC	- / 6.50
55		55.00 - 58.00 Saprolte, silty SAND with some gravel, sand and gravel fine to coarse	SM		55.00 320			
	320	58.00 - 60.00 BIOTITE GNEISS, gravel, highly weathered, very weak dry	BR		58.00 318			
60		60.00 - 65.00 BIOTITE GNEISS, banded white with dark brown, large grained, highly weathered, strong	BR		60.00	S - 7	ROTO SONIC	3.10 / 5.00
	315				313			
65		Boring completed at 65.00 ft						
	310							
70								
	305							
75								
	300							
80								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0'-65'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 54.9-64.9'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 52.5'-65.0'
Type: #1 Sand

FILTER PACK SEAL
Interval: 49.2'-52.5'
Type: 3/8" PEL-PLUG

ANNULUS SEAL
Interval: 0'-49.2'
Type: Portland Cement and Quick Gel Bentonite Mix

WELL COMPLETION
Pad: 4' x 4'
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Geoprobe
Rock Drill: N/A

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Environmental, LLC
DRILLER: M. Rodriguez

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel Kirkman, PG
DATE: 9/6/18

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-52D

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 59.50 ft
LOCATION: 13' west of BRGWC-33S

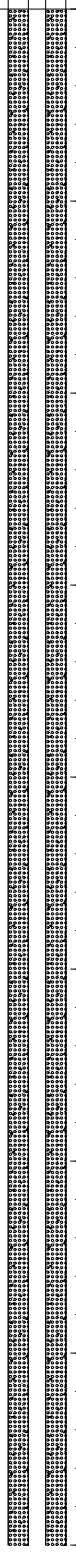
DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/14/20
DATE COMPLETED: 5/14/20

NORTHING: 1,168,053.90
EASTING: 2,554,051.70
GS ELEVATION: 414.3
TOC ELEVATION: 417.03 ft

DEPTH W.L.: 46.5
ELEVATION W.L.: 367.8
DATE W.L.: 5/15/2020
TIME W.L.: 0735

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0		0.00 - 10.00 Air knife hole, water level ~ 5 feet bgs from SCS during hole clearing			404.3			
10	405	10.00 - 11.00 silty CLAY, red 2.5 YR 5/8, wet, slightly plastic, cohesive, soft. Residual soil	CL		10.00 403.3			
		11.00 - 17.00 silty SAND, very fine to medium sand, 7.5 YR 4/6 strong brown, weathered biotite gneiss, SAPROLITE, subhorizontal foliation, micaceous, medium grained gneiss, moist to wet, cohesive, non-PLASTIC, firm. Poorly sorted medium grained sand (quartz and plagioclase) 0.1 ft thick lenses from 13 - 15.5 feet	SM		11.00 397.3	1	ROTO SONIC	10.00 7.00
15	400	17.00 - 20.00 silty SAND, very fine to medium sand, variegated white, brown, orange, very dark brown to black, SAPROLITE, weathered biotite gneiss, cohesive, stiff, non-plastic, mosit to wet. Quartz-plagioclase-biotite ferrous oxide oxidation throughout	SM		17.00 394.3			
20	395	20.00 - 28.00 SILTY SAND, very fine to medium sand, variegated white, brown, orange, very dark brown to black, SAPROLITE, weakly foliated, weatehred biotite gneiss, cohesive, stiff, non-plastic, mosit to wet quatz-plagioclase-biotite oxidation staining throughout	SM		20.00 386.3	2	ROTO SONIC	10.00 10.00
25	390	28.00 - 28.50 Transitional weathered rock (TWR), biotite gneiss	PWR		385.8 28.50			
30	385	28.50 - 37.00 BIOTITE GNEISS, medium grained, phaneritic hornblende-quartz-plagioclase-biotite. Foliation orientation varies from subhorizontal to near vertical, weakly foliated from 31.5-32 feet, oxidation staining throughout, white and black foliations at 31 ft, 32.5 ft, and 33.5 ft	GNIESS		377.3	3	ROTO SONIC	9.00 10.00
35	380	37.00 - 47.00 INTERLAYERED BIOTITE GNEISS AND TWR, poor recovery due to subsurface materials and drilling methodology, rock recovered is oxidized throughout and appears less coherent section above, fractured	GNIESS		37.00	4	ROTO SONIC	2.50 10.00
40	375	Log continued on next page						

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 49.5'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 49.5' - 59.5'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2
Slot Size: 0.10
End Cap: 4"

FILTER PACK
Interval: 47' - 59.5'
Type: #1 Sand

FILTER PACK SEAL
Interval: 43' - 47'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 43'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fref Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Rachel Kirkman, PG
DATE: 6/23/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-52D

SHEET 2 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 59.50 ft
LOCATION: 13' west of BRGWC-33S

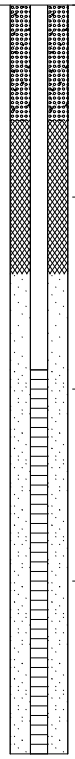
DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/14/20
DATE COMPLETED: 5/14/20

NORTHING: 1,168,053.90
EASTING: 2,554,051.70
GS ELEVATION: 414.3
TOC ELEVATION: 417.03 ft

DEPTH W.L.: 46.5
ELEVATION W.L.: 367.8
DATE W.L.: 5/15/2020
TIME W.L.: 0735

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
40		37.00 - 47.00 INTERLAYERED BIOTITE GNEISS AND TWR, poor recovery due to subsurface materials and drilling methodology, rock recovered is oxidized throughout and appears less coherent section above, fractured *(Continued)*	GNIESS		367.3	4	ROTO SONIC	2.50 10.00
45	370							
		47.00 - 59.50 BIOTITE GNEISS, medium grained, phaneritic hornblende-quartz-plagioclase-biotite, foliation orientation varies overall ~ 45 degrees from horizontal, weakly foliated, fractures/oxidation, minor oxidation at 50 ft, 51.5 ft, and 54.5 ft	GNIESS		47.00	5	ROTO SONIC	10.00
50	365							
55	360							
						6	ROTO SONIC	2.50 2.50
60	355	Boring completed at 59.50 ft			354.8			
65	350							
70	345							
75	340							
80	335							

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 49.5'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 49.5' - 59.5'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2
Slot Size: 0.10
End Cap: 4"

FILTER PACK
Interval: 47' - 59.5'
Type: #1 Sand

FILTER PACK SEAL
Interval: 43' - 47'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 43'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fref Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Rachel Kirkman, PG
DATE: 6/23/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-53D

SHEET 1 of 4

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 144.00 ft
LOCATION: 28' west of BRGWC-38S

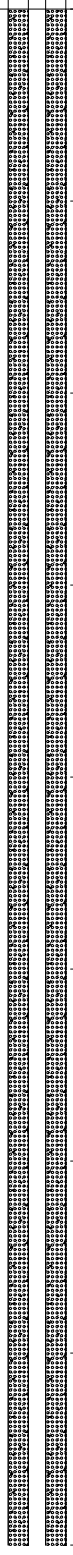
DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/16/20
DATE COMPLETED: 5/17/20

NORTHING: 1,164,393.80
EASTING: 2,554,984.30
GS ELEVATION: 431.6
TOC ELEVATION: 434.68 ft

DEPTH W.L.: 14.2'
ELEVATION W.L.: 417.4
DATE W.L.: 5/19/2020
TIME W.L.: 745

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	430	0.00 - 10.00 HYDROVAC HOLE, ML, SILT, red, plastic to slightly plastic, cohesive, firm to stiff, dry to moist			421.6			
10	420	10.00 - 15.00 ML, clayey sandy SILT, fine sand, micaceous throughout, red, very weak foliation, trace relict foliation, non-plastic to slightly plastic, soft, dry to moist, primarily very weathered biotite gneiss SAPROLITE	ML		10.00 416.6	1	ROTO SONIC	10.00 10.00
15	415	15.00 - 19.00 SM, silty SAND, very fine to fine sand, weakly foliated, cohesive, soft, non-plastic, moist, primarily very weathered metagranite	SM		15.00 412.6			
20	410	19.00 - 29.00 ML, clayey sandy SILT, ine sand, micaceous throughout, red, very weak foliation, trace relict foliation, non-plastic to slightly plastic, soft, dry to moist, primarily metagranite SAPROLITE 18'-20', biotite gneiss 20'-23.5', metagranite 23.5'-29'	ML		19.00 402.6	2	ROTO SONIC	10.00 10.00
30	400	29.00 - 39.00 ML, clayey sandy SILT, fine sand, pale brown orange dark brown to black, subhorizontal foliation, moderately foliated, quartz-plagioclase-biotite, cohesive, soft to firm, wet, SM; 29'-30' and 34'-35'	ML		29.00 392.6	3	ROTO SONIC	12.50 10.00
40	390	Log continued on next page	SP		39.00	4		14.00 10.00

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 129.4'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 129.4' - 139.4'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 126.6' - 140'
Type: #1 Sand

FILTER PACK SEAL
Interval: 121' - 126.6'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 121'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Brian Steele, PG
DATE: 6/23/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-53D

SHEET 2 of 4

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 144.00 ft
LOCATION: 28' west of BRGWC-38S

DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/16/20
DATE COMPLETED: 5/17/20

NORTHING: 1,164,393.80
EASTING: 2,554,984.30
GS ELEVATION: 431.6
TOC ELEVATION: 434.68 ft

DEPTH W.L.: 14.2'
ELEVATION W.L.: 417.4
DATE W.L.: 5/19/2020
TIME W.L.: 745

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL / PIEZOMETER DIAGRAM and NOTES
40		39.00 - 42.00 SP, SAND, poorly graded, sme silt, medium to coarse sand, reddish brown, subangular to angular, non-cohesive, non-plastic, loose, moist to wet.	SP		389.6	4	ROTO SONIC	14.00 10.00	
	390	39.8'-42' SAPROLITE, biotitte gneiss with granite interlayers, moderately foliated, white to pale brown to yellowish brown to very dark brown, medium to coarse grained, little to some oxidation, moist, cohesive, non-plastic, very stiff *(Continued)*			42.00				
45		42.00 - 49.00 CL/CH, sandy CLAY, dary grayish brown with interlayers of white, very stiff to hard, moist, plastic, weathered biotite gneiss	CL-CH						
	385				382.6				
50		49.00 - 53.00 SM, silty SAND, fine to medium sand, with clay, brown, weathered gneiss, quartz-plagioclase-biotite, weakly foliated, very stiff to hard, non-plastic, moist	SM		49.00 378.6	5	ROTO SONIC	10.50 10.00	
	380	53.00 - 63.00 SM, silty clayey SAND, fine to coarse sand, subangular to angular, brown, weathered gneiss quartz-plagioclase-biotite, medium grained, subhorizontal foliation, cohesive, stiff to very stiff, moist, non-plastic to plastic, SAPROLITE			53.00				
55									
	375		SM						
60						6	ROTO SONIC	12.00 10.00	
	370				368.6				
		63.00 - 65.00 CL, silty sandy CLAY, fine sand, brown to light olive brown, weathered gneiss, micaceous, moderately to weakly foliated, cohesive, plastic, moist to wet, w~PL, firm to very stiff	CL		63.00 366.6				
65		65.00 - 69.00 SM, silty SAND, very fine to medium sand, pale brown, slightly weathered to weathered gneiss biotite-quartz-plagioclase/feldspar	SM		65.00 362.6				
	365								
70		69.00 - 70.00 SP-SM, Sand with Silt, very fine to medium sand, poorly graded, weathered biotite gneiss, weakly foliated to no foliation, dark grayish brown, wet, loose, non-plastic	SP-SM		69.00 361.6	7	ROTO SONIC	5.50 4.50	
	360	70.00 - 73.50 ML, clayey sandy SILT, fine to medium sand, angular, brown to dark grayish brown, dry to moist, non-plastic	ML		70.00				
		73.00 - 75.00 SP-SM, Sand with Silt, very fine to coarse sand, poorly graded, not foliated, weathered biotite gneiss	SP-SM		358.1 356.6				
75		75.00 - 79.00 SM, silty SAND, fine to coarse sand, TWR/SAPROLITE, interlayered SM and TWR, feldspathic biotite gneiss, coarse gravel throughout, firm to very hrd, dry	SM		75.00 352.6	8	ROTO SONIC	6.50 5.50	
	355								
80		Log continued on next page	ML		79.00	9		9.50 10.00	

WELL CASING
Interval: 0' - 129.4'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 129.4' - 139.4'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 126.6' - 140'
Type: #1 Sand

FILTER PACK SEAL
Interval: 121' - 126.6'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 121'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Brian Steele, PG
DATE: 6/23/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-53D

SHEET 3 of 4

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 144.00 ft
LOCATION: 28' west of BRGWC-38S

DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/16/20
DATE COMPLETED: 5/17/20

NORTHING: 1,164,393.80
EASTING: 2,554,984.30
GS ELEVATION: 431.6
TOC ELEVATION: 434.68 ft

DEPTH W.L.: 14.2'
ELEVATION W.L.: 417.4
DATE W.L.: 5/19/2020
TIME W.L.: 745

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	SAMPLES TYPE	SAMPLES REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES
80		79.00 - 85.00 ML, sandy SILT, fine to medium sand, angular, brown, subhorizontal foliation, wet from drilling *(Continued)*	ML		346.6	9	ROTO SONIC	9.50 / 10.00	
85	350	85.00 - 89.00 SM, silty SAND, fine to coarse sand, some gravel, weathered felspathic biotite gneiss, SAPROLITE/TWR	SM		85.00 342.6				
90	345	89.00 - 93.00 ML, clayey sandy SILT, very fine to medium sand, subanglar to angular, dark grayish brown to grayish brown, fain foliation	ML		89.00 338.6	10	ROTO SONIC	8.00 / 10.00	
95	340	93.00 - 99.00 SM, silty SAND, very fine to coarse sand, pale brown, weakly foliated, weathered geniss, SAPROLITE	SM		93.00 332.6				
100	335	99.00 - 102.50 ML, sandy SILT, and silty SAND, veryfine to medium sand, grayish brown to brown, not foliated, very weathered feldspathic geniss, non-plastic to slightly plastic, firm, wet, SAPROLITE	ML		99.00 329.1	11	ROTO SONIC	7.00 / 10.00	
105	330	102.50 - 105.00 SM, silty SAND, very fine to coarse sand, some gravel, subangular to angular, pale brown, weathered gneiss, relict foliation, moderate foliation, hard, non-plastic, dry	SM		102.50 326.6				
110	325	105.00 - 109.00 No recovery			105.00 322.6				
115	320	109.00 - 113.00 ML/SM, sandy SILT and silty SAND, very fine to medium sand, grayish brown to brown, no foliation wet, non-plastic to plastic,	ML		109.00 318.6	12	ROTO SONIC	6.00 / 10.00	
		113.00 - 115.00 SM, silty SAND, fine to coarse sand, weathered gneiss, weakly foliated, hard, SAPROLITE	SM		113.00 316.6				
120	315	115.00 - 119.00 No recovery			115.00 312.6				
		Log continued on next page	ML		119.00	13		9.50 / 10.00	

WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 129.4'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 129.4' - 139.4'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 126.6' - 140'
Type: #1 Sand

FILTER PACK SEAL
Interval: 121' - 126.6'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 121'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Brian Steele, PG
DATE: 6/23/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-53D

SHEET 4 of 4

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 144.00 ft
LOCATION: 28' west of BRGWC-38S

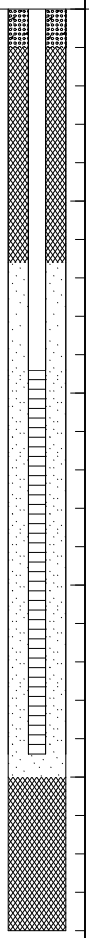
DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/16/20
DATE COMPLETED: 5/17/20

NORTHING: 1,164,393.80
EASTING: 2,554,984.30
GS ELEVATION: 431.6
TOC ELEVATION: 434.68 ft

DEPTH W.L.: 14.2'
ELEVATION W.L.: 417.4
DATE W.L.: 5/19/2020
TIME W.L.: 745

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
120		119.00 - 122.50 ML/SM, sandy SILT and silty SAND, very fine to medium sand, some coarse sand, some weathered gneiss cobbles up to 1.5", dark grayish brown, no foliation, biotite gneiss cobbles are weakly foliated, cohesive, non-plastic to slightly plastic, soft to hard, wet *(Continued)*	ML		309.1			
	310	122.50 - 127.00 SM, silty SAND, fine to coarse sand, weathered gneiss, weakly foliated, hard, SAPROLITE	SM		122.50	13	ROTO SONIC	9.50 / 10.00
125					304.6			
	305	127.00 - 129.00 ML/SM, sandy SILT and silty SAND, very fine to medium sand, some coarse sand, some weathered gneiss cobbles up to 1.5", dark grayish brown, no foliation, biotite gneiss cobbles are weakly foliated, cohesive, non-plastic to slightly plastic, soft to hard, wet	ML		127.00 302.6			
130		129.00 - 131.00 ML, clayey sandy SILT	ML		129.00 300.6			
	300	131.00 - 138.00 SM, silty SAND, fine and medium sand, gray to dark olive gray, interlayered weathered biotite gneiss and amphibolite, SAPROLITE	SM		131.00	14	ROTO SONIC	10.00 / 10.00
135					293.6			
	295	138.00 - 139.00 TWR, transitionally weathered rock, weathered biotite gneiss	TWR		138.00 292.6			
140		139.00 - 144.00 BR, Biotite Gneiss, medium grained, quartz-hornblende-plagioclase, oxidation and fracture zone at 142'-143.5'	BR		139.00	15	ROTO SONIC	5.00 / 5.00
	290				287.6			
		Boring completed at 144.00 ft						
145								
	285							
150								
	280							
155								
	275							
160								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 129.4'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 129.4' - 139.4'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 126.6' - 140'
Type: #1 Sand

FILTER PACK SEAL
Interval: 121' - 126.6'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 121'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Brian Steele, PG
DATE: 6/23/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-54

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 52.00 ft
LOCATION: SE of Pond E

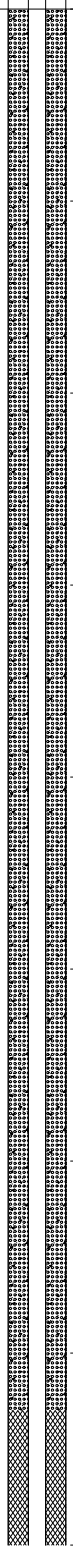
DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/15/20
DATE COMPLETED: 5/15/20

NORTHING: 1,164,828.70
EASTING: 2,555,458.30
GS ELEVATION: 440.8
TOC ELEVATION: 443.86 ft

DEPTH W.L.: 41.4'
ELEVATION W.L.: 399.4
DATE W.L.: 5/16/2020
TIME W.L.: 735

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	440	0.00 - 7.00 CL, silty sandy CLAY, medium to coarse sand, angular quartz, red, mottled texture, trace fine gravel, subrounded to subangular, deeply weathered, plagioclase, firm to stiff, dry to moist, RESIDUUM	CL		433.8	1	ROTO SONIC	3.00 / 7.00
5	435	7.00 - 13.00 CL, silty CLAY some sand, fine to medium sand, angular to subangular, yellowish red, no structure, quartz and plagioclase, RESIDUUM	CL		7.00 427.8	2	ROTO SONIC	10.00 / 10.00
10	430	13.00 - 17.00 SM, silty SAND, fine to medium sand, anugular to subangular, light red to red, weak foliation, weathered to very weathered feldspathic biotite gneiss with sodium-plagioclase to potassium feldspar, quartz, little to trace mica, cohesive, non-plastic, firm to moist, dry, RESIDUUM	SM		13.00 423.8			
15	425	17.00 - 19.00 ML, clayey sandy SILT, red, mica rich, deeply weathered, feldspathic biotite gneiss, cohesive, slightly plastic, moist, RESIDUUM	ML		17.00 421.8	3	ROTO SONIC	10.00 / 10.00
20	420	19.00 - 28.00 SM, silty SAND, fine to medium sand, light red to red, weak foliation, weathered to very weathered feldspathic biotite gneiss, moist, cohesive, non-plastic to slightly plastic, firm, SAPROLITE	SM		19.00 412.8			
25	415	28.00 - 37.00 SM, silty SAND, fine to medium sand, light brown to ligh reddish brown, weathered to very weathered, feldspathic biotite gneiss, foliated to weakly foliated, non plastic, firm, oxidation at 28', SAPROLITE	SM		28.00 403.8	4	ROTO SONIC	9.50 / 10.00
30	410							
35	405	37.00 - 48.00 SM, clayey silty SAND, fine sand, pale brown, weathered feldspathic biotite gneiss, quartz-biotite-plagioclase, trace to little oxidation/mottling throughout, foliated to weakly foliated, moist, cohesive, non-plastic, stiff, SAPROLITE	SM		37.00	5	ROTO SONIC	10.00 / 10.00
40		Log continued on next page						

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 42'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 42' - 52'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 40' - 52'
Type: #1 Sand

FILTER PACK SEAL
Interval: 36.5' - 40'
Type: Pel-Plug 3/8"

ANNULUS SEAL
Interval: 0' - 36.5'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: N/A

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Brian Steele, PG
DATE: 6/23/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-54

SHEET 2 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 52.00 ft
LOCATION: SE of Pond E

DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/15/20
DATE COMPLETED: 5/15/20

NORTHING: 1,164,828.70
EASTING: 2,555,458.30
GS ELEVATION: 440.8
TOC ELEVATION: 443.86 ft

DEPTH W.L.: 41.4'
ELEVATION W.L.: 399.4
DATE W.L.: 5/16/2020
TIME W.L.: 735

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
40	400	37.00 - 48.00 SM, clayey silty SAND, fine sand, pale brown, weathered feldspathic biotite gneiss, quartz-biotite-plagioclase, trace to little oxidation/mottling throughout, foliated to weakly foliated, moist, cohesive, non-plastic, stiff, SAPROLITE *(Continued)*	SM		392.8	5	ROTO SONIC	10.00 / 10.00	#1 Sand 0.010" Slotted Screen	**WELL CASING** Interval: 0' - 42' Material: Sch 40 PVC Diameter: 2" Joint Type: Threaded **WELL SCREEN** Interval: 42' - 52' Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen Diameter: 2" Slot Size: 0.010" End Cap: 3" **FILTER PACK** Interval: 40' - 52' Type: #1 Sand **FILTER PACK SEAL** Interval: 36.5' - 40' Type: Pel-Plug 3/8" **ANNULUS SEAL** Interval: 0' - 36.5' Type: AquaGuard Bentonite Grout **WELL COMPLETION** Pad: 4' x 4' x 2" Protective Casing: Aluminum **DRILLING METHODS** Soil Drill: Sonic Rock Drill: N/A
45	395									
50	390	48.00 - 52.00 TWR, weathered feldspathic biotite gneiss interlayered with unweathered feldspathic biotite gneiss, coarse grained, foliated to weakly foliated, some oxidation staining	TWR		48.00 388.8	6	ROTO SONIC	5.00 / 5.00		
		Boring completed at 52.00 ft								
55	385									
60	380									
65	375									
70	370									
75	365									
80										

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Brian Steele, PG
DATE: 6/23/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-55

SHEET 1 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 49.30 ft
LOCATION: SE of Pond E

DRILL RIG: TSI Compact Crawler
DATE STARTED: 5/19/20
DATE COMPLETED: 5/19/20

NORTHING: 1,163,208.00
EASTING: 2,554,783.60
GS ELEVATION: 450.2
TOC ELEVATION: 453.07 ft

DEPTH W.L.: 45.3'
ELEVATION W.L.: 404.9
DATE W.L.: 5/20/2020
TIME W.L.: 740

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	450	0.00 - 8.00 CL, silty CLAY, some sand, fine to medium sand, quartz angular, dark red, cohesive, slightly plastic to plastic, dry to moist, w<PL, firm to stiff, RESIDUUM	CL	442.2	1	ROTO SONIC	9.00 9.00
		8.00 - 9.50 ML, sandy SILT, very fine to fine sand, red to dark red, weathered gneiss, foliated, quartz-weathered plagioclase/feldspar and biotite, medium grained gneiss, moist, non-plastic, cohesive, firm, SAPROLITE	ML	8.00 440.7			
10	440	9.50 - 12.00 SM, silty SAND, fine to coarse sand, quartz angular, red, loose, non-plastic, moist to wet, SAPROLITE	SM	9.50 438.2	2	ROTO SONIC	8.00 10.00
		12.00 - 39.50 SM, silty SAND, fine to medium sand, weathered feldspathic biotite gneiss, weakly foliated, subhorizontal, non-cohesive, non-plastic, loose to compact, SAPROLITE		12.00			
15	435						
20	430	oxidation/mottling at 28.5' to 31'			3	ROTO SONIC	7.00 10.00
25	425		SM				
30	420				4	ROTO SONIC	10.00 10.00
35	415						
				410.7	5		10.30 10.30
40		Log continued on next page	SP-SM	39.50			

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES: AquaGuard Bentonite Grout; Riser; Bentonite

WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 39.3'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 39.3' - 49.3'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 36.4' - 49.3'
Type: #1 Sand

FILTER PACK SEAL
Interval: 34' - 36.4'
Type: Pel-Plug 3/8"

ANNULUS SEAL
Interval: 0' - 34'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Brian Steele, PG
DATE: 6/24/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-55

SHEET 2 of 2

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 49.30 ft
LOCATION: SE of Pond E

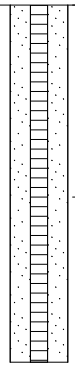
DRILL RIG: TSI Compact Crawler
DATE STARTED: 5/19/20
DATE COMPLETED: 5/19/20

NORTHING: 1,163,208.00
EASTING: 2,554,783.60
GS ELEVATION: 450.2
TOC ELEVATION: 453.07 ft

DEPTH W.L.: 45.3'
ELEVATION W.L.: 404.9
DATE W.L.: 5/20/2020
TIME W.L.: 740

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC
40	410	39.50 - 41.00 SP-SM, poorly graded Sand with Silt, very fine to fine sand, little fine gravel, moist to wet, grayish brown, loose to compact, non-plastic *(Continued)*	SP-SM		409.2			
			ML		41.00 408.2			
		41.00 - 42.00 ML, sandy SILT, very fne to fine sand, pale brown, moist, firm, non-plastic, moderate fliation, SAPROLITE			42.00			
45	405	42.00 - 46.00 SP, SAND, fine sand, brown, poorly graded, moist to wet, loose to compact, non-plastic, SAPROLITE	SP		404.2	5	ROTO SONIC	10.30 10.30
		46.00 - 48.50 ML, sandy SILT, fine sand, weathered gneiss, feldspathic biotite gneiss, moderate foliation, cohesive, firm to stiff, non-plastic, moist to wet, SAPROLITE	ML		46.00 401.7			
50	400	48.50 - 49.00 TWR, transtionally weathered rock, weathered biotite gneiss, medium grained	TWR BR		401.2			
		49.00 - 49.30 BR, Biotite Gneiss, medium grained, moderate foliation, hornblende-quartz-biotite-plagioclase						
		Boring completed at 49.30 ft						
55	395							
60	390							
65	385							
70	380							
75	375							
80								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 39.3'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 39.3' - 49.3'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 36.4' - 49.3'
Type: #1 Sand

FILTER PACK SEAL
Interval: 34' - 36.4'
Type: Pel-Plug 3/8"

ANNULUS SEAL
Interval: 0' - 34'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Brian Steele, PG
DATE: 6/24/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Location resurveyed June - July 2020

RECORD OF BOREHOLE PZ-56

SHEET 1 of 1

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 29.00 ft
LOCATION: SE of Pond E

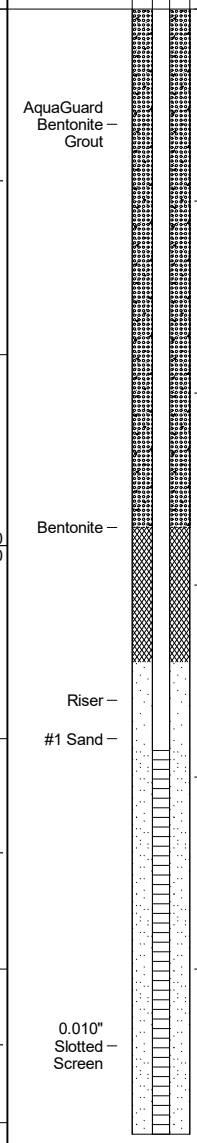
DRILL RIG: TSI Compact Crawler
DATE STARTED: 5/20/20
DATE COMPLETED: 5/20/20

NORTHING: 1,162,965.10
EASTING: 2,554,086.30
GS ELEVATION: 416.2
TOC ELEVATION: 418.84 ft

DEPTH W.L.: 5.35
ELEVATION W.L.: 410.85
DATE W.L.: 6/2/2020
TIME W.L.: 1146

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	415	0.00 - 6.00 Cl, silty CLAY, dark red, moist, no structure, mica flakes thoughout, cohesive, plastic, firm to stiff, w<PL, RESIDUUM	CL		410.2 / 6.00	1	ROTO SONIC	9.00 / 9.00
5	410	6.00 - 14.00 CL, silty CLAY, trace fine sand, yellowish orange, to pale brown, no structure, mottled, cohesive, moist, very stiff, plastic, w<PL, RESIDUUM	CL		402.2 / 14.00	2	ROTO SONIC	10.00 / 10.00
10	405	14.00 - 15.00 SM, silty clayey SAND, fine sand, yellowish red, moist to wet, mottled, compact to dense, non-plastic, RESIDUUM	SM		401.2 / 15.00			
15	400	15.00 - 18.00 CL, silty CLAY, little fine sand, red to pale brown to yellowish red, mottled, moist, plastic, stiff to very stiff, w>PL, RESIDUUM	CL		398.2 / 18.00			
20	395	18.00 - 24.50 SM, silty clayey SAND, fine sand, yellowish red, moist to wet, mottled, compact to dense, non-plastic, RESIDUUM	SM		391.7 / 24.50	3	ROTO SONIC	3.50 / 6.00
25	390	24.50 - 25.00 TWR, slightly weathered biotite gneiss, quartz-hornblende-plagioclase-biotite	TWR		391.2 / 25.00	4	ROTO SONIC	4.00 / 4.00
		25.00 - 29.00 BR, Interlayered Biotite Gneiss and Amphibolite, primarily biotite gneiss, feldspathic, quartz-hornblende-potassium fledspar-plagioclase-biotite, medium to coarse grained, weak subhorizontal foliation 25.7'-26.5' Amphibolite, fine grained, very dark green to black, weakly foliated, quartz-plagioclase-biotite-hornblende	BR		387.2			
30	385	Boring completed at 29.00 ft						
35	380							
40								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 19.3'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 19.3' - 29.3'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 17' - 29.3'
Type: #1 Sand

FILTER PACK SEAL
Interval: 13.5' - 17'
Type: Pel-Plug 3/8"

ANNULUS SEAL
Interval: 0' - 13.5'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George
CHECKED BY: Brian Steele, PG
DATE: 6/24/20

GOLDER

BOREHOLE RECORD PLANT_BRANCH_20200603_SURVEY UPDATED-ATL1-L-BSTEELE.GPJ PIEDMONT.GDT 8/21/20

Boring log revised with new survey data dated 7/23/2020.

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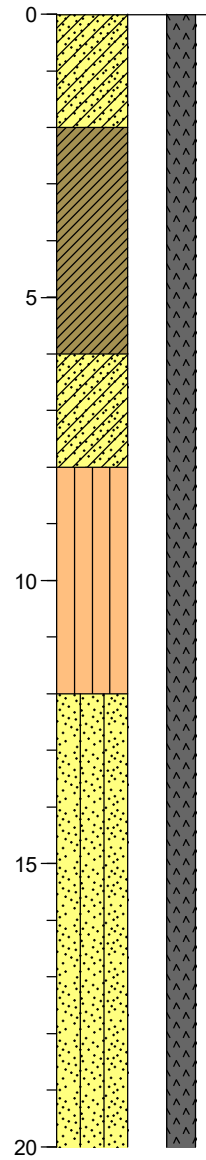
Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-1S/PB-1
Page: 1 of 5

Drilling Start Date:	01/18/2019	Boring Depth (ft):	96	Well Depth (ft):	38/NA
Drilling End Date:	01/22/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	24.54/NA	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	24.4/NA	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	CME-550	Top of Casing Elev. (ft)	403.16/NA	Sanitary Seal:	Bentonite Chips/Pellets
Driller:	Stan White	Ground Elev. (ft):	400.4/NA	Filter Pack:	Sand
Logged By:	Joseph Ivanowski	Location (X,Y):	1164910.5, 2556355.9	Sampling Method(s):	SS/SH/CO



DEPTH (ft)	Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	Lab Sample	ELEV. (ft msl)
0	SS	0.58	1 1 1 1	2	(0') Clayey SAND (SC); moist, reddish-brown, organic material.	PB-1 (0-2)	400
	SS	1.66	1 3 4 5	7	(2') Sandy lean CLAY (CL); medium plasticity, medium stiff, dry, reddish-brown, micaceous, some quartz gravel in lenses.	PB-1 (2-4)	
5	SS	2	3 5 8 9	13		PB-1 (4-6)	395
	SS	2	3 3 5 5	8	(6') Clayey SAND (SC); mostly medium grained sand, few coarse gravel, few clay, medium dense, dry, light reddish-brown, some coarse quartz sand lenses.	PB-1 (6-8)	
	SS	1.84	2 3 4 7	7	(8') SILT (ML); mostly silt, nonplastic, medium stiff, dry, yellowish-brown, small iron oxide concretions throughout (10 mm).	PB-1 (8-10)	
10	SS	1.84	3 4 5 5	9	(10') SILT (ML); mostly silt, nonplastic, medium stiff, dry, yellowish-brown, small iron oxide concretions throughout (10 mm), more fine sand and mica.	PB-1 (10-12)	390
	SS	2	3 4 5 6	9	(12') Silty SAND (SM); medium dense, dry, pale reddish-brown, weak relict structure, micaceous, some gravel quartz lenses.	PB-1 (12-14)	
	SS	2	4 3 5 6	8		PB-1 (14-16)	
15	SS	1.66	3 5 7 7	12	(16') Silty SAND (SM); dense, moist, pale reddish-brown, relict rock structure more evident, micaceous, some gravel quartz lenses.	PB-1 (16-18)	385
	SS	2	4 4 6 7	10		PB-1 (18-20)	
20							

NOTES: PB-1S is a stickup well located ~10ft away from PB-1 borehole.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-1S/PB-1
Page: 2 of 5

Drilling Start Date:	**01/18/2019**	Boring Depth (ft):	**96**	Well Depth (ft):	**38/NA**
Drilling End Date:	**01/22/2019**	Boring Diameter (in):	**6.50**	Well Diam. (in)/Screen Slot (in):	**2.0/0.010**
Drilling Company:	**Thompson Engineering**	Static Water Level (ft):	**24.54/NA**	Riser Material:	**Sch 40 PVC**
Drilling Method:	**Hollow Stem Auger**	DTW After Drilling (ft):	**24.4/NA**	Screen Material:	**Sch 40 PVC Slotted**
Drilling Equipment:	**CME-550**	Top of Casing Elev. (ft)	**403.16/NA**	Sanitary Seal:	**Bentonite Chips/Pellets**
Driller:	**Stan White**	Ground Elev. (ft):	**400.4/NA**	Filter Pack:	**Sand**
Logged By:	**Joseph Ivanowski**	Location (X,Y):	**1164910.5, 2556355.9**	Sampling Method(s):	**SS/SH/CO**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
20				SH	2				PB-1 (20-22)	380
				SS	2	4 6 7 8	13	(22') Silty SAND (SM); dense, moist, pale reddish-brown, micaceous with relict rock fabric.	PB-1 (22-24)	
				SS	2	5 8 11 15	19	(24') Silty SAND (SM); dense, wet, pale reddish-brown, micaceous with relict rock fabric, weathered quartz lens at 25.5 ft.	PB-1 (24-26)	
25										375
				SS	2	6 11 20 24	31		PB-1 (26-28)	
				SS	1.34	17 36 50/4	86	(28') Silty SAND (SM); dense, wet, pale reddish-brown, material becoming harder, more rock like, highly weathered Gneiss. (28') Top of PWR.	PB-1 (28-30)	
30				SS	1.26	11 37 50	87		PB-1 (30-32)	370
								(32') Switched to 5ft-center for SPT (SS) sampling due to PWR.		
35				SS	1.58	16 37 40 38	77	(35') Weathered Gneiss, abundant quartz, mica with biotite.	PB-1 (35-37)	365
40										

NOTES: PB-1S is a stickup well located ~10ft away from PB-1 borehole.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-1S/PB-1
Page: 3 of 5

Drilling Start Date:	**01/18/2019**	Boring Depth (ft):	**96**	Well Depth (ft):	**38/NA**
Drilling End Date:	**01/22/2019**	Boring Diameter (in):	**6.50**	Well Diam. (in)/Screen Slot (in):	**2.0/0.010**
Drilling Company:	**Thompson Engineering**	Static Water Level (ft):	**24.54/NA**	Riser Material:	**Sch 40 PVC**
Drilling Method:	**Hollow Stem Auger**	DTW After Drilling (ft):	**24.4/NA**	Screen Material:	**Sch 40 PVC Slotted**
Drilling Equipment:	**CME-550**	Top of Casing Elev. (ft)	**403.16/NA**	Sanitary Seal:	**Bentonite Chips/Pellets**
Driller:	**Stan White**	Ground Elev. (ft):	**400.4/NA**	Filter Pack:	**Sand**
Logged By:	**Joseph Ivanowski**	Location (X,Y):	**1164910.5, 2556355.9**	Sampling Method(s):	**SS/SH/CO**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
40				SS	0	19 39 50/5	89		PB-1 (40-42)	360
45				SS	0.92	15 45 50/4	95	(45') Silty SAND (SM); very dense, wet, mottled, weathered Gneiss with quartz, biotite, and feldspar.	PB-1 (45-47)	355
50				SS	0.34	31 50/5	50		PB-1 (50-52)	350
55				SS	0.5	50/5		(55') No bag sample collected.		345
60										

NOTES: PB-1S is a stickup well located ~10ft away from PB-1 borehole.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-1S/PB-1
Page: 4 of 5

Drilling Start Date:	**01/18/2019**	Boring Depth (ft):	**96**	Well Depth (ft):	**38/NA**
Drilling End Date:	**01/22/2019**	Boring Diameter (in):	**6.50**	Well Diam. (in)/Screen Slot (in):	**2.0/0.010**
Drilling Company:	**Thompson Engineering**	Static Water Level (ft):	**24.54/NA**	Riser Material:	**Sch 40 PVC**
Drilling Method:	**Hollow Stem Auger**	DTW After Drilling (ft):	**24.4/NA**	Screen Material:	**Sch 40 PVC Slotted**
Drilling Equipment:	**CME-550**	Top of Casing Elev. (ft)	**403.16/NA**	Sanitary Seal:	**Bentonite Chips/Pellets**
Driller:	**Stan White**	Ground Elev. (ft):	**400.4/NA**	Filter Pack:	**Sand**
Logged By:	**Joseph Ivanowski**	Location (X,Y):	**1164910.5, 2556355.9**	Sampling Method(s):	**SS/SH/CO**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
60				SS	0.16	44 50/4	50	(60') No bag sample collected.		340
65				SS	5.5	50/2		(65') Silty SAND (SM); very dense, wet, some coarse quartz sand, weathered Gneiss with relict banding, quartz, feldspar, and biotite. PWR becomes more competent. Very slow drilling, effective auger refusal at 67ft. (67') Began mud rotary drilling.		335
70								(72') No bag sample collected.		330
75										325
80								(79') Very hard drilling.		

NOTES: PB-1S is a stickup well located ~10ft away from PB-1 borehole.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-1S/PB-1
Page: 5 of 5

Drilling Start Date:	**01/18/2019**	Boring Depth (ft):	**96**	Well Depth (ft):	**38/NA**
Drilling End Date:	**01/22/2019**	Boring Diameter (in):	**6.50**	Well Diam. (in)/Screen Slot (in):	**2.0/0.010**
Drilling Company:	**Thompson Engineering**	Static Water Level (ft):	**24.54/NA**	Riser Material:	**Sch 40 PVC**
Drilling Method:	**Hollow Stem Auger**	DTW After Drilling (ft):	**24.4/NA**	Screen Material:	**Sch 40 PVC Slotted**
Drilling Equipment:	**CME-550**	Top of Casing Elev. (ft)	**403.16/NA**	Sanitary Seal:	**Bentonite Chips/Pellets**
Driller:	**Stan White**	Ground Elev. (ft):	**400.4/NA**	Filter Pack:	**Sand**
Logged By:	**Joseph Ivanowski**	Location (X,Y):	**1164910.5, 2556355.9**	Sampling Method(s):	**SS/SH/CO**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
80								Top of competent rock at 81.5		320
				CO	4.5		100	(81.5') MET ROCK (GNEISS); coarse grained, moderately bedded, fresh, hard, slightly fractured, dark gray to white, poorly jointed, few low angle fractures, abundant qzt, feldspar phenocrysts or augen, biotite, pyroxene, little evidence of water flow in fractures at 82.3, 82.7, 84.5, and 87 ft. Cable tool (rock coring) started at 81.5 ft below ground surface.		
85								Fractures at 82.3 and 82.7		315
								Fracture at 84.5		
				CO	4.5		100	Fracture at 87		
90										310
				CO	1.3		100			
95										305
								(96') Boring terminated. Well installed on 01/24/2019		
100										

NOTES: PB-1S is a stickup well located ~10ft away from PB-1 borehole.
NA = Not Applicable

Easting and Northing in NAD 83.
Elevation in NAVD 88.

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-2D
Page: 1 of 4

Drilling Start Date:	11/29/2018	Boring Depth (ft):	61	Well Depth (ft):	57
Drilling End Date:	12/04/2018	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	39.50	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	12.40	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	416.71	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	414.9	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1164853.6, 2556914.2	Sampling Method(s):	SS/SH/CO

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
0				SS	2	3 3 4 3	7	(0') Elastic SILT (MH); few medium sand, mostly silt, low plasticity, soft, moist, reddish, abundant mica.		
				SS	2	1 1 1 1	2	(2') Elastic SILT (MH); few medium sand, mostly silt, low plasticity, soft, moist, reddish, abundant mica.	PB-2 (2-4)	
5				SH	1					410
				SS	2	2 3 5 9	8	(6') Elastic SILT (MH); few medium sand, mostly silt, low plasticity, soft, moist, reddish, abundant mica.		
				SS	2	2 4 6 8	10		PB-2 (8-10)	
10				SS	2	3 3 5 4	8	(10') Lean CLAY with sand (CL); few fine sand, some silt, mostly clay, medium plasticity, soft, moist, yellowish-brown to red.		405
				SS	2	3 3 2 5	5	(12') Elastic SILT with sand (MH); trace fine sand, mostly silt, few clay, soft, moist, yellow brown to red.	PB-2 (12-14)	
				SS	2	4 4 7 10	11			
15				SS	2	6 6 5 5	11	(15') Silty SAND (SM); mostly fine-coarse grained sand, some silt, trace clay, medium dense, dry, brownish-white, weathered rock fragments, black mottles.	PB-2 (15-16)	400
				SS	2	5 6 5 8	11			
20										395

NOTES: PB-2D is a stickup well.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-2D
Page: 2 of 4

Drilling Start Date:	**11/29/2018**	Boring Depth (ft):	**61**	Well Depth (ft):	**57**
Drilling End Date:	**12/04/2018**	Boring Diameter (in):	**6.50**	Well Diam. (in)/Screen Slot (in):	**2.0/0.010**
Drilling Company:	**Thompson Engineering**	Static Water Level (ft):	**39.50**	Riser Material:	**Sch 40 PVC**
Drilling Method:	**Hollow Stem Auger**	DTW After Drilling (ft):	**12.40**	Screen Material:	**Sch 40 PVC Slotted**
Drilling Equipment:	**D-50**	Top of Casing Elev. (ft):	**416.71**	Sanitary Seal:	**Bentonite Pellets**
Driller:	**Phil Pitts**	Ground Elev. (ft):	**414.9**	Filter Pack:	**Sand**
Logged By:	**Nardos Tilahun**	Location (X,Y):	**1164853.6, 2556914.2**	Sampling Method(s):	**SS/SH/CO**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
20				SS	2	7 5	8			
				SS	2	3 5	11	(21.5') SILT (ML); trace fine sand, mostly silt, few clay, nonplastic, soft, dry, reddish-brown, abundant mica.		
						5 6		(22') SILT with sand (ML); few fine-coarse sand, mostly silt, trace clay, nonplastic, stiff, dry, brownish-white, black mottles, abundant mica.		
				SS	2	9 5	13	(24') SILT with sand (ML); few fine-coarse sand, mostly silt, trace clay, nonplastic, stiff, dry, brownish-white to light gray, abundant mica.	PB-2 (24-26)	
25						5 8				390
				SS	2	9 5	10	(26') SILT with sand (ML); few fine-coarse sand, mostly silt, trace clay, nonplastic, soft, dry, white to yellow brown.		
						4 6				
				SS	1.5	9 6	16	(28') SILT with sand (ML); few fine-coarse sand, mostly silt, trace clay, nonplastic, stiff, dry, brownish-white.		
						7 9				
30						13 7				385
				SS	1.5	10 11	21	(30') SILT (ML); few fine-coarse sand, mostly silt, trace clay, nonplastic, stiff, moist, yellow brown to brownish-white, black mottles, abundant laminated mica.	PB-2 (30-32)	
				SS	2	15 9	47	(32') SILT (ML); few fine-coarse sand, mostly silt, trace clay, nonplastic, hard, moist, brown to yellow brown to white, black mottles, mica, laminated, weathered white quartz rock fragments.		
						15 32				
				SS	2	33 8	28	(34') SILT (ML); few fine-coarse sand, mostly silt, trace clay, nonplastic, stiff, moist, gray to white.		
35						13 15				380
				SS	2	17 13	38	(36') SILT with sand (ML); few fine-coarse sand, mostly silt, trace clay, nonplastic, stiff, moist, yellowish-brown to white, abundant mica, quartz, laminated.	PB-2 (36-38)	
						18 20				
				SS	1	32 30	50	(38') Well-graded SAND (SW); mostly fine-coarse grained sand, few silt, trace clay, very dense, moist, brown to dark gray, black mottles, quartz.	PB-2 (38-40)	
						50/5.5		(39') Top of PWR.		
40										375

NOTES: PB-2D is a stickup well.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-2D
Page: 3 of 4

Drilling Start Date:	**11/29/2018**	Boring Depth (ft):	**61**	Well Depth (ft):	**57**
Drilling End Date:	**12/04/2018**	Boring Diameter (in):	**6.50**	Well Diam. (in)/Screen Slot (in):	**2.0/0.010**
Drilling Company:	**Thompson Engineering**	Static Water Level (ft):	**39.50**	Riser Material:	**Sch 40 PVC**
Drilling Method:	**Hollow Stem Auger**	DTW After Drilling (ft):	**12.40**	Screen Material:	**Sch 40 PVC Slotted**
Drilling Equipment:	**D-50**	Top of Casing Elev. (ft):	**416.71**	Sanitary Seal:	**Bentonite Pellets**
Driller:	**Phil Pitts**	Ground Elev. (ft):	**414.9**	Filter Pack:	**Sand**
Logged By:	**Nardos Tilahun**	Location (X,Y):	**1164853.6, 2556914.2**	Sampling Method(s):	**SS/SH/CO**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
40				SS	0.2	50/2.5		(42.9') Auger refusal.		
				CO	2.75		64	(43') MET ROCK (GNEISS); moderately bedded, fresh, hard, slightly fractured, dark gray to white, dark biotite and white feldspar minerals, strong, dark and light banding, trace red, flow banding, slightly decomposed near top, competent, fine to medium grain. Cable tool (rock coring) started at 43 ft below ground surface.		
45										370
				CO	4.3		87	(46.5') MET ROCK (GNEISS); moderately bedded, fresh, hard, unfractured, dark gray to white, dark biotite and white feldspar minerals, strong, dark and light banding, flow banding, competent, medium to coarse grain.		
50								Couldn't retrieve core, redrilled with new core catcher and bit, then retrieved core, as a result Run 3 has several mechanical fractures.		365
				CO	3.3		66	(51') MET ROCK (GNEISS); fresh, hard, unfractured, dark white, dark biotite and white feldspar minerals, strong, dark and light banding, flow banding, competent, medium to coarse grain, several mechanical breaks from redrilling. 51-52 ft was drilled (not cored) due to a weathered layer (mostly sand) jamming core bit.		
55										360
				CO	4.75		95	(56') MET ROCK (GNEISS); fresh, hard, unfractured, dark white, dark biotite and white feldspar minerals, strong, dark and light banding, flow banding, competent, medium to coarse grain.		
60										355

NOTES: PB-2D is a stickup well.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-2D
Page: 4 of 4

Drilling Start Date:	**11/29/2018**	Boring Depth (ft):	**61**	Well Depth (ft):	**57**
Drilling End Date:	**12/04/2018**	Boring Diameter (in):	**6.50**	Well Diam. (in)/Screen Slot (in):	**2.0/0.010**
Drilling Company:	**Thompson Engineering**	Static Water Level (ft):	**39.50**	Riser Material:	**Sch 40 PVC**
Drilling Method:	**Hollow Stem Auger**	DTW After Drilling (ft):	**12.40**	Screen Material:	**Sch 40 PVC Slotted**
Drilling Equipment:	**D-50**	Top of Casing Elev. (ft):	**416.71**	Sanitary Seal:	**Bentonite Pellets**
Driller:	**Phil Pitts**	Ground Elev. (ft):	**414.9**	Filter Pack:	**Sand**
Logged By:	**Nardos Tilahun**	Location (X,Y):	**1164853.6, 2556914.2**	Sampling Method(s):	**SS/SH/CO**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
60										
								(61') Boring terminated. Well installed on 12/05/2018		
65										350

NOTES: PB-2D is a stickup well.
NA = Not Applicable

Easting and Northing in NAD 83.
Elevation in NAVD 88.

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-4S/PB-4D
Page: 1 of 7

Drilling Start Date:	01/14/2019	Boring Depth (ft):	121	Well Depth (ft):	48/114.5
Drilling End Date:	01/16/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	31.54/29.62	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	31.70/31.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	CME-550	Top of Casing Elev. (ft):	411.15(PB-4S) 412.12(PB-4D)	Sanitary Seal:	Bentonite Pellets
Driller:	Stan White	Ground Elev. (ft):	409.3(PB-4S) 409.0(PB-4D)	Filter Pack:	Sand
Logged By:	Joseph Ivanowski	Location (X,Y):	1164335.1, 2556069.2(PB-4S) 1164339.6, 2556060.7(PB-4D)	Sampling Method(s):	SS/SH/CO

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
0				SS	1.34	1 1 3 4	4	(0') Clayey SAND (SC); some fine-coarse grained sand, some silt, little clay, moist, reddish.	PB-4 (0-2)	
				SS	1.76	1 6 8 11	14	(2') Lean CLAY (CL); trace fine sand, mostly clay, medium plasticity, stiff, moist, dark reddish, micaceous with trace quartz fragments.	PB-4 (2-4)	
5				SS	1.76	3 5 8 10	13		PB-4 (4-6)	405
				SS	1.66	5 4 7 10	11	(6') Elastic SILT (MH); little fine sand, mostly silt, trace clay, low plasticity, stiff, moist, dark reddish, more micaceous.	PB-4 (6-8)	
				SS	1.5	2 3 5 5	8		PB-4 (8-10)	400
10				SS	1.76	3 4 5 14	9		PB-4 (10-12)	
								(11') Silty SAND (SM); mostly fine grained sand, trace coarse gravel, some silt, trace clay, dense, dry, mottled red to pink brown, trace quartz gravel.		
				SS	2	2 3 5 7	8	(12') Silty SAND (SM); mostly fine grained sand, trace coarse gravel, some silt, trace clay, moist, yellowish-white, 1 inch thick clay lens 14.6 to 14.7.	PB-4 (12-14)	
				SS	1.58	3 4 5 4	9			395
15								Attempted Shelby Tube, only 10 in recovery, discarded.		
				SH	1.92					390
20										

NOTES: PB-4S and PB-4D are stickup wells, PB-4S is ~10ft away from PB-4D well.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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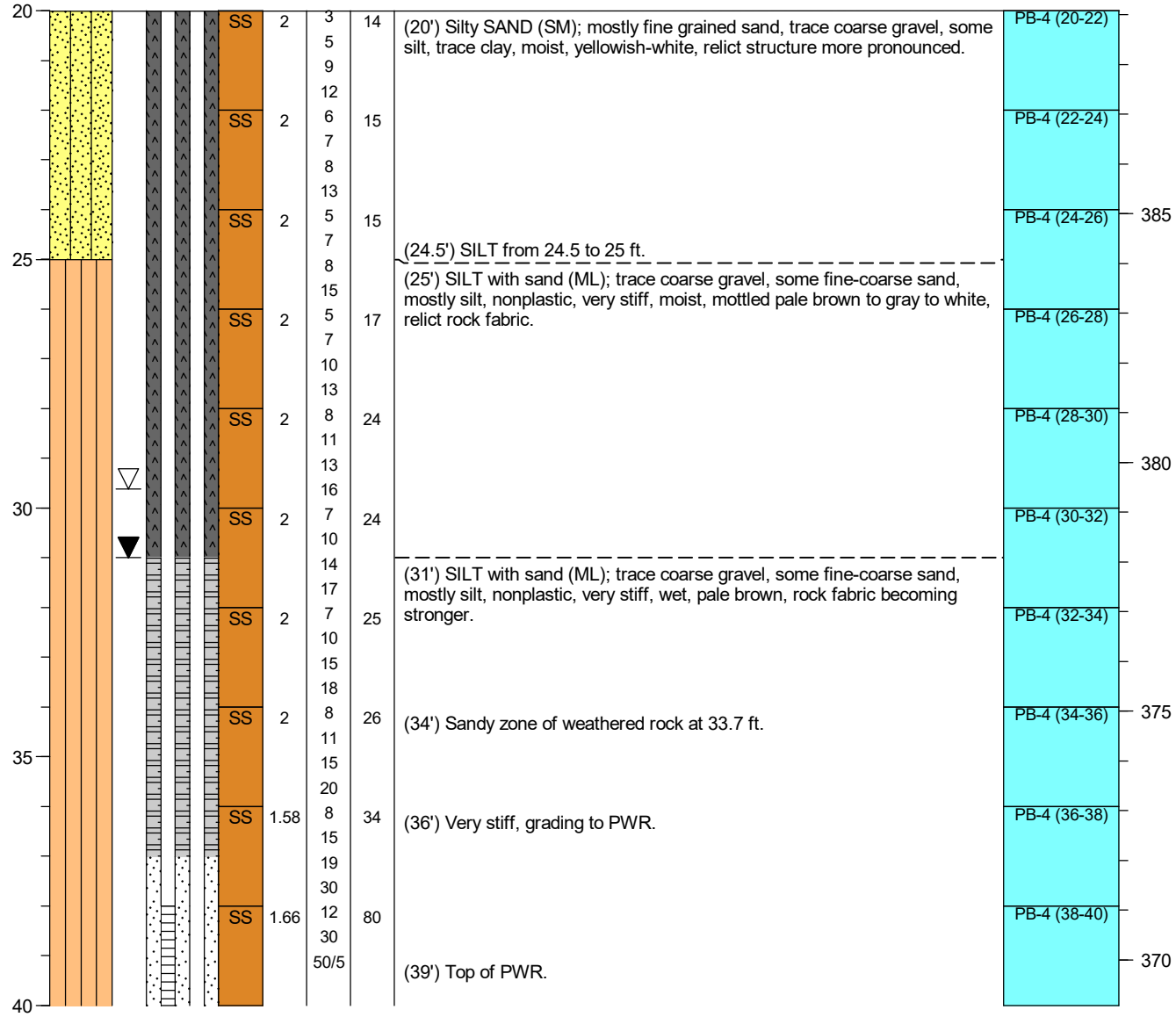
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-4S/PB-4D
Page: 2 of 7

Drilling Start Date:	01/14/2019	Boring Depth (ft):	121	Well Depth (ft):	48/114.5
Drilling End Date:	01/16/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	31.54/29.62	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	31.70/31.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	CME-550	Top of Casing Elev. (ft):	411.15(PB-4S) 412.12(PB-4D)	Sanitary Seal:	Bentonite Pellets
Driller:	Stan White	Ground Elev. (ft):	409.3(PB-4S) 409.0(PB-4D)	Filter Pack:	Sand
Logged By:	Joseph Ivanowski	Location (X,Y):	1164335.1, 2556069.2(PB-4S) 1164339.6, 2556060.7(PB-4D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-4S and PB-4D are stickup wells, PB-4S is ~10ft away from PB-4D well.
NA = Not Applicable

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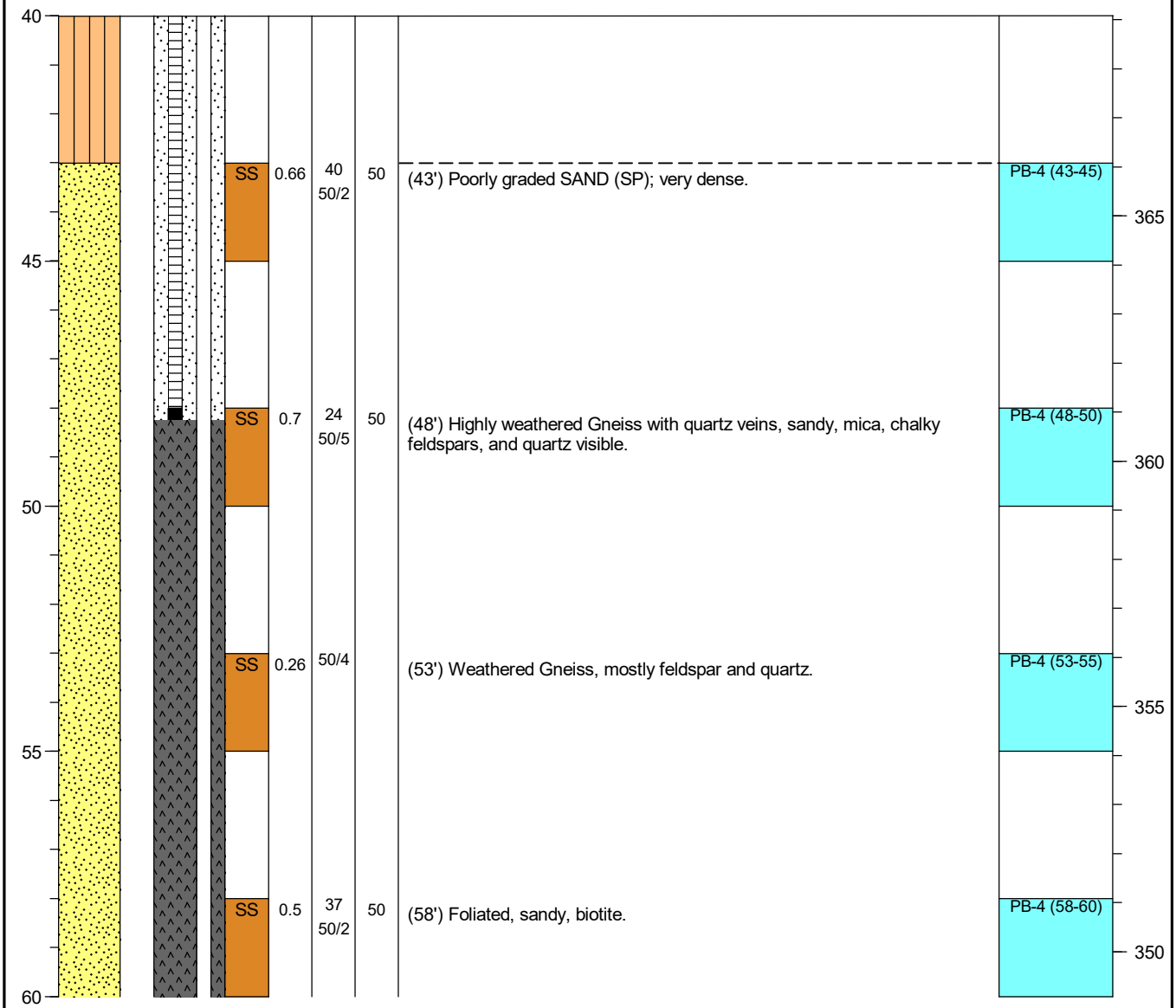
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-4S/PB-4D
Page: 3 of 7

Drilling Start Date:	01/14/2019	Boring Depth (ft):	121	Well Depth (ft):	48/114.5
Drilling End Date:	01/16/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	31.54/29.62	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	31.70/31.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	CME-550	Top of Casing Elev. (ft):	411.15(PB-4S) 412.12(PB-4D)	Sanitary Seal:	Bentonite Pellets
Driller:	Stan White	Ground Elev. (ft):	409.3(PB-4S) 409.0(PB-4D)	Filter Pack:	Sand
Logged By:	Joseph Ivanowski	Location (X,Y):	1164335.1, 2556069.2(PB-4S) 1164339.6, 2556060.7(PB-4D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-4S and PB-4D are stickup wells, PB-4S is ~10ft away from PB-4D well.
NA = Not Applicable

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Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-4S/PB-4D
Page: 4 of 7

Drilling Start Date:	01/14/2019	Boring Depth (ft):	121	Well Depth (ft):	48/114.5
Drilling End Date:	01/16/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	31.54/29.62	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	31.70/31.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	CME-550	Top of Casing Elev. (ft):	411.15(PB-4S) 412.12(PB-4D)	Sanitary Seal:	Bentonite Pellets
Driller:	Stan White	Ground Elev. (ft):	409.3(PB-4S) 409.0(PB-4D)	Filter Pack:	Sand
Logged By:	Joseph Ivanowski	Location (X,Y):	1164335.1, 2556069.2(PB-4S) 1164339.6, 2556060.7(PB-4D)	Sampling Method(s):	SS/SH/CO

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
60										
				SS	0.3	50/3.5		(63') Biotite, foliated, sandy, mostly feldspar.	PB-4 (63-65)	345
65										
				SS	0.62	17 50/5	50	(68') Moderately weathered biotite gneiss foliated, mostly feldspars.	PB-4 (68-70)	340
70										
				SS	0.38	50/5		(73') Poorly graded SAND (SP); very dense, mostly felsic minerals, sandy texture.	PB-4 (73-75)	335
75										
				SS	0.2	50/3		(78') Biotite, sandy texture.	PB-4 (78-80)	330
80										

NOTES: PB-4S and PB-4D are stickup wells, PB-4S is ~10ft away from PB-4D well.
NA = Not Applicable

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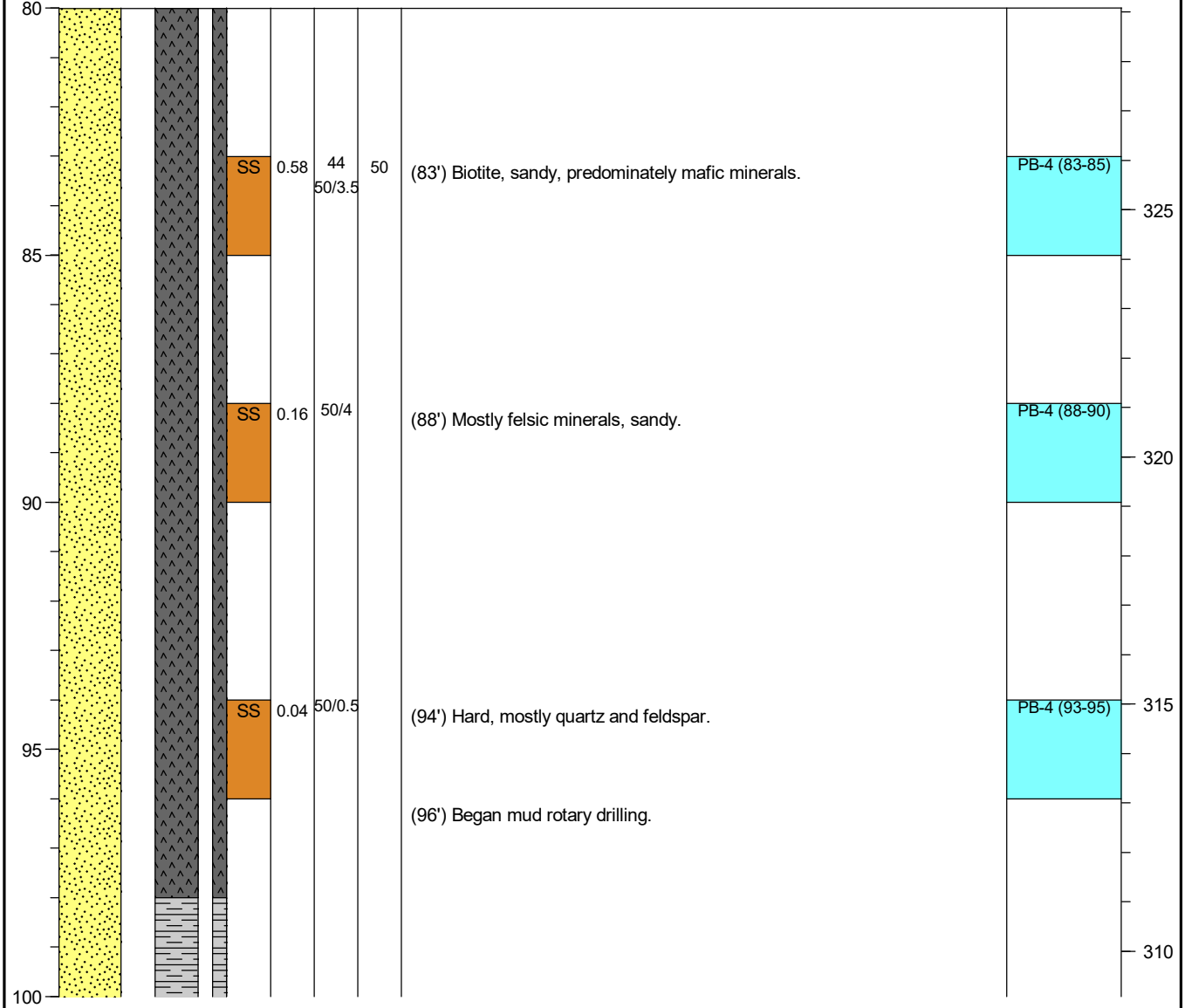
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-4S/PB-4D
Page: 5 of 7

Drilling Start Date:	01/14/2019	Boring Depth (ft):	121	Well Depth (ft):	48/114.5
Drilling End Date:	01/16/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	31.54/29.62	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	31.70/31.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	CME-550	Top of Casing Elev. (ft):	411.15(PB-4S) 412.12(PB-4D)	Sanitary Seal:	Bentonite Pellets
Driller:	Stan White	Ground Elev. (ft):	409.3(PB-4S) 409.0(PB-4D)	Filter Pack:	Sand
Logged By:	Joseph Ivanowski	Location (X,Y):	1164335.1, 2556069.2(PB-4S) 1164339.6, 2556060.7(PB-4D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-4S and PB-4D are stickup wells, PB-4S is ~10ft away from PB-4D well.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-4S/PB-4D
Page: 6 of 7

Drilling Start Date:	01/14/2019	Boring Depth (ft):	121	Well Depth (ft):	48/114.5
Drilling End Date:	01/16/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	31.54/29.62	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	31.70/31.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	CME-550	Top of Casing Elev. (ft):	411.15(PB-4S) 412.12(PB-4D)	Sanitary Seal:	Bentonite Pellets
Driller:	Stan White	Ground Elev. (ft):	409.3(PB-4S) 409.0(PB-4D)	Filter Pack:	Sand
Logged By:	Joseph Ivanowski	Location (X,Y):	1164335.1, 2556069.2(PB-4S) 1164339.6, 2556060.7(PB-4D)	Sampling Method(s):	SS/SH/CO

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
100										
				CO	2		55	(104') MET ROCK (GNEISS); fresh, hard, very slightly fractured, dark gray, some quartz and feldspar, phenocrysts, weak banding, low angle fractures at 104.5 and 106 ft.		305
105				CO	9.7		89			
										300
110								(110') Low angle fractures, some healed high angle fractures, very few fractures, very hard, fractures at 110, 111, and 113.5 ft.		
										295
115				CO	5		100	(116') No natural fractures from 116 to 121 ft.		
										290
120										

NOTES: PB-4S and PB-4D are stickup wells, PB-4S is ~10ft away from PB-4D well.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-4S/PB-4D
Page: 7 of 7

Drilling Start Date:	01/14/2019	Boring Depth (ft):	121	Well Depth (ft):	48/114.5
Drilling End Date:	01/16/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	31.54/29.62	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	31.70/31.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	CME-550	Top of Casing Elev. (ft):	411.15(PB-4S) 412.12(PB-4D)	Sanitary Seal:	Bentonite Pellets
Driller:	Stan White	Ground Elev. (ft):	409.3(PB-4S) 409.0(PB-4D)	Filter Pack:	Sand
Logged By:	Joseph Ivanowski	Location (X,Y):	1164335.1, 2556069.2(PB-4S) 1164339.6, 2556060.7(PB-4D)	Sampling Method(s):	SS/SH/CO

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
120										
								(121') Boring terminated. Well installed on 01/17/2019		
125										285

NOTES: PB-4S and PB-4D are stickup wells, PB-4S is ~10ft away from PB-4D well.
NA = Not Applicable

Easting and Northing in NAD 83.
Elevation in NAVD 88.

Boring log revised with new survey data dated 7/23/2020.

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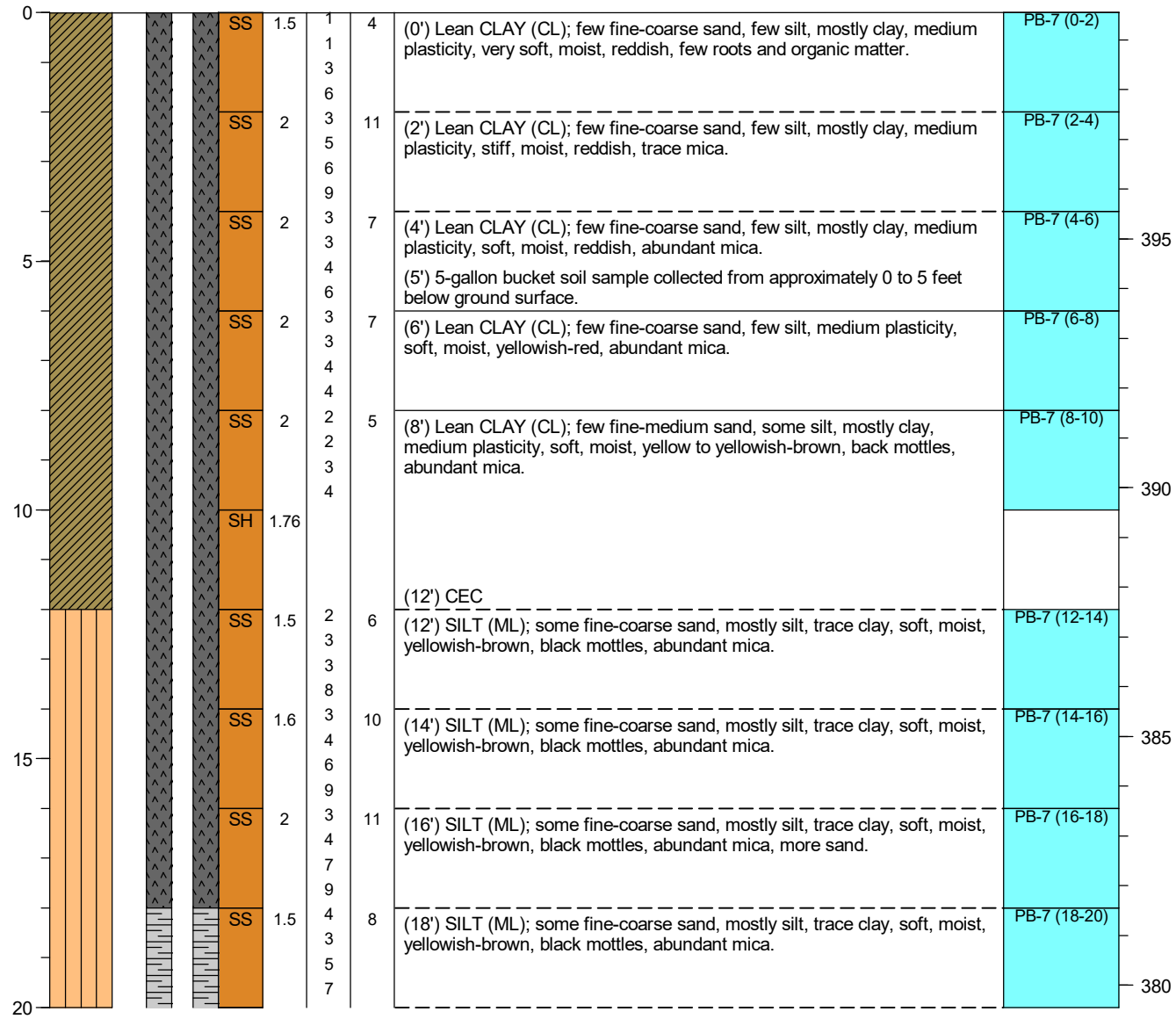
WELL LOG
Well No. PB-7S/PB-7
Page: 1 of 3

Drilling Start Date:	01/10/2019	Boring Depth (ft):	59.6	Well Depth (ft):	33
Drilling End Date:	01/14/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	24.51/NA	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	24.60/NA	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft)	402.88/NA	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	399.7/NA	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163831.3, 2556186.2	Sampling Method(s):	SS/SH/CO



NOTES: PB-7S is a stickup well located ~10ft away from PB-7 borehole.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Project: Plant Branch CCR Landfill Site Investigation
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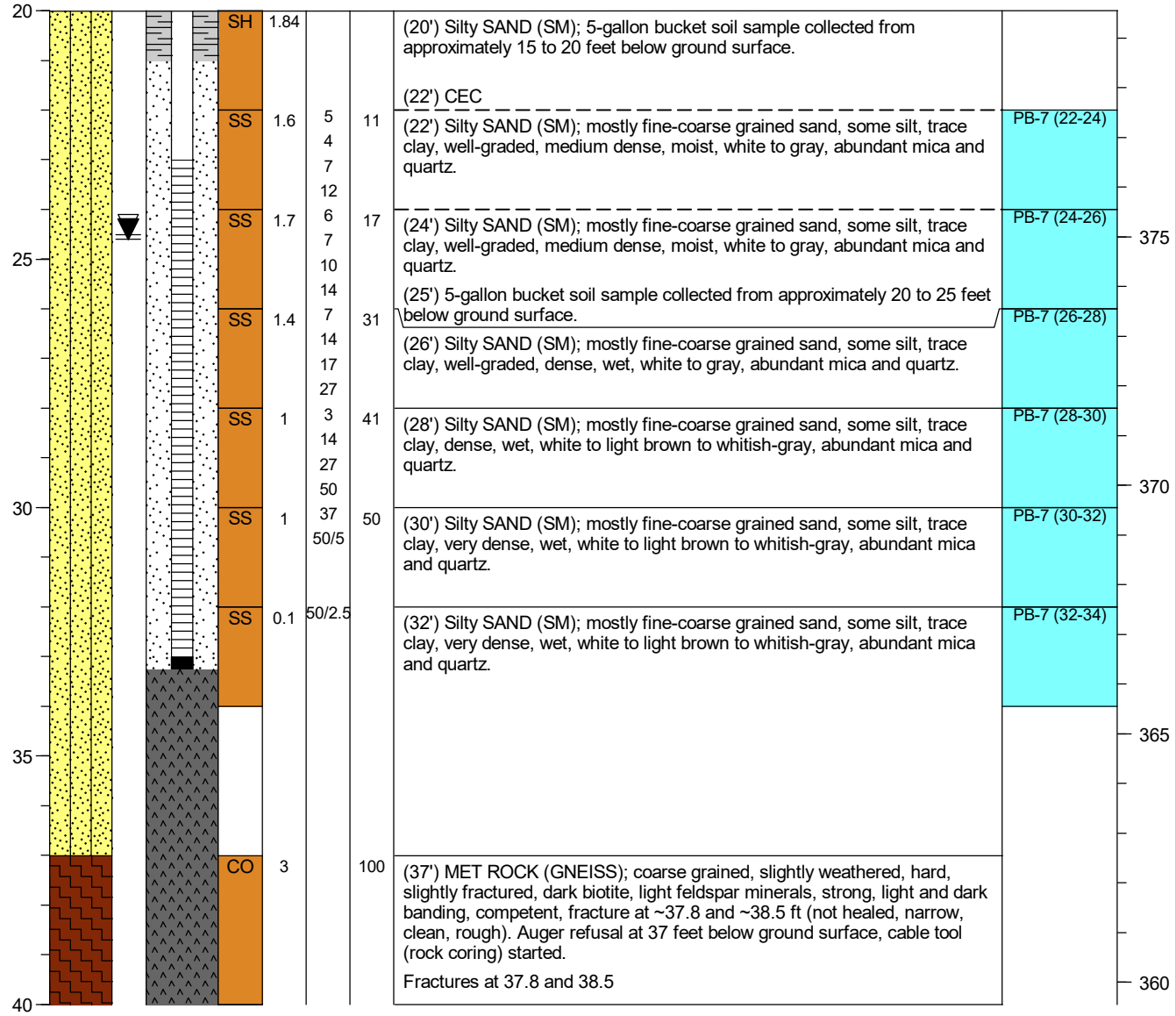
WELL LOG
Well No. PB-7S/PB-7
Page: 2 of 3

Drilling Start Date:	01/10/2019	Boring Depth (ft):	59.6	Well Depth (ft):	33
Drilling End Date:	01/14/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	24.51/NA	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	24.60/NA	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft)	402.88/NA	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	399.7/NA	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163831.3, 2556186.2	Sampling Method(s):	SS/SH/CO



NOTES: PB-7S is a stickup well located ~10ft away from PB-7 borehole.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-7S/PB-7
Page: 3 of 3

Drilling Start Date:	**01/10/2019**	Boring Depth (ft):	**59.6**	Well Depth (ft):	**33**
Drilling End Date:	**01/14/2019**	Boring Diameter (in):	**6.50**	Well Diam. (in)/Screen Slot (in):	**2.0/0.010**
Drilling Company:	**Thompson Engineering**	Static Water Level (ft):	**24.51/NA**	Riser Material:	**Sch 40 PVC**
Drilling Method:	**Hollow Stem Auger**	DTW After Drilling (ft):	**24.60/NA**	Screen Material:	**Sch 40 PVC Slotted**
Drilling Equipment:	**D-50**	Top of Casing Elev. (ft)	**402.88/NA**	Sanitary Seal:	**Bentonite Pellets**
Driller:	**Phil Pitts**	Ground Elev. (ft):	**399.7/NA**	Filter Pack:	**Sand**
Logged By:	**Nardos Tilahun**	Location (X,Y):	**1163831.3, 2556186.2**	Sampling Method(s):	**SS/SH/CO**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
40				CO	5		100	(40') MET ROCK (GNEISS); coarse grained, fresh, hard, unfractured, dark biotite, light feldspar minerals, strong, light and dark banding, competent, mechanical break.		
										355
45				CO	4.5		90	(45') MET ROCK (GNEISS); coarse grained, fresh, hard, unfractured, dark biotite, light feldspar minerals, strong, light and dark banding, competent, mechanical break.		
										350
50				CO	5		100	(50') MET ROCK (GNEISS); coarse grained, fresh, hard, unfractured, dark biotite, light feldspar minerals, strong, light and dark banding, competent, mechanical break.		
										345
55				CO	4.6		100	(55') MET ROCK (GNEISS); coarse grained, fresh, hard, unfractured, dark biotite, light feldspar minerals, strong, light and dark banding, competent, mechanical break.		
								(59.6') Boring terminated. Well installed on 01/14/2019		340
60										

NOTES: PB-7S is a stickup well located ~10ft away from PB-7 borehole.
NA = Not Applicable

Easting and Northing in NAD 83.
Elevation in NAVD 88.

Boring log revised with new survey data dated 7/23/2020.

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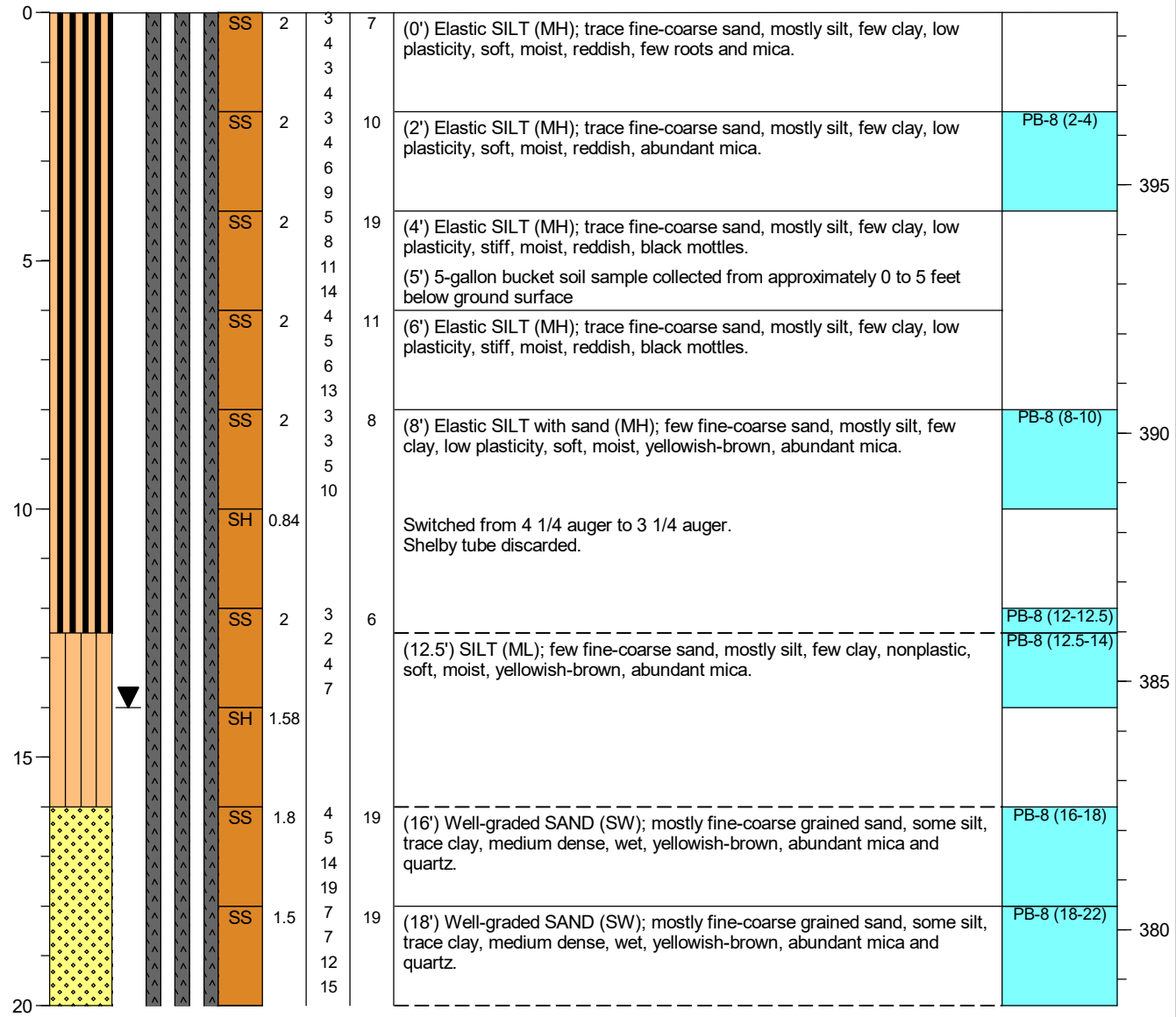
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-8S/PB-8D
Page: 1 of 6

Drilling Start Date:	01/06/2019	Boring Depth (ft):	106	Well Depth (ft):	35/106
Drilling End Date:	01/08/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	22.05/22.11	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	22.60/14.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	401.82(PB-8S) 401.74(PB-8D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	398.6(PB-8S) 398.2(PB-8D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163018.2, 2556792.3(PB-8S) 1163024.4, 2556786.7(PB-8D)	Sampling Method(s):	SS/SH/CO



DEPTH (ft)	Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	Lab Sample	ELEV. (ft msl)
0	SS	2	3 4 3 4	7	(0') Elastic SILT (MH); trace fine-coarse sand, mostly silt, few clay, low plasticity, soft, moist, reddish, few roots and mica.		
	SS	2	3 4 6 9	10	(2') Elastic SILT (MH); trace fine-coarse sand, mostly silt, few clay, low plasticity, soft, moist, reddish, abundant mica.	PB-8 (2-4)	395
5	SS	2	5 8 11 14	19	(4') Elastic SILT (MH); trace fine-coarse sand, mostly silt, few clay, low plasticity, stiff, moist, reddish, black mottles. (5') 5-gallon bucket soil sample collected from approximately 0 to 5 feet below ground surface		
	SS	2	4 5 6 13	11	(6') Elastic SILT (MH); trace fine-coarse sand, mostly silt, few clay, low plasticity, stiff, moist, reddish, black mottles.		
	SS	2	3 3 5 10	8	(8') Elastic SILT with sand (MH); few fine-coarse sand, mostly silt, few clay, low plasticity, soft, moist, yellowish-brown, abundant mica.	PB-8 (8-10)	390
10	SH	0.84			Switched from 4 1/4 auger to 3 1/4 auger. Shelby tube discarded.		
	SS	2	3 2 4 7	6		PB-8 (12-12.5)	
	SH	1.58			(12.5') SILT (ML); few fine-coarse sand, mostly silt, few clay, nonplastic, soft, moist, yellowish-brown, abundant mica.	PB-8 (12.5-14)	385
15	SS	1.8	4 5 14 19	19	(16') Well-graded SAND (SW); mostly fine-coarse grained sand, some silt, trace clay, medium dense, wet, yellowish-brown, abundant mica and quartz.	PB-8 (16-18)	
	SS	1.5	7 7 12 15	19	(18') Well-graded SAND (SW); mostly fine-coarse grained sand, some silt, trace clay, medium dense, wet, yellowish-brown, abundant mica and quartz.	PB-8 (18-22)	380
20							

NOTES: PB-8S and PB-8D are stickup wells, PB-8S is ~10ft away from PB-8D well. Depth to water at PB-8S is 22.6 feet below ground surface.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-8S/PB-8D
Page: 2 of 6

Drilling Start Date:	01/06/2019	Boring Depth (ft):	106	Well Depth (ft):	35/106
Drilling End Date:	01/08/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	22.05/22.11	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	22.60/14.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	401.82(PB-8S) 401.74(PB-8D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	398.6(PB-8S) 398.2(PB-8D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163018.2, 2556792.3(PB-8S) 1163024.4, 2556786.7(PB-8D)	Sampling Method(s):	SS/SH/CO

DEPTH (ft)	Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	Lab Sample	ELEV. (ft msl)
20	SS	1.5	5 6 11 17	17	(20') Poorly graded SAND (SP); mostly fine-medium grained sand, some silt, few clay, medium dense, wet, gray to white, abundant mica and quartz.	PB-8 (20-22)	
	SS	1.2	14 16 20 27	36	(22') Poorly graded SAND (SP); mostly fine-medium grained sand, some silt, few clay, dense, wet, gray to white, some quartz.		375
25	SS	1.4	14 17 23 32	40	(24') Poorly graded SAND (SP); mostly fine-medium grained sand, some silt, few clay, dense, wet, gray to white, some quartz.		
	SS	1	17 31 50/2	81	(26') Well-graded SAND (SW); mostly fine-coarse grained sand, few silt, trace clay, very dense, wet, gray to white, some quartz. (27') Top of PWR	PB-8 (26-28)	
	SS	1.5	25 23 40 50/4	63	(28') Well-graded SAND (SW); mostly fine-coarse grained sand, few silt, trace clay, very dense, wet, gray to white, some quartz.		370
30							
	SS	0.8	34 50/5.5	50	(33') Well-graded SAND (SW); mostly fine-coarse grained sand, few silt, trace clay, very dense, wet, gray to white, some quartz.		365
35							
	SS	0.5	44 50/5	50	(38') Well-graded SAND (SW); mostly fine-coarse grained sand, few silt, trace clay, very dense, wet, gray to white, some quartz.		360
40							

NOTES: PB-8S and PB-8D are stickup wells, PB-8S is ~10ft away from PB-8D well. Depth to water at PB-8S is 22.6 feet below ground surface.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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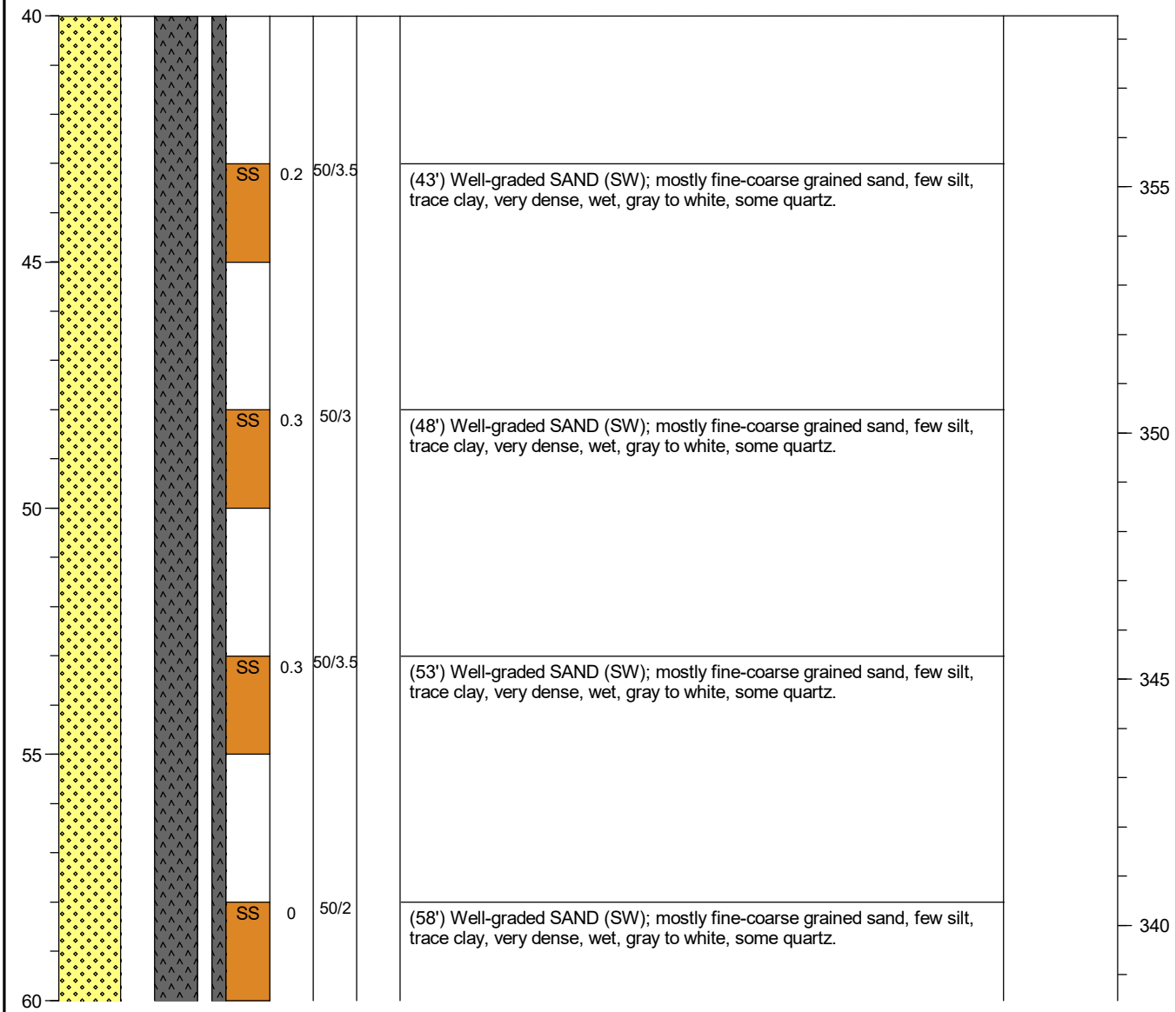
Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-8S/PB-8D
Page: 3 of 6

Drilling Start Date:	01/06/2019	Boring Depth (ft):	106	Well Depth (ft):	35/106
Drilling End Date:	01/08/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	22.05/22.11	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	22.60/14.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	401.82(PB-8S) 401.74(PB-8D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	398.6(PB-8S) 398.2(PB-8D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163018.2, 2556792.3(PB-8S) 1163024.4, 2556786.7(PB-8D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-8S and PB-8D are stickup wells, PB-8S is ~10ft away from PB-8D well. Depth to water at PB-8S is 22.6 feet below ground surface.
NA = Not Applicable

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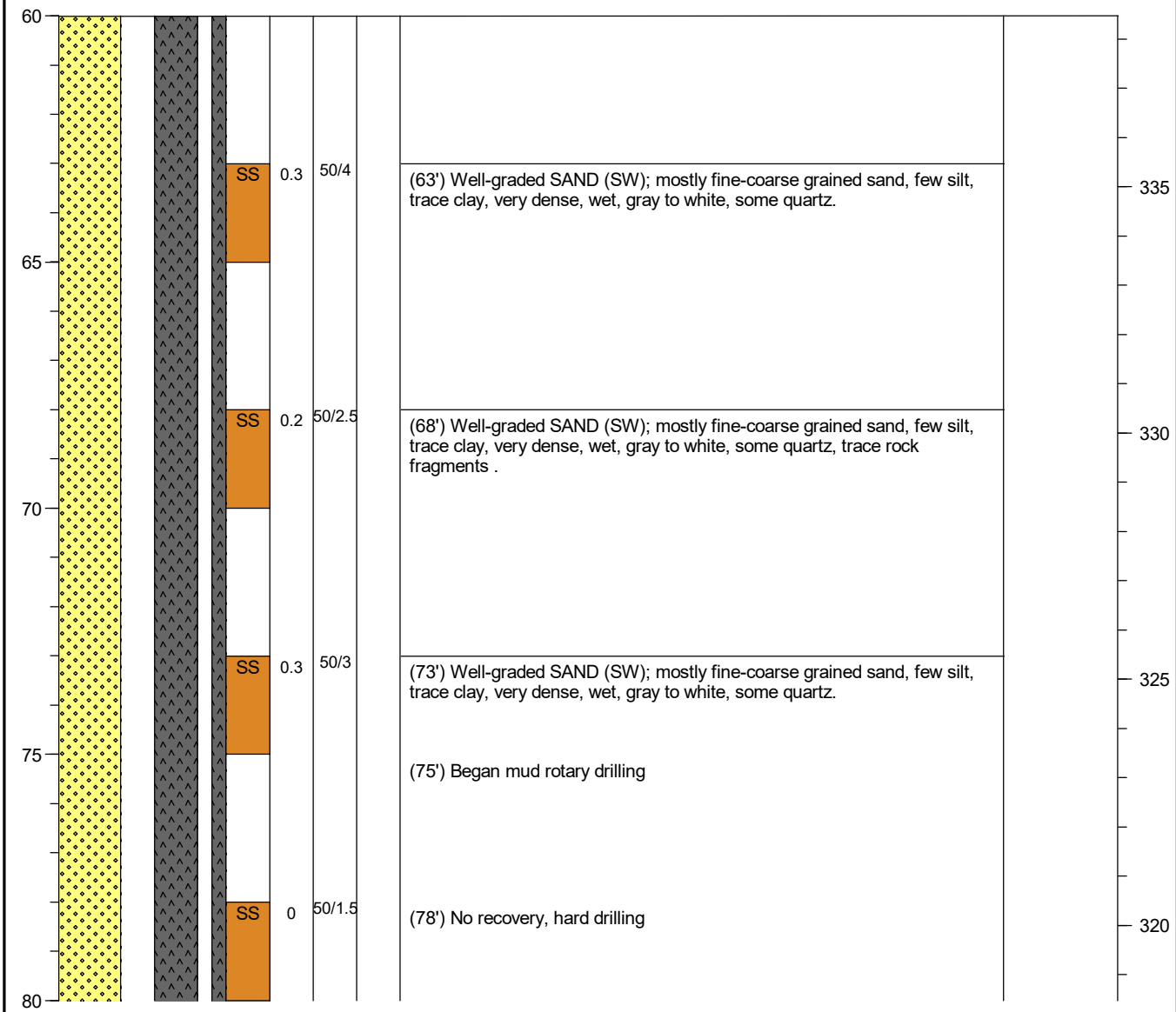
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-8S/PB-8D
Page: 4 of 6

Drilling Start Date:	01/06/2019	Boring Depth (ft):	106	Well Depth (ft):	35/106
Drilling End Date:	01/08/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	22.05/22.11	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	22.60/14.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	401.82(PB-8S) 401.74(PB-8D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	398.6(PB-8S) 398.2(PB-8D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163018.2, 2556792.3(PB-8S) 1163024.4, 2556786.7(PB-8D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-8S and PB-8D are stickup wells, PB-8S is ~10ft away from PB-8D well. Depth to water at PB-8S is 22.6 feet below ground surface.
NA = Not Applicable

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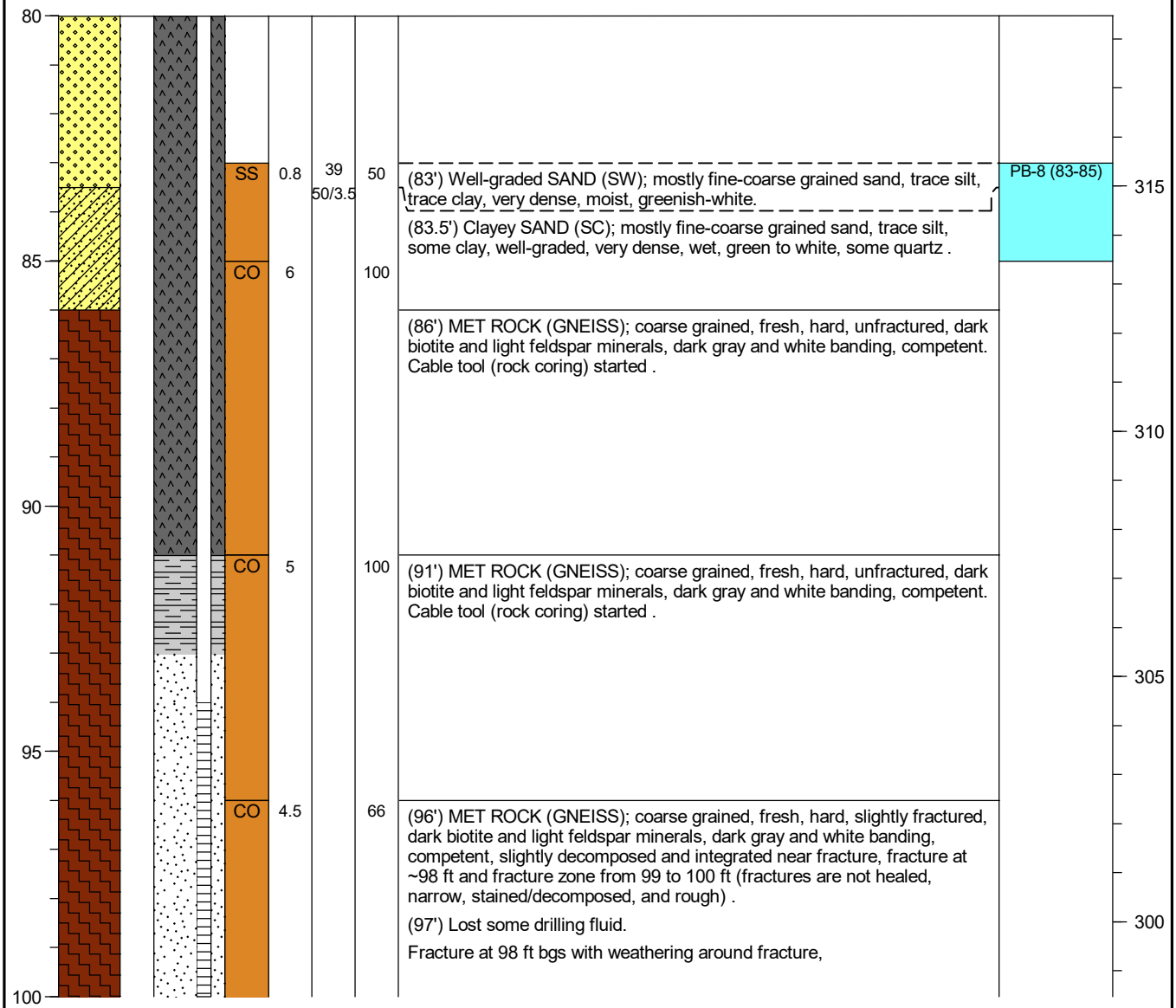
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-8S/PB-8D
Page: 5 of 6

Drilling Start Date:	01/06/2019	Boring Depth (ft):	106	Well Depth (ft):	35/106
Drilling End Date:	01/08/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	22.05/22.11	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	22.60/14.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	401.82(PB-8S) 401.74(PB-8D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	398.6(PB-8S) 398.2(PB-8D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163018.2, 2556792.3(PB-8S) 1163024.4, 2556786.7(PB-8D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-8S and PB-8D are stickup wells, PB-8S is ~10ft away from PB-8D well. Depth to water at PB-8S is 22.6 feet below ground surface.
NA = Not Applicable

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Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-8S/PB-8D
Page: 6 of 6

Drilling Start Date:	01/06/2019	Boring Depth (ft):	106	Well Depth (ft):	35/106
Drilling End Date:	01/08/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	22.05/22.11	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	22.60/14.00	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	401.82(PB-8S) 401.74(PB-8D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	398.6(PB-8S) 398.2(PB-8D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163018.2, 2556792.3(PB-8S) 1163024.4, 2556786.7(PB-8D)	Sampling Method(s):	SS/SH/CO

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
100										
				CO	4.7		88	(101') MET ROCK (GNEISS); coarse grained, fresh, hard, slightly fractured, dark biotite and light feldspar minerals, dark gray and white banding, competent, slightly decomposed and integrated near fracture, fracture at ~103, 104.5, and 104.7 ft (fractures are not healed, narrow, stained/decomposed, and rough) . (102') Lost some drilling fluid Fracture at 103, 104.5, and 104.7 ft bgs.		295
105								(106') Boring terminated.		290
110										

NOTES: PB-8S and PB-8D are stickup wells, PB-8S is ~10ft away from PB-8D well. Depth to water at PB-8S is 22.6 feet below ground surface.
NA = Not Applicable

Easting and Northing in NAD 83.
Elevation in NAVD 88.

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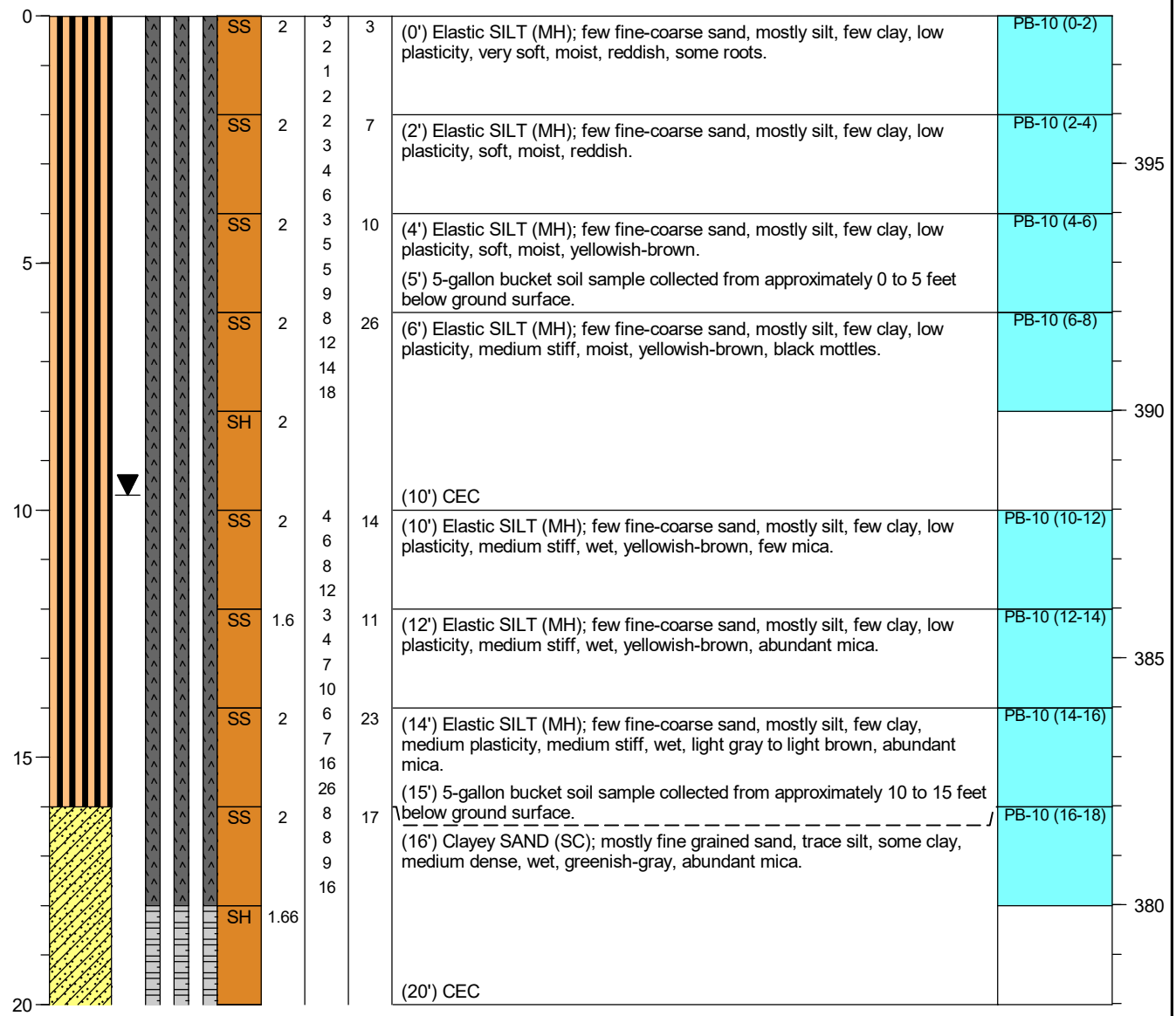
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-10S/PB-10D
Page: 1 of 5

Drilling Start Date:	01/16/2019	Boring Depth (ft):	91	Well Depth (ft):	33/85
Drilling End Date:	01/17/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	9.91/10.04	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	9.70/9.70	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	400.91(PB-10S) 400.31(PB-10D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	397.6(PB-10S) 397.5(PB-10D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163588.9, 2558551.2(PB-10S) 1163593.4, 2558546.7(PB-10D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-10S and PB-10D are stickup wells, PB-10S is ~10ft away from PB-10D well. Depth to water at PB-10S is 9.7 feet below ground surface.
NA = Not Applicable

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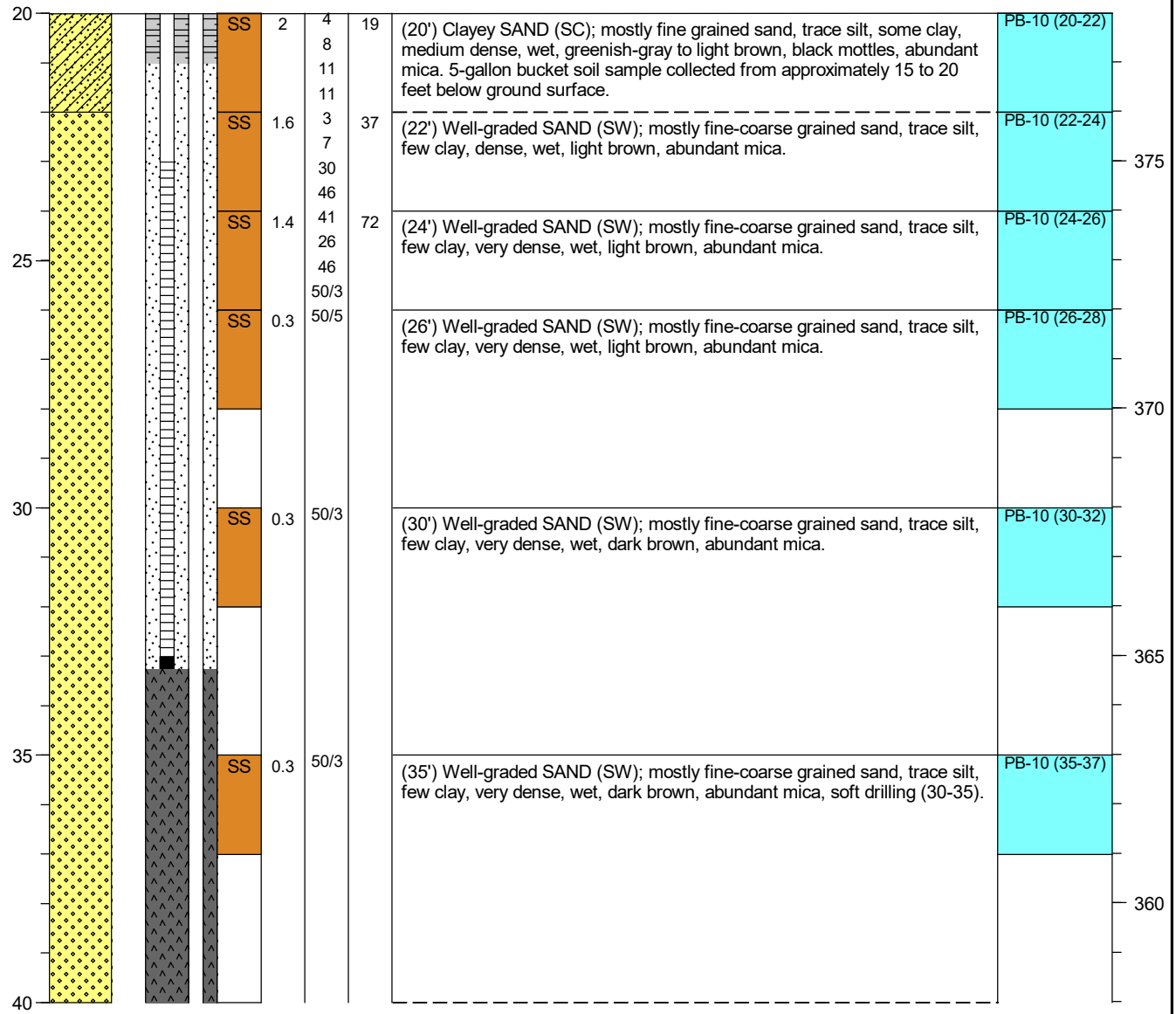
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-10S/PB-10D
Page: 2 of 5

Drilling Start Date:	01/16/2019	Boring Depth (ft):	91	Well Depth (ft):	33/85
Drilling End Date:	01/17/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	9.91/10.04	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	9.70/9.70	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	400.91(PB-10S) 400.31(PB-10D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	397.6(PB-10S) 397.5(PB-10D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163588.9, 2558551.2(PB-10S) 1163593.4, 2558546.7(PB-10D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-10S and PB-10D are stickup wells, PB-10S is ~10ft away from PB-10D well. Depth to water at PB-10S is 9.7 feet below ground surface.
NA = Not Applicable

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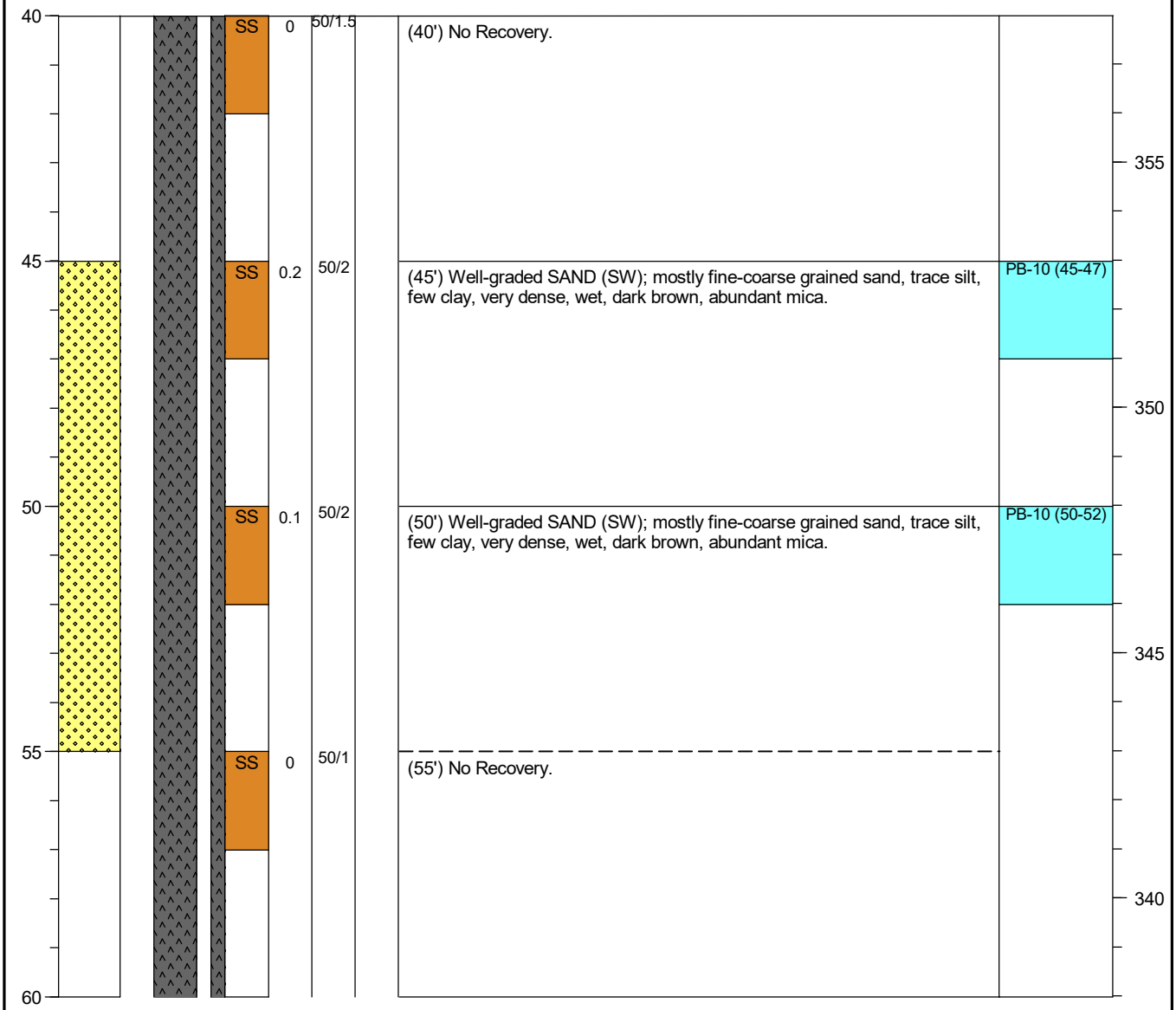
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-10S/PB-10D
Page: 3 of 5

Drilling Start Date:	01/16/2019	Boring Depth (ft):	91	Well Depth (ft):	33/85
Drilling End Date:	01/17/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	9.91/10.04	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	9.70/9.70	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	400.91(PB-10S) 400.31(PB-10D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	397.6(PB-10S) 397.5(PB-10D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163588.9, 2558551.2(PB-10S) 1163593.4, 2558546.7(PB-10D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-10S and PB-10D are stickup wells, PB-10S is ~10ft away from PB-10D well. Depth to water at PB-10S is 9.7 feet below ground surface.
NA = Not Applicable

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Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-10S/PB-10D
Page: 4 of 5

Drilling Start Date:	01/16/2019	Boring Depth (ft):	91	Well Depth (ft):	33/85
Drilling End Date:	01/17/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	9.91/10.04	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	9.70/9.70	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	400.91(PB-10S) 400.31(PB-10D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	397.6(PB-10S) 397.5(PB-10D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163588.9, 2558551.2(PB-10S) 1163593.4, 2558546.7(PB-10D)	Sampling Method(s):	SS/SH/CO

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
60				SS	0.2	50/2		(60') Well-graded SAND (SW); mostly fine-coarse grained sand, trace silt, few clay, very dense, wet, dark brown, abundant mica.	PB-10 (60-62)	
								(62') Began mud rotary drilling.		
				SS	1.3	20 38 50/4	88	(63') Poorly graded SAND (SP); mostly fine-coarse grained sand, very dense, wet, light gray to white, weathered rock fragments (gneiss), abundant mica and quartz.	PB-10 (63-65)	335
65										
				CO	2.5		14	(67.5') MET ROCK (GNEISS); coarse grained, moderately weathered, moderately hard, intensely fractured, dark biotite and light feldspar banding, moderately decomposed near the top, fractures have Fe oxide staining and are narrow to wide. Cable tool (rock coring) started.		330
70				CO	3.5		20	(71') MET ROCK (GNEISS); coarse grained, moderately weathered, moderately hard, moderately fractured, dark biotite and light feldspar banding, moderately decomposed near fracture, fractures have clay filling and are narrow to wide.		325
75				CO	4.75		54	(76') MET ROCK (GNEISS); coarse grained, moderately weathered, moderately hard, moderately fractured, dark biotite and light feldspar banding, fractures have clay filling and Fe oxide staining and are narrow to wide.		320
80										

NOTES: PB-10S and PB-10D are stickup wells, PB-10S is ~10ft away from PB-10D well. Depth to water at PB-10S is 9.7 feet below ground surface.
NA = Not Applicable

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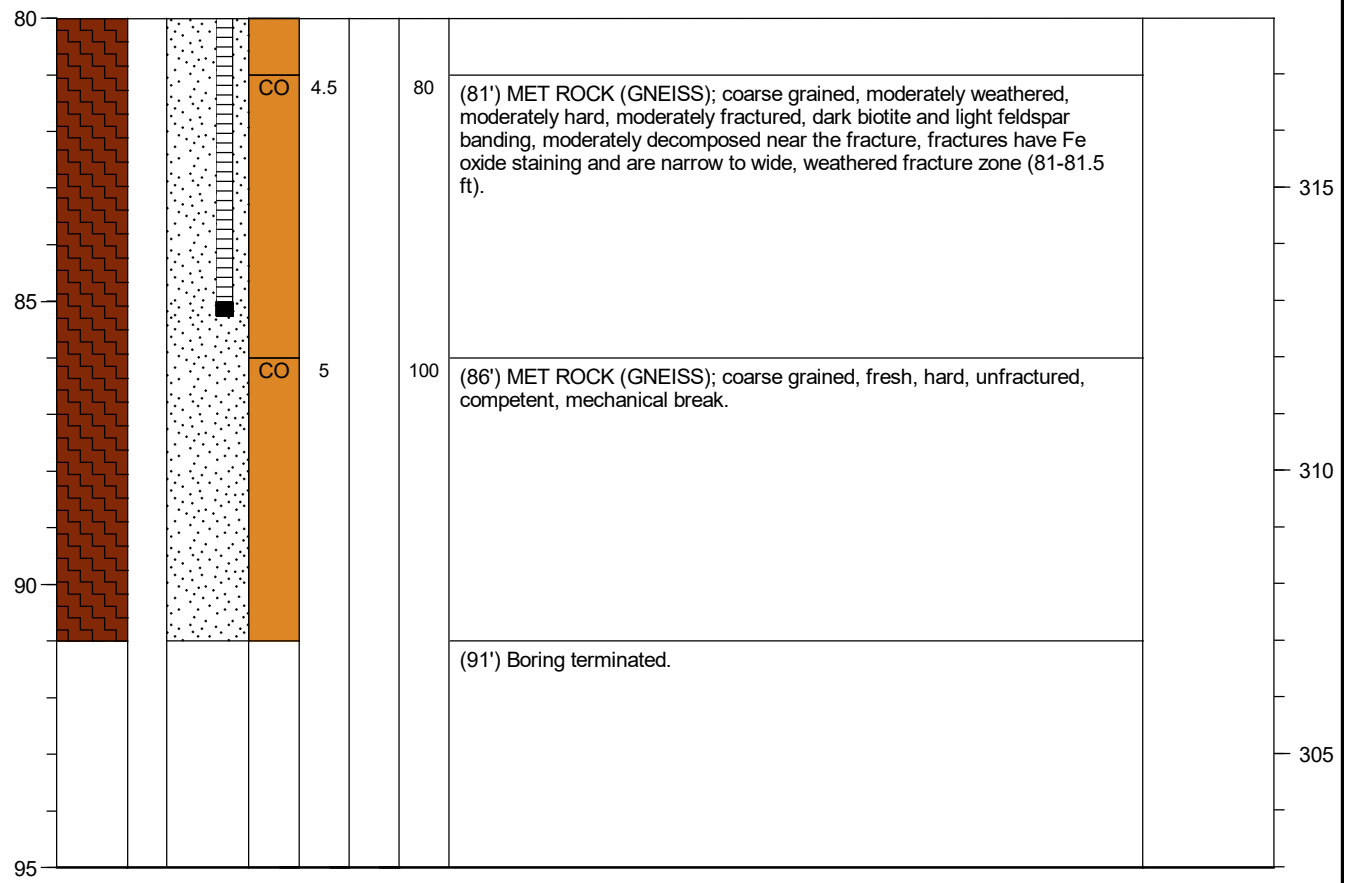
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-10S/PB-10D
Page: 5 of 5

Drilling Start Date:	01/16/2019	Boring Depth (ft):	91	Well Depth (ft):	33/85
Drilling End Date:	01/17/2019	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	9.91/10.04	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	9.70/9.70	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	400.91(PB-10S) 400.31(PB-10D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	397.6(PB-10S) 397.5(PB-10D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1163588.9, 2558551.2(PB-10S) 1163593.4, 2558546.7(PB-10D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-10S and PB-10D are stickup wells, PB-10S is ~10ft away from PB-10D well. Depth to water at PB-10S is 9.7 feet below ground surface.
NA = Not Applicable

Easting and Northing in NAD 83.
Elevation in NAVD 88.

Boring log revised with new survey data dated 7/23/2020.

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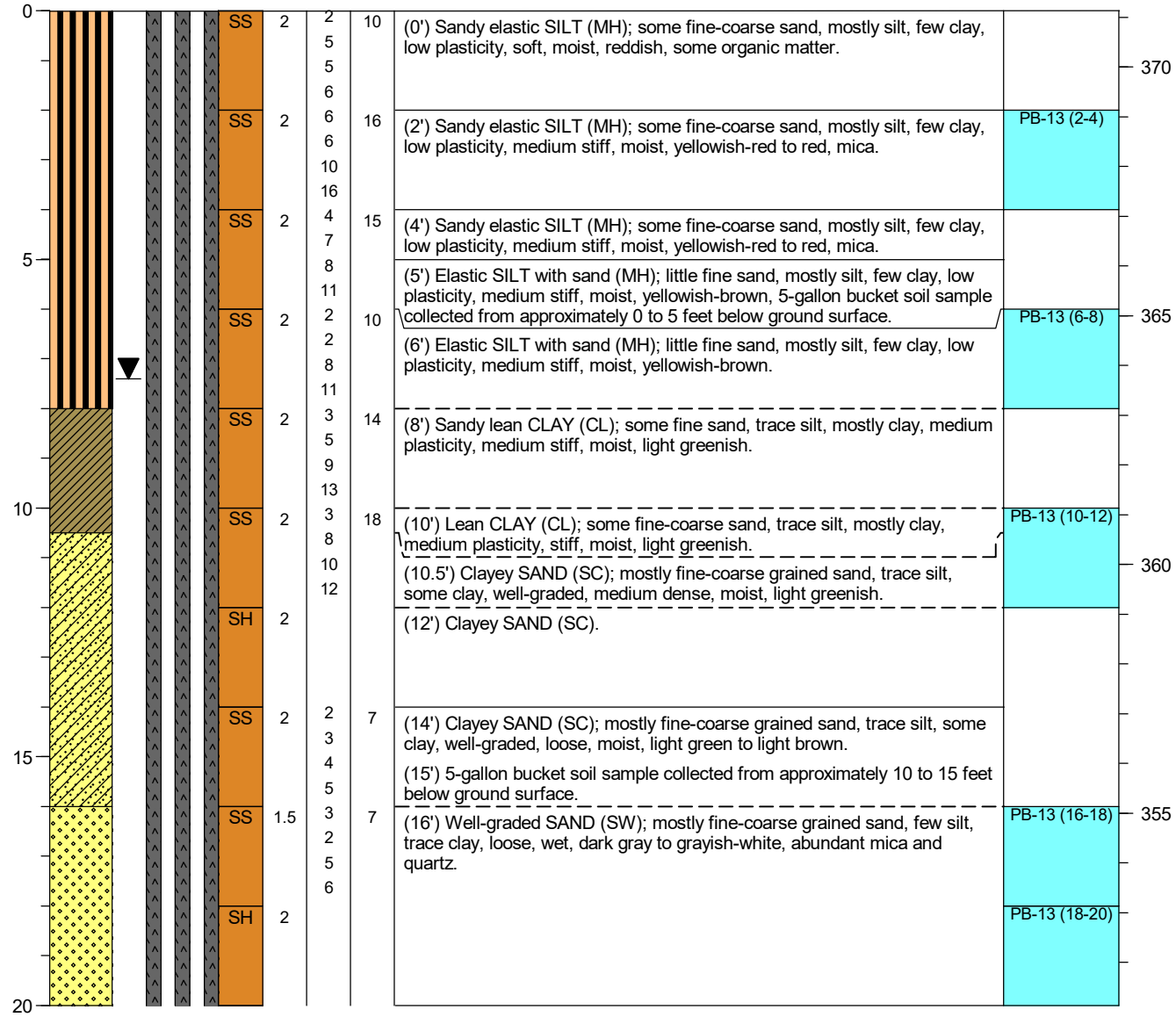
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-13S/PB-13D
Page: 1 of 6

Drilling Start Date:	12/10/2018	Boring Depth (ft):	107.8	Well Depth (ft):	50/97
Drilling End Date:	12/18/2018	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	7.19/7.74	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	7.40/7.40	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	373.31(PB-13S) 373.77(PB-13D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	370.8(PB-13S) 371.1(PB-13D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1162084.4, 2556626.1(PB-13S) 1162084.5, 2556638.8(PB-13D)	Sampling Method(s):	SS/SH/CO



DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
0				SS	2	2 5 5 6	10	(0') Sandy elastic SILT (MH); some fine-coarse sand, mostly silt, few clay, low plasticity, soft, moist, reddish, some organic matter.		370
				SS	2	6 6 10 16	16	(2') Sandy elastic SILT (MH); some fine-coarse sand, mostly silt, few clay, low plasticity, medium stiff, moist, yellowish-red to red, mica.	PB-13 (2-4)	
				SS	2	4 7 8 11	15	(4') Sandy elastic SILT (MH); some fine-coarse sand, mostly silt, few clay, low plasticity, medium stiff, moist, yellowish-red to red, mica.		
5				SS	2	2 2 8 11	10	(5') Elastic SILT with sand (MH); little fine sand, mostly silt, few clay, low plasticity, medium stiff, moist, yellowish-brown, 5-gallon bucket soil sample collected from approximately 0 to 5 feet below ground surface. (6') Elastic SILT with sand (MH); little fine sand, mostly silt, few clay, low plasticity, medium stiff, moist, yellowish-brown.	PB-13 (6-8)	365
				SS	2	3 5 9 13	14	(8') Sandy lean CLAY (CL); some fine sand, trace silt, mostly clay, medium plasticity, medium stiff, moist, light greenish.		
10				SS	2	3 8 10 12	18	(10') Lean CLAY (CL); some fine-coarse sand, trace silt, mostly clay, medium plasticity, stiff, moist, light greenish. (10.5') Clayey SAND (SC); mostly fine-coarse grained sand, trace silt, some clay, well-graded, medium dense, moist, light greenish.	PB-13 (10-12)	360
				SH	2			(12') Clayey SAND (SC).		
				SS	2	2 3 4 5	7	(14') Clayey SAND (SC); mostly fine-coarse grained sand, trace silt, some clay, well-graded, loose, moist, light green to light brown. (15') 5-gallon bucket soil sample collected from approximately 10 to 15 feet below ground surface.		
15				SS	1.5	3 2 5 6	7	(16') Well-graded SAND (SW); mostly fine-coarse grained sand, few silt, trace clay, loose, wet, dark gray to grayish-white, abundant mica and quartz.	PB-13 (16-18)	355
				SH	2				PB-13 (18-20)	
20										

NOTES: PB-13S and PB-13D are stickup wells, PB-13S is ~10ft away from PB-13D well. Depth to water at PB-13S is 7.4 feet below ground surface.
NA = Not Applicable

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-13S/PB-13D
Page: 2 of 6

Drilling Start Date:	12/10/2018	Boring Depth (ft):	107.8	Well Depth (ft):	50/97
Drilling End Date:	12/18/2018	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	7.19/7.74	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	7.40/7.40	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	373.31(PB-13S) 373.77(PB-13D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	370.8(PB-13S) 371.1(PB-13D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1162084.4, 2556626.1(PB-13S) 1162084.5, 2556638.8(PB-13D)	Sampling Method(s):	SS/SH/CO

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
20				SS	1.5	3 5 7 9	12	(20') Silty SAND (SM); mostly fine-medium grained sand, some silt, trace clay, poorly graded, medium dense, wet, light gray.		350
				SS	1.2	4 6 8 11	14	(22') Silty SAND (SM); mostly fine-medium grained sand, some silt, trace clay, poorly graded, medium dense, wet, light gray.		
				SS	0.8	4 7 9 10	16	(24') Well-graded SAND (SW); mostly fine-coarse grained sand, trace silt, trace clay, medium dense, wet, grayish-white, abundant mica, 5-gallon bucket soil sample collected from approximately 20 to 24 feet below ground surface.		
25				SS	1	5 6 9 12	15	(26') Well-graded SAND (SW); mostly fine-coarse grained sand, trace silt, trace clay, medium dense, wet, grayish-white to yellow gray.		345
				SS	0.8	2 5 7 9	12	(28') Well-graded SAND (SW); mostly fine-coarse grained sand, few silt, few clay, medium dense, wet, grayish-white to yellowish-gray, abundant mica and quartz.	PB-13 (28-30)	
30				SH	2				PB-13 (30-32)	340
				SS	0.7	9 13 15 14	28	(32') Well-graded SAND (SW); mostly fine-coarse grained sand, trace silt, trace clay, medium dense, wet, grayish-white to white, abundant mica and quartz.		
				SS	0.8	5 8 15 15	23	(34') Well-graded SAND (SW); mostly fine-coarse grained sand, trace silt, trace clay, medium dense, wet, grayish-white to white, abundant mica and quartz, laminated.		
35				SS	0.8	6 7 10 13	17	(36') Well-graded SAND (SW); mostly fine-coarse grained sand, trace silt, trace clay, medium dense, wet, grayish-white to white, abundant mica and quartz, laminated.		335
				SS	1	6 7 10 13	17	(38') Well-graded SAND (SW); mostly fine-coarse grained sand, trace silt, trace clay, medium dense, wet, grayish-white to white, abundant mica and quartz.		
40										

NOTES: PB-13S and PB-13D are stickup wells, PB-13S is ~10ft away from PB-13D well. Depth to water at PB-13S is 7.4 feet below ground surface.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

Geosyntec consultants
engineers | scientists | innovators

Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-13S/PB-13D
Page: 3 of 6

Drilling Start Date:	12/10/2018	Boring Depth (ft):	107.8	Well Depth (ft):	50/97
Drilling End Date:	12/18/2018	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	7.19/7.74	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	7.40/7.40	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	373.31(PB-13S) 373.77(PB-13D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	370.8(PB-13S) 371.1(PB-13D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1162084.4, 2556626.1(PB-13S) 1162084.5, 2556638.8(PB-13D)	Sampling Method(s):	SS/SH/CO

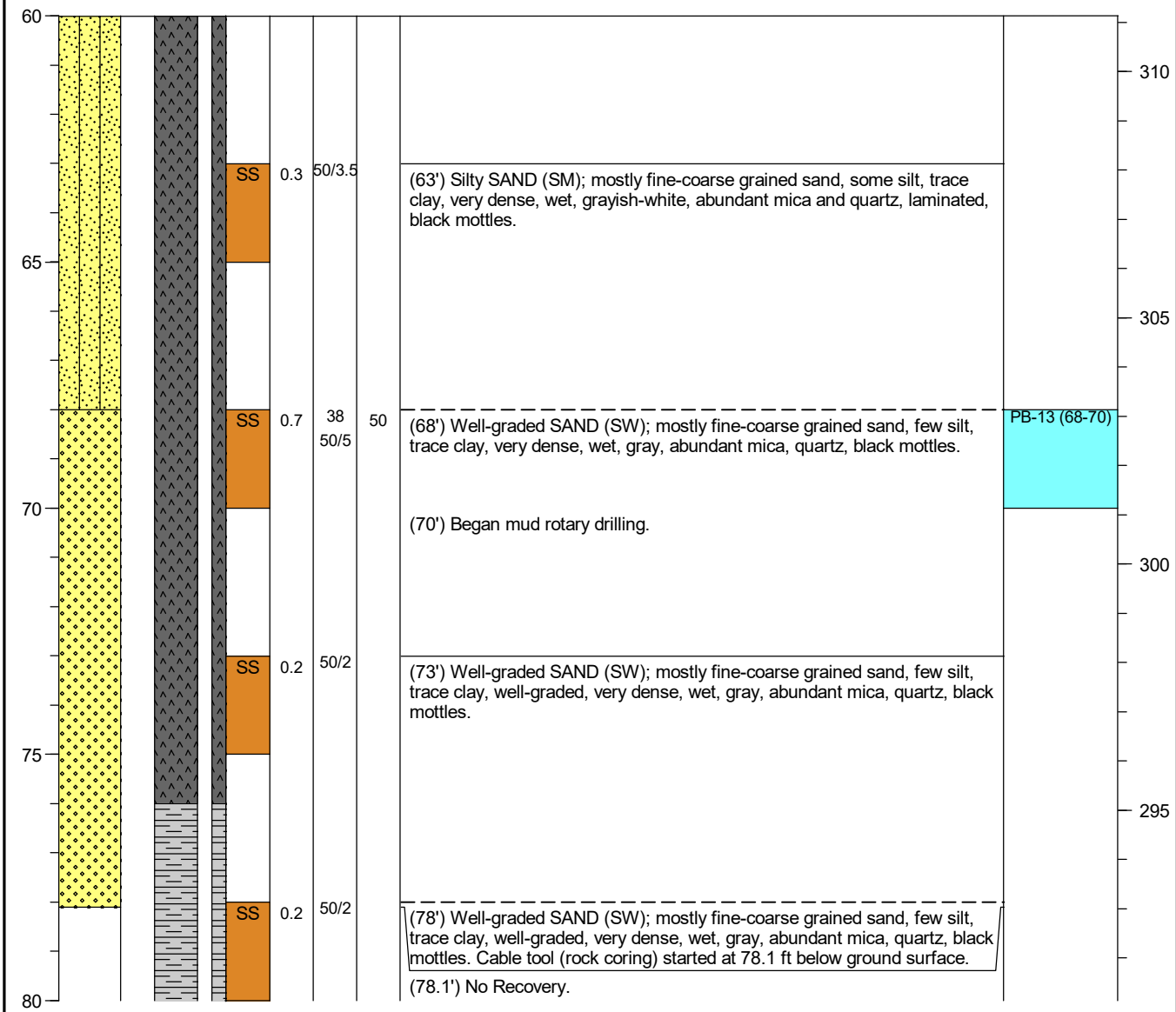
DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
40				SS	0.8	8 10 13 18	23	(40') Well-graded SAND (SW); mostly fine-coarse grained sand, trace silt, trace clay, medium dense, wet, grayish-white to white, abundant mica and quartz.		330
				SS	1.3	7 7 9 16	16	(42') Silty SAND (SM); mostly fine-coarse grained sand, some silt, trace clay, well-graded, medium dense, wet, green to white, abundant mica and quartz.	PB-13 (42-44)	
45				SS	1	10 17 30 41	47	(44') Silty SAND (SM); mostly fine-coarse grained sand, some silt, trace clay, well-graded, dense, wet, greenish, abundant mica and quartz.		325
				SS	0.3	5 6 16 42	22	(46') Silty SAND (SM); mostly fine-coarse grained sand, some silt, trace clay, well-graded, medium dense, wet, green to white, abundant mica and quartz, laminated.		
				SS	1.1	32 26 31 43	57	(48') Silty SAND (SM); mostly fine-coarse grained sand, some silt, trace clay, well-graded, very dense, wet, dark gray to dark brown to white, abundant mica and quartz, laminated.		
50										320
				SS	0.4	21 50/5	50	(53') Silty SAND (SM); mostly fine-coarse grained sand, some silt, trace clay, very dense, wet, grayish-white, abundant mica and quartz, laminated, black mottles. (54') Top of PWR.		
55										315
				SS	0.3	50/4		(58') Silty SAND (SM); mostly fine-coarse grained sand, some silt, trace clay, very dense, wet, grayish-white, abundant mica and quartz, laminated, black mottles.		
60										

NOTES: PB-13S and PB-13D are stickup wells, PB-13S is ~10ft away from PB-13D well. Depth to water at PB-13S is 7.4 feet below ground surface.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

Geosyntec consultants	Client: Georgia Power Company Project: Plant Branch CCR Landfill Site Investigation Address: 1100 Milledgeville Rd, Milledgeville	WELL LOG Well No. PB-13S/PB-13D Page: 4 of 6

Drilling Start Date:	12/10/2018	Boring Depth (ft):	107.8	Well Depth (ft):	50/97
Drilling End Date:	12/18/2018	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	7.19/7.74	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	7.40/7.40	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	373.31(PB-13S) 373.77(PB-13D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	370.8(PB-13S) 371.1(PB-13D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1162084.4, 2556626.1(PB-13S) 1162084.5, 2556638.8(PB-13D)	Sampling Method(s):	SS/SH/CO



NOTES: PB-13S and PB-13D are stickup wells, PB-13S is ~10ft away from PB-13D well. Depth to water at PB-13S is 7.4 feet below ground surface.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
Project: Plant Branch CCR Landfill Site Investigation
Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-13S/PB-13D
Page: 5 of 6

Drilling Start Date:	12/10/2018	Boring Depth (ft):	107.8	Well Depth (ft):	50/97
Drilling End Date:	12/18/2018	Boring Diameter (in):	6.50	Well Diam. (in)/Screen Slot (in):	2.0/0.010
Drilling Company:	Thompson Engineering	Static Water Level (ft):	7.19/7.74	Riser Material:	Sch 40 PVC
Drilling Method:	Hollow Stem Auger	DTW After Drilling (ft):	7.40/7.40	Screen Material:	Sch 40 PVC Slotted
Drilling Equipment:	D-50	Top of Casing Elev. (ft):	373.31(PB-13S) 373.77(PB-13D)	Sanitary Seal:	Bentonite Pellets
Driller:	Phil Pitts	Ground Elev. (ft):	370.8(PB-13S) 371.1(PB-13D)	Filter Pack:	Sand
Logged By:	Nardos Tilahun	Location (X,Y):	1162084.4, 2556626.1(PB-13S) 1162084.5, 2556638.8(PB-13D)	Sampling Method(s):	SS/SH/CO

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	Recovery (ft)	Blow Counts	N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
80										290
				CO	0			(82') No Recovery.		
85										285
				CO	3		8	(87') MET ROCK (GNEISS); coarse grained, moderately weathered, hard, intensely fractured, wet, dark biotite and white feldspar minerals, competent, iron oxidation on fracture surface, fractures not healed. Coring recovery from 78 to 87 feet below ground surface (ft bgs) was zero, top of competent rock could be at 87 ft bgs.		
90										280
				CO	2.2		0	(92') MET ROCK (GNEISS); coarse grained, moderately weathered, hard, intensely fractured, wet, dark biotite and white feldspar minerals, competent, iron oxidation on fracture surface, fractures not healed.		
95										275
				CO	5		100	(97') MET ROCK (GNEISS); coarse grained, fresh, hard, unfractured, dark biotite and white feldspar minerals, competent, strong, flow banding.		
100										

NOTES: PB-13S and PB-13D are stickup wells, PB-13S is ~10ft away from PB-13D well. Depth to water at PB-13S is 7.4 feet below ground surface.
NA = Not Applicable

Boring log revised with new survey data dated 7/23/2020.

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Client: Georgia Power Company
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Address: 1100 Milledgeville Rd, Milledgeville

WELL LOG
Well No. PB-13S/PB-13D
Page: 6 of 6

Drilling Start Date:	**12/10/2018**	Boring Depth (ft):	**107.8**	Well Depth (ft):	**50/97**
Drilling End Date:	**12/18/2018**	Boring Diameter (in):	**6.50**	Well Diam. (in)/Screen Slot (in):	**2.0/0.010**
Drilling Company:	**Thompson Engineering**	Static Water Level (ft):	**7.19/7.74**	Riser Material:	**Sch 40 PVC**
Drilling Method:	**Hollow Stem Auger**	DTW After Drilling (ft):	**7.40/7.40**	Screen Material:	**Sch 40 PVC Slotted**
Drilling Equipment:	**D-50**	Top of Casing Elev. (ft):	**373.31(PB-13S) 373.77(PB-13D)**	Sanitary Seal:	**Bentonite Pellets**
Driller:	**Phil Pitts**	Ground Elev. (ft):	**370.8(PB-13S) 371.1(PB-13D)**	Filter Pack:	**Sand**
Logged By:	**Nardos Tilahun**	Location (X,Y):	**1162084.4, 2556626.1(PB-13S) 1162084.5, 2556638.8(PB-13D)**	Sampling Method(s):	**SS/SH/CO**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT: Sample Type	COLLECT: Recovery (ft)	COLLECT: Blow Counts	COLLECT: N Value RQD (%)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: Lab Sample	ELEV. (ft msl)
100										270
				CO	5		100	(102') MET ROCK (GNEISS); coarse grained, fresh, hard, unfractured, dark biotite and white feldspar minerals, competent, strong, flow banding.		
105										265
				CO	0.8		100	(107') MET ROCK (GNEISS); coarse grained, fresh, hard, unfractured, dark biotite and white feldspar minerals, competent, strong, flow banding.		
								(107.8') Boring terminated.		
110										

NOTES: PB-13S and PB-13D are stickup wells, PB-13S is ~10ft away from PB-13D well. Depth to water at PB-13S is 7.4 feet below ground surface.
NA = Not Applicable

Easting and Northing in NAD 83.
Elevation in NAVD 88.

APPENDIX A

Drilling Bonds

CONTINUATION CERTIFICATE

SAFECO Insurance Company of America , Surety upon

a certain Bond No. 4993104

dated effective June 30, 1987
(MONTH-DAY-YEAR)

on behalf of Southern Company Services, Inc.
(PRINCIPAL)

and in favor of Georgia Department of Natural Resources, Environmental Protection Division

(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on June 30, 2017
(MONTH-DAY-YEAR)

and ending on June 30, 2018
(MONTH-DAY-YEAR)

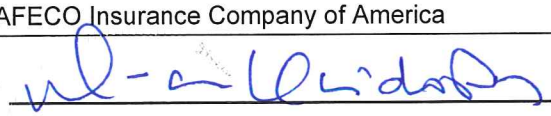
Amount of bond $10,000.00

Description of bond Water Well Contractors & Drillers

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on May 04, 2017
(MONTH-DAY-YEAR)

SAFECO Insurance Company of America

By 

D- Ann Kleidosty, Attorney-in-Fact

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.
This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 7710213

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That American States Insurance Company is a corporation duly organized under the laws of the State of Indiana, that First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America are corporations duly organized under the laws of the State of New Hampshire (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Brooke A. Sharp; Christine Doczy; D-Ann Kleidosty; Gary D. Eklund; Sharon J. Potts; Sylvia M. Ogle

all of the city of Atlanta, state of GA each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 4th day of April, 2017.

FIRST NATIONAL INSURANCE COMPANY OF AMERICA INCORPORATED 1928 NEW HAMPSHIRE
GENERAL INSURANCE COMPANY OF AMERICA INCORPORATED 1923 NEW HAMPSHIRE
SAFECO INSURANCE COMPANY OF AMERICA INCORPORATED 1953 NEW HAMPSHIRE
AMERICAN STATES INSURANCE COMPANY INCORPORATED 1929 INDIANA

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America

By: David M. Carey
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 4th day of April, 2017, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.

TERESA PASTELLA COMMONWEALTH OF PENNSYLVANIA NOTARY PUBLIC

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 4th day of May, 2017.

FIRST NATIONAL INSURANCE COMPANY OF AMERICA INCORPORATED 1928 NEW HAMPSHIRE
GENERAL INSURANCE COMPANY OF AMERICA INCORPORATED 1923 NEW HAMPSHIRE
SAFECO INSURANCE COMPANY OF AMERICA INCORPORATED 1953 NEW HAMPSHIRE
AMERICAN STATES INSURANCE COMPANY INCORPORATED 1929 INDIANA

By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

SURETY RIDER

To be attached to and form a part of

Bond No. 800031223

Type of Bond: Performance Bond for Water Well Contractors

dated effective June 30, 2017
(MONTH-DAY-YEAR)

executed by Michael C. Rice/Cascade Drilling, L.P. , as Principal,
(PRINCIPAL)

and by Atlantic Specialty Insurance Company , as Surety,

in favor of State of Georgia
(OBLIGEE)

in consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing

Coverage under the bond to include:
Michael Coleman

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective December 21, 2017
(MONTH-DAY-YEAR)

Signed and Sealed December 21, 2017
(MONTH-DAY-YEAR)

Michael C. Rice/Cascade Drilling, L.P.
(PRINCIPAL)

By: _____
(PRINCIPAL)

Atlantic Specialty Insurance Company

By: _____
Elizabeth R. Hahn, Attorney-in-Fact

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 986 NEW YORK

S-0443/GE 8/08

XDP

OneBeacon
INSURANCE GROUP

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Deanna M. French, Jill A. Wallace, Susan B. Larson, Elizabeth R. Hahn, Jana M. Roy, Scott McGilvray, Mindee L. Rankin, Ronald J. Lange, John R. Claeys, Roger Kaltenbach, Guy Armfield, Scott Fisher**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **sixty million dollars ($60,000,000)** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the signature of an Authorized Officer, the signature of the Secretary or the Assistant Secretary, and the Company seal may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for purposes only of executing and sealing any bond, undertaking, recognizance or other written obligation in the nature thereof, and any such signature and seal where so used, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this eighth day of December, 2014.

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

By _____
Paul J. Brehm, Senior Vice President

STATE OF MINNESOTA
HENNEPIN COUNTY

On this eighth day of December, 2014, before me personally came Paul J. Brehm, Senior Vice President of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, that he is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.

TARA JANELLE STAFFORD
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2020

_____
Notary Public

I, the undersigned, Assistant Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York Corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 21 day of December, 2017

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

This Power of Attorney expires
October 1, 2019

_____
James G. Jordan, Assistant Secretary

Bond Number K08315607

Performance Bond For Water Well Contractors And Drillers

Name of Water Well Contractor or Driller Michael C. Rice/Cascade Drilling, L.P.

Know All Men By These Present

That we Michael C. Rice/Cascade Drilling, L.P. AND ANY AND ALL EMPLOYEES, OFFICERS AND PARTNERS, as Principal, and Westchester Fire Insurance Company as Surety, are held and firmly bound unto the Director of the Environmental Protection Division (Director), Department of Natural Resources, State of Georgia and his or her Successor or Successors in office, as Obligee, in the full sum of **TWENTY THOUSAND AND NO/00 DOLLARS ($20.000.00)** for the payment of which will and truly to be made, we bind ourselves, our heir, administrators, successors and assigns, jointly and severally, by the present.

WHEREAS, the WATER WELL STANDARDS ACT OF 1985 (Ga. Laws 1985, p. 1192) (the "ACT") requires that water well contractors and drillers file performance bonds with the director to ensure compliance with the ACT; and WHEREAS the above bound PRINCIPAL is subject to the terms and provisions of said ACT. NOW, THEREFORE, the conditions of this obligation are such that if the above bound PRINCIPAL shall fully and faithfully perform the duties and in all things comply with the procedures and standards set forth in the ACT as now and hereafter amended, and the rules and regulations promulgated pursuant thereto, including but not limited to the correction of any violation of such procedures and standards upon discovery, irrespective of whether such discovery is made before completion of any well subject to this bond, then this obligation shall be void; otherwise of full force and effect.

And Surety, for value received, agrees that no amendment to existing laws, rules or regulations, or adoption of new laws, rules or regulations shall in anyway discharge its obligation on this bond, and does hereby waive notice of any such amendment, adoption or modification.

This bond shall be effective from date of issuance and shall continue in effect until terminated by expiration, mutual agreement or cancellation upon sixty (60) days written notice to Principal and Obligee; provided that the rights of the obligee and beneficiaries under this bond which arose prior to such termination shall continue.

The bond is effective 9/20/13 and unless sooner terminated, this bond shall terminate June 30, 2015. In Witness Thereof the Principal and Surety have caused these present to be duly signed and sealed, this 20th day of, September 2013.

Michael C. Rice/Cascade Drilling, L.P.

PRINCIPAL, BY _____ (L.S.) TITLE: _____

Westchester Fire Insurance Company

SURETY BY: Roxana Palacios

Roxana Palacios, Attorney-in-Fact

GEORGIA REGISTERED AGENT N/A SEAL:

Revised December 2012

SURETY RIDER

To be attached to and form a part of

Bond No. 800031223

Type of Bond: Performance Bond for Water Well Contractors

dated effective June 30, 2017
(MONTH-DAY-YEAR)

executed by Michael C. Rice/Cascade Drilling, L.P. , as Principal,
(PRINCIPAL)

and by Atlantic Specialty Insurance Company , as Surety,

in favor of State of Georgia
(OBLIGEE)

in consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing

Coverage under the bond to include:
Michael Coleman

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective December 21, 2017
(MONTH-DAY-YEAR)

Signed and Sealed December 21, 2017
(MONTH-DAY-YEAR)

Michael C. Rice/Cascade Drilling, L.P.
(PRINCIPAL)

By: _____
(PRINCIPAL)

Atlantic Specialty Insurance Company

By: _____
Elizabeth R. Hahn, Attorney-in-Fact

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 986 NEW YORK

S-0443/GE 8/08

XDP

OneBeacon
INSURANCE GROUP

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Deanna M. French, Jill A. Wallace, Susan B. Larson, Elizabeth R. Hahn, Jana M. Roy, Scott McGilvray, Mindee L. Rankin, Ronald J. Lange, John R. Claeys, Roger Kaltenbach, Guy Armfield, Scott Fisher**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **sixty million dollars ($60,000,000)** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the signature of an Authorized Officer, the signature of the Secretary or the Assistant Secretary, and the Company seal may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for purposes only of executing and sealing any bond, undertaking, recognizance or other written obligation in the nature thereof, and any such signature and seal where so used, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this eighth day of December, 2014.

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

By _____
Paul J. Brehm, Senior Vice President

STATE OF MINNESOTA
HENNEPIN COUNTY

On this eighth day of December, 2014, before me personally came Paul J. Brehm, Senior Vice President of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, that he is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.

TARA JANELLE STAFFORD
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2020

_____
Notary Public

I, the undersigned, Assistant Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York Corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 21 day of December, 2017

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

This Power of Attorney expires
October 1, 2019

_____
James G. Jordan, Assistant Secretary

CONTINUATION CERTIFICATE

SAFECO Insurance Company of America , Surety upon

a certain Bond No. 4993104

dated effective June 30, 1987
(MONTH-DAY-YEAR)

on behalf of Southern Company Services, Inc.
(PRINCIPAL)

and in favor of Georgia Department of Natural Resources, Environmental Protection Division

(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on June 30, 2017
(MONTH-DAY-YEAR)

and ending on June 30, 2018
(MONTH-DAY-YEAR)

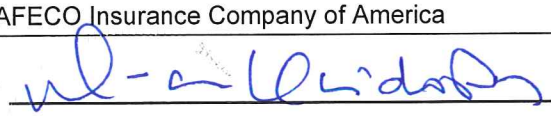
Amount of bond $10,000.00

Description of bond Water Well Contractors & Drillers

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on May 04, 2017
(MONTH-DAY-YEAR)

SAFECO Insurance Company of America

By 

D- Ann Kleidosty, Attorney-in-Fact

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.
This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 7710213

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That American States Insurance Company is a corporation duly organized under the laws of the State of Indiana, that First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America are corporations duly organized under the laws of the State of New Hampshire (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Brooke A. Sharp; Christine Doczy; D-Ann Kleidosty; Gary D. Eklund; Sharon J. Potts; Sylvia M. Ogle

all of the city of Atlanta, state of GA each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 4th day of April, 2017.

FIRST NATIONAL INSURANCE COMPANY OF AMERICA INCORPORATED 1928 NEW HAMPSHIRE
GENERAL INSURANCE COMPANY OF AMERICA INCORPORATED 1923 NEW HAMPSHIRE
SAFECO INSURANCE COMPANY OF AMERICA INCORPORATED 1953 NEW HAMPSHIRE
AMERICAN STATES INSURANCE COMPANY INCORPORATED 1929 INDIANA

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America

By: David M. Carey
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 4th day of April, 2017, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.

TERESA PASTELLA COMMONWEALTH OF PENNSYLVANIA NOTARY PUBLIC

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 4th day of May, 2017.

FIRST NATIONAL INSURANCE COMPANY OF AMERICA INCORPORATED 1928 NEW HAMPSHIRE
GENERAL INSURANCE COMPANY OF AMERICA INCORPORATED 1923 NEW HAMPSHIRE
SAFECO INSURANCE COMPANY OF AMERICA INCORPORATED 1953 NEW HAMPSHIRE
AMERICAN STATES INSURANCE COMPANY INCORPORATED 1929 INDIANA

By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

CLIENT'S COPY

SURETY BOND CONTINUATION CERTIFICATE

TO: State of Georgia
Division of Environmental Protection
2 Martin Luther King Jr. Drive SE
Suite 1252
Atlanta, GA 30334

To be attached to and form a part of: Performance Bond for Well Contractors and Drillers

Principal on the Bond: Michael C. Rice/Cascade Drilling, L.P.

Surety Bond Number: K08315607

Bond Amount: Twenty Thousand and 00/100 Dollars ($20,000.00)

In consideration of the agreed premium charged for this bond, it is understood and agreed that the following change shall be made to this obligation:

[x] **CONTINUATION CERTIFICATE**

This certificate extends the life of the bond to June 30, 2017. It is executed upon the express condition that the surety's liability under said bond, together with this and all previous continuation certificates, shall not be cumulative and shall in no event exceed the amount specifically set forth in said bond or any existing certificate changing the amount of said bond.

Signed, sealed and dated this 26th day of May , 2015 .

Westchester Fire Insurance Company

By: Katie L

Katie Snider, Attorney-in-Fact

Surety of Record: Westchester Fire Insurance Company
436 Walnut Street
Philadelphia, PA 19106
Phone: (415) 547-4513

Agent of Record: Kibble & Prentice, a USI Company
601 Union Street, Suite 1000
Seattle, WA 98101
Phone: (206) 441-6300

Bond Number K08315607

Performance Bond For Water Well Contractors And Drillers

Name of Water Well Contractor or Driller Michael C. Rice/Cascade Drilling, L.P.

Know All Men By These Present

That we Michael C. Rice/Cascade Drilling, L.P. AND ANY AND ALL EMPLOYEES, OFFICERS AND PARTNERS, as Principal, and Westchester Fire Insurance Company as Surety, are held and firmly bound unto the Director of the Environmental Protection Division (Director), Department of Natural Resources, State of Georgia and his or her Successor or Successors in office, as Obligee, in the full sum of **TWENTY THOUSAND AND NO/00 DOLLARS ($20.000.00)** for the payment of which will and truly to be made, we bind ourselves, our heir, administrators, successors and assigns, jointly and severally, by the present.

WHEREAS, the WATER WELL STANDARDS ACT OF 1985 (Ga. Laws 1985, p. 1192) (the "ACT") requires that water well contractors and drillers file performance bonds with the director to ensure compliance with the ACT; and WHEREAS the above bound PRINCIPAL is subject to the terms and provisions of said ACT. NOW, THEREFORE, the conditions of this obligation are such that if the above bound PRINCIPAL shall fully and faithfully perform the duties and in all things comply with the procedures and standards set forth in the ACT as now and hereafter amended, and the rules and regulations promulgated pursuant thereto, including but not limited to the correction of any violation of such procedures and standards upon discovery, irrespective of whether such discovery is made before completion of any well subject to this bond, then this obligation shall be void; otherwise of full force and effect.

And Surety, for value received, agrees that no amendment to existing laws, rules or regulations, or adoption of new laws, rules or regulations shall in anyway discharge its obligation on this bond, and does hereby waive notice of any such amendment, adoption or modification.

This bond shall be effective from date of issuance and shall continue in effect until terminated by expiration, mutual agreement or cancellation upon sixty (60) days written notice to Principal and Obligee; provided that the rights of the obligee and beneficiaries under this bond which arose prior to such termination shall continue.

The bond is effective 9/20/13 and unless sooner terminated, this bond shall terminate June 30, 2015. In Witness Thereof the Principal and Surety have caused these present to be duly signed and sealed, this 20th day of, September 2013.

Michael C. Rice/Cascade Drilling, L.P.

PRINCIPAL, BY _____ (L.S.) TITLE: _____

Westchester Fire Insurance Company

SURETY BY: Roxana Palacios

Roxana Palacios, Attorney-in-Fact

GEORGIA REGISTERED AGENT N/A SEAL:

Revised December 2012

CLIENT'S COPY

SURETY BOND CONTINUATION CERTIFICATE

TO: State of Georgia
Division of Environmental Protection
2 Martin Luther King Jr. Drive SE
Suite 1252
Atlanta, GA 30334

To be attached to and form a part of: Performance Bond for Well Contractors and Drillers

Principal on the Bond: Michael C. Rice/Cascade Drilling, L.P.

Surety Bond Number: K08315607

Bond Amount: Twenty Thousand and 00/100 Dollars ($20,000.00)

In consideration of the agreed premium charged for this bond, it is understood and agreed that the following change shall be made to this obligation:

[x] **CONTINUATION CERTIFICATE**

This certificate extends the life of the bond to June 30, 2017. It is executed upon the express condition that the surety's liability under said bond, together with this and all previous continuation certificates, shall not be cumulative and shall in no event exceed the amount specifically set forth in said bond or any existing certificate changing the amount of said bond.

Signed, sealed and dated this 26th day of May , 2015 .

Westchester Fire Insurance Company

By: Katie L

Katie Snider, Attorney-in-Fact

Surety of Record: Westchester Fire Insurance Company
436 Walnut Street
Philadelphia, PA 19106
Phone: (415) 547-4513

Agent of Record: Kibble & Prentice, a USI Company
601 Union Street, Suite 1000
Seattle, WA 98101
Phone: (206) 441-6300

COPY

CONTINUATION CERTIFICATE

Atlantic Specialty Insurance Company , Surety upon

a certain Bond No. **800031223**

dated effective June 30, 2017
(MONTH-DAY-YEAR)

on behalf of Michael C. Rice and Cascade Drilling, L.P., any and all employees, officers and partners
(PRINCIPAL)

and in favor of State of Georgia
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on June 30, 2019
(MONTH-DAY-YEAR)

and ending on June 30, 2021
(MONTH-DAY-YEAR)

Amount of bond Thirty Thousand and Zero/100 ($30,000.00)

Description of bond Water Well Contractor Performance Bond

Premium: $1,200.00

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on May 9, 2019
(MONTH-DAY-YEAR)
Atlantic Specialty Insurance Company

By _____
Attorney-in-Fact Elizabeth R. Hahn

Parker, Smith & Feek, Inc.
Agent

2233 112th Ave NE Bellevue, WA 98004
Address of Agent

(425) 709-3600
Telephone Number of Agent

S-0157/GE 8/08

XDP

OneBeacon
INSURANCE GROUP

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Deanna M. French, Susan B. Larson, Elizabeth R. Hahn, Jana M. Roy, Scott McGilvray, Mindee L. Rankin, Ronald J. Lange, John R. Claeys, Roger Kaltenbach, Guy Armfield, Scott Fisher, Andrew P. Larsen, Nicholas Fredrickson**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **sixty million dollars ($60,000,000)** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the signature of an Authorized Officer, the signature of the Secretary or the Assistant Secretary, and the Company seal may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for purposes only of executing and sealing any bond, undertaking, recognizance or other written obligation in the nature thereof, and any such signature and seal where so used, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this twenty-sixth day of October, 2017.

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

By _____
Paul J. Brehm, Senior Vice President

STATE OF MINNESOTA
HENNEPIN COUNTY

On this twenty-sixth day of October, 2017, before me personally came Paul J. Brehm, Senior Vice President of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, that he is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.

TARA JANELLE STAFFORD
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2020

_____
Notary Public

I, the undersigned, Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York Corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 9 day of May 2019

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

This Power of Attorney expires
October 1, 2019

_____
Christopher V. Jerry, Secretary

APPENDIX A

Certified Well

Survey Report

METRO ENGINEERING & SURVEYING CO., INC.
SURVEYORS - ENGINEERS - PHOTOGRAMMETRISTS
PROVIDING PROFESSIONAL SERVICE SINCE 1967

1469 HIGHWAY 20 WEST • MCDONOUGH, GA 30253
phone: 770-707-0777 fax: 770.707-0755
WWW.METRO-ENGINEERING.COM

SURVEYOR'S REPORT

SCOPE OF WORK:

Field survey of existing monitoring wells at Georgia Power Company, Plant Branch in Milledgeville, GA.

Horizontal and vertical datum was derived from RTK GPS observations with corrections from the eGPS network and conventional surveying equipment. Horizontal datum is Georgia State Plane, West Zone, NAD83(2011) and vertical datum is NAVD88.

EQUIPMENT USED TO ESTABLISH THE MONITORING WELL LOCATIONS:

Trimble R8 Dual Frequency GPS Receiver
Leica TS16 Total Station
Leica DNA10 Digital Level

CERTIFICATION:

I hereby certify that the center of well casing (PVC) has a horizontal accuracy of 0.5+/- feet or better using a Trimble R8 Dual Frequency RTK (survey-grade) global positioning system receiver referencing the Georgia State Plane, west zone, NAD83(2011) coordinate system in US survey feet. The top of well casing (PVC) elevation data was determined in feet above mean sea level based on the NAVD88 vertical datum. Vertical data was confirmed to be accurate within 0.01 foot through establishment of a closed level check loop with a Leica DNA10 digital level having a published accuracy of 0.9mm per dual-traverse kilometer.

James R. Green R.L.S. No. 2543

GEORGIA REGISTERED NO. LS002543 PROFESSIONAL LAND SURVEYOR JAMES RANDOLPH GREEN

Date: 7/23/20

Plant Branch
Monitoring Well Locations
Ash Pond B, C & D
July 22, 2020

Well ID	LATITUDE	LONGITUDE	NAIL NORTHING	NAIL EASTING	NAIL ELEVATION	PVC NORTHING	PVC EASTING	TOP PVC ELEVATION	ELEV AT BASE CONC/GRD
BRGWA-12I	N33.197981	W83.314877	1164300.90	2557137.50	431.48	1164301.2	2557138.9	434.39	431.5
BRGWA-12S	N33.197941	W83.314864	1164286.30	2557141.70	431.64	1164286.6	2557142.9	434.64	431.6
BRGWA-23S	N33.194311	W83.312528	1162970.70	2557868.20	425.43	1162971.7	2557868.1	428.24	425.5
BRGWC-25I	N33.187670	W83.301326	1160584.70	2561315.10	354.96	1160583.7	2561315.1	357.37	355.0
BRGWC-27I	N33.185265	W83.306589	1159696.00	2559712.80	363.97	1159695.3	2559712.2	366.86	364.0
BRGWC-29I	N33.186890	W83.302200	1160298.70	2561049.90	350.61	1160297.6	2561050.2	353.23	350.6
BRGWC-30I	N33.190566	W83.313141	1161608.20	2557692.60	349.97	1161607.6	2557691.8	352.61	350.0
BRGWC-32S	N33.187992	W83.310531	1160678.60	2558497.60	403.62	1160677.7	2558497.9	406.39	403.6
BRGWC-45	N33.192199	W83.302065	1162229.10	2561074.90	381.65	1162229.8	2561075.5	384.58	381.6
BRGWC-47	N33.193530	W83.307343	1162701.00	2559456.40	408.75	1162700.7	2559456.7	411.20	408.8
BRGWC-50	N33.190421	W83.297841	1161593.70	2562372.00	378.71	1161593.3	2562372.9	381.35	378.8
BRGWC-52I	N33.189551	W83.298594	1161275.50	2562144.70	381.12	1161275.0	2562145.3	383.87	381.2
PZ-11S	N33.192944	W83.315371	1162466.00	2557002.70	390.95	1162467.3	2557002.5	393.99	390.9
PZ-12D	N33.198010	W83.314885	1164311.90	2557135.00	431.40	1164311.9	2557136.4	434.09	431.4
PZ-18I	N33.188252	W83.312988	1160766.20	2557747.10	359.65	1160766.2	2557745.5	362.55	359.6
PZ-18S	N33.188228	W83.312982	1160757.30	2557748.70	359.77	1160757.3	2557747.4	362.82	359.7
PZ-19I	N33.185563	W83.309241	1159797.90	2558900.70	368.85	1159797.1	2558900.0	371.74	368.9
PZ-19S	N33.185586	W83.309258	1159806.00	2558895.60	368.50	1159805.4	2558894.5	371.42	368.4
PZ-20I	N33.184705	W83.305130	1159494.60	2560159.30	362.16	1159495.4	2560160.2	365.34	362.2
PZ-20S	N33.184691	W83.305140	1159489.40	2560156.20	362.19	1159490.3	2560157.0	365.41	362.2
PZ-21I	N33.187691	W83.301283	1160592.70	2561327.70	355.85	1160591.6	2561328.2	358.92	355.8
PZ-21S	N33.187694	W83.301305	1160593.70	2561321.20	355.43	1160592.4	2561321.3	358.52	355.5
PZ-23I	N33.194321	W83.312497	1162974.30	2557877.90	425.00	1162975.4	2557877.7	427.74	425.1
PZ-26I	N33.187898	W83.300306	1160670.00	2561625.80	368.01	1160669.0	2561626.4	370.63	368.0
PZ-28I	N33.184732	W83.305158	1159504.90	2560150.40	362.45	1159505.1	2560151.7	364.81	362.5
PZ-31S	N33.188716	W83.312244	1160937.10	2557972.70	374.35	1160936.9	2557971.8	376.77	374.3
PZ-39	N33.196254	W83.313842	1163674.90	2557459.80	431.92	1163675.4	2557460.5	434.78	432.0
PZ-43	N33.191985	W83.298942	N.A.	N.A.	N.A.	1162159.8	2562031.3	383.71	381.0
PZ-44	N33.190799	W83.300405	1161723.80	2561586.80	380.49	1161724.6	2561587.5	383.04	380.5
PZ-46	N33.193658	W83.303739	1162755.50	2560558.40	382.09	1162756.2	2560559.0	384.64	382.1
PZ-48	N33.194504	W83.310642	1163047.70	2558445.00	418.20	1163046.7	2558444.6	420.90	418.3
PZ-49	N33.195198	W83.301871	1163321.90	2561124.90	382.22	1163321.2	2561125.7	384.99	382.2
PZ-51I	N33.190523	W83.297623	1161631.40	2562438.30	377.88	1161631.1	2562439.3	380.52	378.0
PZ-51S	N33.190474	W83.297644	1161613.90	2562432.10	377.79	1161613.4	2562433.1	380.27	377.9

Plant Branch
Monitoring Well Locations
Ash Pond E
Jul;y 22, 2020

Well ID	LATITUDE	LONGITUDE	NAIL NORTHING	NAIL EASTING	NAIL ELEVATION	PVC NORTHING	PVC EASTING	TOP PVC ELEVATION	ELEV AT BASE CONC/ GRD
BRD-1	N33.206557	W83.303323	N.A.	N.A.	N.A.	1167450.6	2560647.5	375.17	372.4
BRD-2	N33.192972	W83.336911	N.A.	N.A.	N.A.	1162424.7	2550413.1	444.48	441.2
BRGWA-2I	N33.205913	W83.338279	1167129.7	2549958.4	440.47	1167130.0	2549957.3	443.14	440.5
BRGWA-2S	N33.205940	W83.338294	1167139.2	2549953.9	440.43	1167139.7	2549952.6	443.20	440.4
BRGWA-5I	N33.214317	W83.339996	1170184.6	2549409.0	441.17	1170183.7	2549408.0	443.79	441.1
BRGWA-5S	N33.214300	W83.339971	1170178.5	2549416.5	440.87	1170177.5	2549415.5	443.86	440.8
BRGWA-6S	N33.215780	W83.333008	1170733.3	2551542.2	455.77	1170732.9	2551540.8	458.96	455.8
BRGWC-17S	N33.203532	W83.322836	1166300.8	2554686.9	362.12	1166301.5	2554687.7	365.32	362.2
BRGWC-24S	N33.192629	W83.296220	1162401.9	2562862.9	351.35	1162400.9	2562862.2	354.10	351.4
BRGWC-33S	N33.208371	W83.324826	1168056.7	2554064.0	414.10	1168057.0	2554064.8	416.68	414.2
BRGWC-34S	N33.206518	W83.324300	1167384.0	2554230.3	389.16	1167384.0	2554231.2	391.96	389.2
BRGWC-35S	N33.204484	W83.323519	1166645.7	2554475.2	363.66	1166646.0	2554476.3	366.31	363.7
BRGWC-36S	N33.201997	W83.322833	1165743.2	2554694.1	383.04	1165742.7	2554693.3	389.84	383.1
BRGWC-37S	N33.200205	W83.321914	1165092.1	2554978.9	444.35	1165093.0	2554979.5	447.05	444.4
BRGWC-38S	N33.198277	W83.321812	1164391.5	2555015.6	429.68	1164391.9	2555016.5	432.24	429.8
PB-10D	N33.196004	W83.310294	N.A.	N.A.	N.A.	1163593.4	2558546.7	400.31	397.5
PB-10S	N33.195992	W83.310279	N.A.	N.A.	N.A.	1163588.9	2558551.2	400.91	397.6
PB-13D	N33.191900	W83.316570	N.A.	N.A.	N.A.	1162084.5	2556638.8	373.77	371.1
PB-13S	N33.191900	W83.316612	N.A.	N.A.	N.A.	1162084.4	2556626.1	373.31	370.8
PB-1S	N33.199673	W83.317420	N.A.	N.A.	N.A.	1164910.5	2556355.9	403.16	400.4
PB-2D	N33.199504	W83.315596	N.A.	N.A.	N.A.	1164853.6	2556914.2	416.71	414.9
PB-4D	N33.198110	W83.318400	N.A.	N.A.	N.A.	1164339.6	2556060.7	412.12	409.0
PB-4S	N33.198098	W83.318372	N.A.	N.A.	N.A.	1164335.1	2556069.2	411.15	409.3
PB-7S	N33.196710	W83.318003	N.A.	N.A.	N.A.	1163831.3	2556186.2	402.88	399.7
PB-8D	N33.194480	W83.316062	N.A.	N.A.	N.A.	1163024.4	2556786.7	401.74	398.2
PB-8S	N33.194463	W83.316044	N.A.	N.A.	N.A.	1163018.2	2556792.3	401.82	398.6
PZ-10S	N33.197260	W83.321907	1164022.6	2554990.2	430.92	1164021.5	2554990.5	433.85	431.0
PZ-13S	N33.208218	W83.320866	1168012.6	2555276.6	406.45	1168011.4	2555276.7	409.97	406.5
PZ-14I	N33.209302	W83.323834	1168397.1	2554365.3	419.85	1168398.2	2554365.6	422.71	419.9
PZ-14S	N33.209303	W83.323855	1168397.4	2554358.8	420.17	1168398.7	2554359.2	423.31	420.2

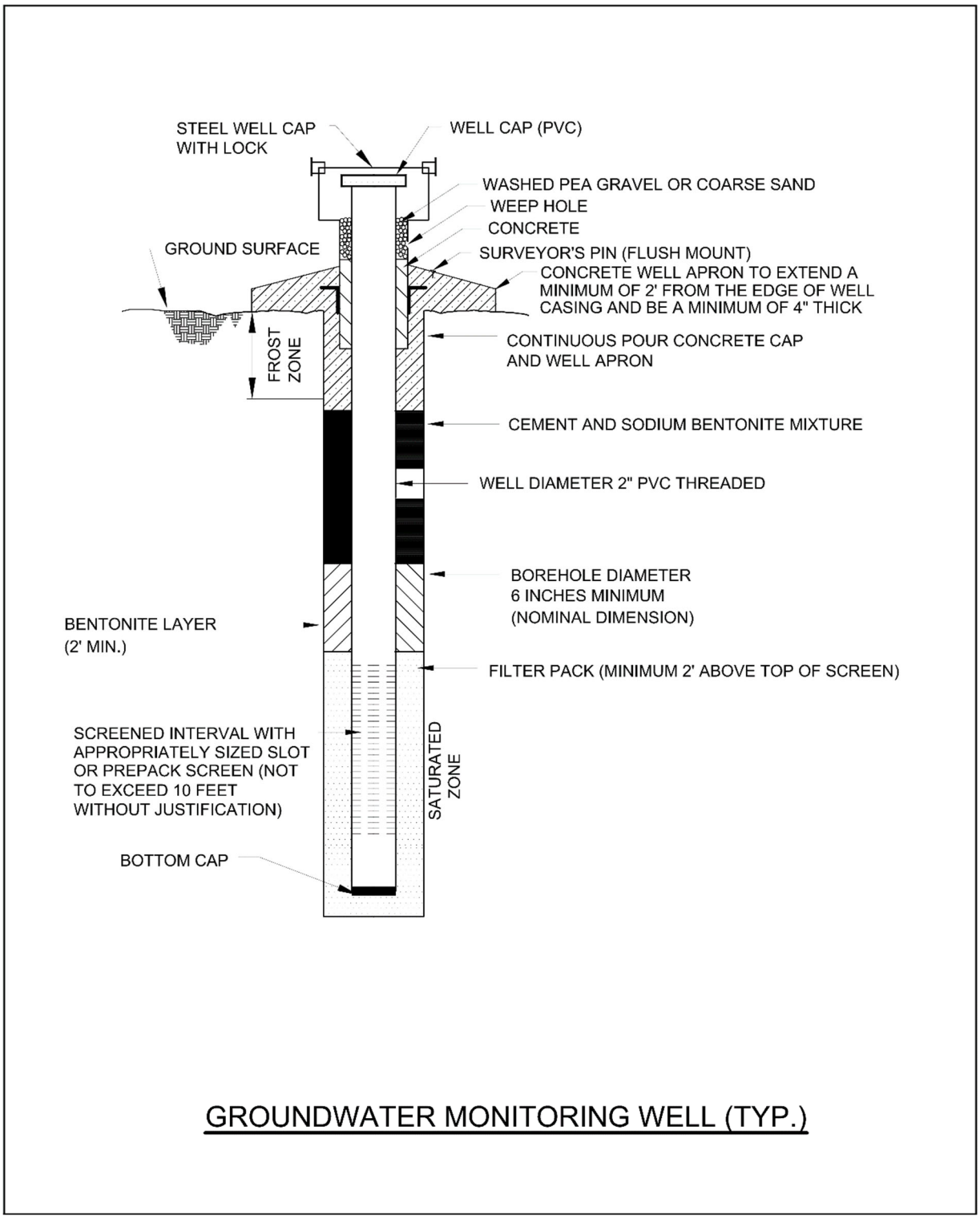
Plant Branch
Monitoring Well Locations
Ash Pond E
Jul;y 22, 2020

PZ-15I	N33.207440	W83.323742	1167720.8	2554397.9	400.10	1167720.9	2554399.2	403.06	400.2
PZ-15S	N33.207438	W83.323759	1167720.3	2554392.6	400.04	1167720.3	2554394.0	402.90	400.1
PZ-16I	N33.205401	W83.323146	1166979.9	2554586.7	379.41	1166980.7	2554587.5	382.45	379.5
PZ-16S	N33.205393	W83.323166	1166977.2	2554580.3	379.32	1166977.8	2554581.4	382.52	379.3
PZ-17I	N33.203566	W83.322788	1166312.8	2554701.6	362.22	1166313.8	2554702.5	365.33	362.3
PZ-1D	N33.219259	W83.332788	1171997.7	2551598.1	462.82	1171999.0	2551598.1	463.41	462.9
PZ-1I	N33.219250	W83.332855	1171994.6	2551577.9	461.71	1171995.8	2551577.8	464.71	461.9
PZ-1S	N33.219251	W83.332821	1171995.0	2551588.0	462.22	1171996.4	2551588.0	465.07	462.4
PZ-3D	N33.201356	W83.337283	1165474.3	2550274.1	486.67	1165474.4	2550275.1	487.50	486.7
PZ-3I	N33.201412	W83.337289	1165494.5	2550271.8	486.48	1165494.5	2550273.2	489.49	486.5
PZ-3S	N33.201384	W83.337284	1165484.4	2550273.2	487.07	1165484.5	2550274.6	490.53	487.0
PZ-40S	N33.192669	W83.296398	1162416.0	2562807.9	353.17	1162414.9	2562807.7	355.96	353.2
PZ-41S	N33.192716	W83.296555	1162432.8	2562760.0	354.23	1162431.8	2562759.4	357.17	354.3
PZ-42S	N33.193854	W83.296624	1162844.5	2562734.8	358.92	1162845.7	2562735.0	361.66	359.0
PZ-4I	N33.195212	W83.334049	1163248.0	2551282.2	479.96	1163246.8	2551282.0	482.98	479.9
PZ-4S	N33.195216	W83.334088	1163249.1	2551270.2	479.90	1163247.8	2551270.1	482.87	479.9
PZ-52D	N33.208362	W83.324870	1168053.7	2554050.6	414.15	1168053.9	2554051.7	417.03	414.3
PZ-53D	N33.198283	W83.321917	1164392.7	2554984.3	431.59	1164393.8	2554984.3	434.68	431.6
PZ-54	N33.199468	W83.320356	1164829.5	2555458.7	440.71	1164828.7	2555458.3	443.86	440.8
PZ-55	N33.195029	W83.322604	1163208.8	2554783.0	450.11	1163208.0	2554783.6	453.07	450.2
PZ-56	N33.194377	W83.324890	1162965.6	2554085.6	416.17	1162965.1	2554086.3	418.84	416.2
PZ-7S	N33.212137	W83.328090	1169418.5	2553054.5	448.98	1169419.2	2553055.6	451.57	449.0
PZ-8S	N33.207731	W83.334235	1167800.4	2551188.1	450.42	1167801.1	2551188.9	453.08	450.5
PZ-9S	N33.193487	W83.328157	1162634.1	2553088.8	466.08	1162633.3	2553089.6	469.28	466.1

APPENDIX B

GROUNDWATER MONITORING WELL DETAIL

B. GROUNDWATER MONITORING WELL DETAIL



GROUNDWATER MONITORING WELL (TYP.)

APPENDIX C

GROUNDWATER SAMPLING PROCEDURES

C. GROUNDWATER SAMPLING PROCEDURES

Groundwater sampling will be conducted using USEPA Region 4 Field Quality and Technical Procedures as a guide. The following procedures describe the general methods associated with groundwater sampling at the site. Prior to sampling, the well must be evacuated (purged) to ensure that representative groundwater is obtained. Any item coming in contact with the inside of the well casing or the well water will be kept in a clean container and handled only with gloved hands. Field log books and forms shall be kept for each sampling event, and should include, but not be limited to, the following: well signage, well access, sampling and purging equipment condition, and any site conditions that may affect sampling.

GPC will follow the procedures below at each well to ensure that a representative sample is collected:

1) Check the well, the lock, and the locking cap for damage or evidence of tampering. Record observations and notify GPC if it appears that the well has been compromised.

2) Measure and record the depth to water in all wells to be sampled prior to purging. Static water levels will be measured from each well, within a 24-hour period. The water level measuring device will be decontaminated prior to lowering in each well. The water level monitoring device will consist of a probe and measuring tape capable of measuring water levels with accuracy to 0.01 feet.

3) Install Pump: If a dedicated pump is not present, slowly lower the pump into the well to the midpoint of the well screen or a depth otherwise approved by the hydrogeologist or project scientist. The pump intake must be kept at least two (2) feet above the bottom of the well to prevent disturbance and suspension of any sediment present in the bottom of the well. Record the depth to which the pump is lowered. Non-dedicated pumps and wiring will be decontaminated before use and between well locations using procedures described in the latest version of the *Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division (SESD) Operating Procedure for Field Equipment Cleaning and Decontamination* as a guide.

4) Measure Water Level: Immediately prior to purging, measure the water level again with the pump in the well. Leave the water level measuring device in the well.

5) Purge Well: Begin pumping the well at approximately 100 to 500 milliliters per minute (ml/min). Monitor the water level continually. Maintain a steady flow rate that results in a stabilized water level with 0.3 ft. or less of variability. Avoid entraining air in the tubing. Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment. A brief overview of the purging and sampling methodologies, including the type of sampling equipment used will be provided in routine monitoring reports.

6) Monitor Indicator Parameters: Monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, oxidation reduction potential (ORP), and dissolved oxygen (DO)) approximately every three to five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings at a minimum:

   - ±0.1 S.U. for pH
   - ±5 % for specific conductance (conductivity)
   - ±10% for DO where DO>0.5 mg/L. If DO<0.5 mg/L no stabilization criteria apply
   - ≤10 NTUs for turbidity
   - Temperature – Record only, not used for stabilization criteria

- ORP – Record only, not used for stabilization criteria.

Calibration of field instruments will occur daily and follow the recommended (specific) instrument calibration procedures provided by the manufacturer and/or equipment manual specific to each instrument. Daily calibration will be documented on field forms and these field forms will be included in each groundwater monitoring report.

7) Collect samples at a flow rate between 50 and 250 mL/min and such that drawdown of the water level within the well is stable. Flow rate must be reduced if excessive drawdown is observed during sampling. Sample containers should be filled with minimal turbulence by allowing the groundwater to flow from the tubing gently down the inside of the container.

8) Compliance samples will be unfiltered; however, to determine if turbidity is affecting sample results, duplicate samples may be filtered in the field prior to being placed in a sample container, clearly marked as filtered and preserved. Filtering will be accomplished by the use of 0.45-micron filters on the sampling line. At least two filter volumes of sample will pass through before filling sample containers. Filtered samples are not considered compliance samples and are only used to evaluate the effects of turbidity and the potential need for well redevelopment.

9) Sample bottles will be filled, capped, and placed in an ice containing cooler immediately after sampling where temperature control is required. Samples that do not require temperature control will be placed in a clean and secure container.

10) Sample containers and preservative will be appropriate for the analytical method being used.

11) Information contained on sample container labels will include:

    a) Name of facility
    b) Date and time of sampling
    c) Sample description (well number)
    d) Sampler's initials
    e) Preservatives
    f) Analytical method(s)

12) After samples are collected, samplers will remove non-dedicated equipment. Upon completion of field activity the well will be closed and locked.

13) Non-dedicated equipment will be decontaminated between wells in general accordance with USEPA SESDPROC-205-R3 (USEPA, 2015)

14) Samples will be delivered to the laboratory following appropriate chain-of-custody (COC) and temperature control requirements. The goal for sample delivery will be within 48 hours of collection. If delivery is delayed, samples should not be analyzed after the method-prescribed hold time.

Throughout the sampling process new nitrile gloves will be worn by the sampling personnel. A clean pair of new, disposable gloves will be worn each time a different location is sampled and new gloves donned prior to filling sample bottles. Gloves will be discarded after sampling each well and before sampling the next well.

The goal when sampling is to attain a turbidity of less than 5 NTUs however, samples may be collected where turbidity is less than 10 NTUs and the stabilization criteria described above are met.

If sample turbidity is greater than 5 NTUs and other stabilization criteria have been met, samplers will continue purging for 3 additional hours in order to reduce the turbidity to 5 NTUs or less.

- If turbidity remains above 5 NTUs but is less than 10 NTUs, and other parameters are stabilized, the well can be sampled.
- Where turbidity remains above 10 NTUs, an unfiltered sample will be collected followed by a filtered sample that has passed through an in-line 0.45-micron filter attached to the discharge (sample collection) tube. Data from filtered samples will only be used to quantify the effects of turbidity on sample results.

Samplers will identify the sample bottle as containing a filtered sample on the sample bottle label and on COC form.

WELL INSPECTION FORM
PLANT BRANCH

Well-ID	POSITION ↑ or ↓	LOCATION / IDENTIFICATION a. Is the well visible and accessible? b. Is the well property identified/Correct Well ID? c. Is the well in high traffic area require traffic Protection? d. Is the drainage around the well acceptable (No standing water)? (Y / N / NA)	PROTECTIVE CASING a. Is protective casing free from damage/ b. Is casing free of degradation or deterioration/ c. Does casing have functioning weep hole? d. Is the annual space clear of debirs and water, or filled with pea gravel? e. Is the well locked and in good condition? (Y / N / NA)	SURFACE PAD a. Pad in Good Condition b. Pad Sloped away from Well? c. In contact with Protective Casing? d. In Contact with Ground Surface and Stable? e. Free of Debris? (Y / N / NA)	INTERNAL CASING a. Does the cap prevent entry of foreign material? b. Is the casing free of kinks or bends or any obstruction from foreigh objects? c. Is the well property vented for equilibrium of air pressure? d. Is the survey point clearly marked on the inner casing? e. Is the depth of the well consistent with the well log? f. Is the casing stable? (Y / N / NA)	SAMPLING (Groundwater Wells Only) a. Does well recharge adequately when purged? b. If dedicated sampling equipment installed, is it in good condition and specified in the approved groundater plan for the facility? c. Does the well require redevelopment? (Y / N / NA)

INSPECTOR/DATE _____

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