

# GROUNDWATER MONITORING PLAN

---

## PLANT WANSLEY – COAL COMBUSTION RESIDUALS (CCR) LANDFILL HEARD COUNTY, GEORGIA

FOR



# Georgia Power

DECEMBER 2025



**GEORGIA**  
DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

**Approved**

**Solid Waste Management Program**

Approved By: \_\_\_\_\_



## TABLE OF CONTENTS

---

I.	CERTIFICATION .....	1
1.	INTRODUCTION .....	2
2.	GEOLOGIC AND HYDROGEOLOGIC CONDITIONS.....	3
3.	SELECTION OF WELL LOCATIONS.....	6
4.	MONITORING WELL DRILLING, CONSTRUCTION, ABANDONMENT & REPORTING.....	7
4.1	DRILLING .....	7
4.2	DESIGN AND CONSTRUCTION.....	7
4.3	ABANDONMENT .....	10
4.4	DOCUMENTATION .....	10
5.	GROUNDWATER MONITORING PARAMETERS AND FREQUENCY .....	12
6.	SAMPLE COLLECTION .....	16
7.	CHAIN-OF-CUSTODY.....	17
8.	FIELD AND LABORATORY QUALITY ASSURANCE / QUALITY CONTROL .....	18
9.	REPORTING RESULTS.....	19
10.	STATISTICAL ANALYSIS .....	21
11.	REFERENCES .....	27
	APPENDIX .....	29
A.	GROUNDWATER MONITORING NETWORK DOCUMENTATION .....	30
	TABLE A1 WELL CONSTRUCTION DETAILS .....	31
	TABLE A2 PROPOSED GROUNDWATER MONITORING NETWORK FOR CELL 4 .....	32
	FIGURE A1: COMPLIANCE NETWORK PLAN.....	33
	ATTACHMENT A1: WELL CONSTRUCTION AND BORING LOGS .....	34
	ATTACHMENT A2: WELL DRILLING CONTRACTOR PROOF OF BONDING .....	35
	ATTACHMENT A3: SURVEYOR’S CERTIFICATION .....	36
B.	GROUNDWATER MONITORING WELL DETAILS .....	37
B2.	GROUNDWATER MONITORING WELL DETAIL FLUSH-MOUNT SURFACE COMPLETION..	38
C.	GROUNDWATER SAMPLING PROCEDURE .....	39
D.	SURFACE WATER & UNDERDRAIN SAMPLING AND ANALYSIS PROCEDURES .....	42

## I. CERTIFICATION

---

I hereby certify that this Groundwater Monitoring Plan 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, 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 Rules of Solid Waste Management, Chapter 391-3-4-.10(6).

Signature: *W Alexander*

Date: 2025-12-08



## 1. INTRODUCTION

---

Groundwater and surface water 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, surface water, and underdrain monitoring program for the site. This plan meets the requirements of EPD rules and uses EPD's *Manual for Groundwater Monitoring* dated September 1991 as a guide. Groundwater monitoring, surface water and underdrain sampling locations for Plant Wansley CCR Landfill are presented in **Appendix A, Figure 1A, Compliance Network Plan**. The existing monitoring well construction details are presented in **Appendix A, Table A1** and the proposed Cell 4 monitoring well data is presented in Table A2 for the CCR unit.

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 CCR Rule by reference, a detection monitoring well network for the Plant Wansley Landfill active cells (i.e., 1, 2, and 3) has been installed and certified by a qualified professional engineer. This certification has been placed in the facility's operating record. 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. GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

---

The geology and hydrogeology of the Site was obtained from the Site Acceptability Report (SAR) prepared by Southern Company Services, Inc. in 2007 (SCS, 2007). Additional hydrogeological data was obtained from the semiannual sampling report prepared by Atlantic Coast Consulting, Inc. (ACC, 2021) and from a SAR prepared by Geosyntec Consultants (Geosyntec, 2024) for the proposed expansion area. Full report references to SCS, 2007, ACC, 2021, and Geosyntec, 2024 are included below.

### Geology:

The Site is located within the Southern Piedmont Physiographic province, which lies between the Blue Ridge Mountains and the Upper Coastal Plain. This province is underlain by Precambrian and Paleozoic age metamorphic rocks including mica schists and granitic gneisses. The Brevard Fault Zone, a major geological feature that cuts across the Piedmont, occurs approximately one mile north of the Site. The Brevard Zone is bounded by a thrust fault on the southeastern border and trends northeast, as do most of the geologic formations of the Piedmont.

Rock cores recovered from borings drilled on the Site are interbedded with granitic gneisses, garnet mica schists, augen schists and augen gneisses with occasional quartzite veins and accessory minerals of garnet, epidote, and calcite. The gneiss and schist bedrock are typical for the immediate area surrounding the Site.

Residual soil zones develop by the in-situ chemical weathering of bedrock. The typical residual soil profile consists of silty and clayey soils near the surface, where soil weathering is more advanced, underlain by micaceous sandy silts and silty sands. Residual soil that retains relict features of the parent rock, such as schistosity (schists) and banding (gneisses) but have the texture of a soil, are commonly referred to as “saprolite.” The boundary between soil and rock is not sharply defined. Fractures, joints, and the presence of less resistant rock types facilitate weathering. Consequently, the profile of the partially weathered rock and hard rock is quite irregular and erratic, even over short horizontal distances.

### Hydrogeology:

The uppermost aquifer at the Site consists of the residual soils, partially weathered rock, and the upper portion of the fractured bedrock. The aquifer is recharged locally by infiltration of precipitation. As described in the text of the SAR (SCS, 2007) and demonstrated by associated geotechnical data and boring logs, the top of rock is slightly to strongly weathered but becomes less weathered with depth. In general, core recovery increases significantly with depth as the rock becomes less weathered. Rock Quality Designation (RQD) increases significantly with depth. These site-specific data support and additional published data on bedrock hydrogeology describe a general decrease in size and occurrence of fractures with depth. Therefore, we infer that groundwater within the bedrock is primarily present in fractures that decrease in size and density with depth. Groundwater flows semi-radially from topographic highs near GWA-2 and GWA-28. Groundwater generally flows to the east and north across the entire Site.

Groundwater flow velocities were calculated for the Site based on hydraulic gradients (high gradient of 0.143 ft/ft and a low gradient of 0.011 ft/ft [Geosyntec, 2024]), horizontal hydraulic conductivity based on previous slug test data and an estimated effective porosity of 0.10 (provided in the SAR, SCS, 2007). The groundwater flow velocity was calculated to range between 6.84 ft/day and 0.03 ft/day from the water levels measured on March 24, 2022 (Geosyntec, 2024).

**Table 1**  
**Horizontal Groundwater Flow Velocity Calculations**  
**March 2022**  
**Plant Wansley CCR Landfill**

Equation

$$V = \frac{Ki}{n_e}$$

where: V = groundwater velocity  
 K = hydraulic conductivity  
 i = hydraulic gradient  
 n<sub>e</sub> = effective porosity

Geologic Unit	Geometric Mean Values			
	Hydraulic Conductivity (K) (feet per day)	Hydraulic Gradient (i) (unitless)	Effective Porosity (n) (unitless)	Groundwater Velocity (V) (feet per day)
Saprolite	0.63	High Est.	10.0%	High Est.
		0.143		0.90
		Low Est.		Low Est.
Saprolite / Bedrock	0.28	High Est.	10.0%	High Est.
		0.143		0.40
		Low Est.		Low Est.
Bedrock	3.39	High Est.	7.1%	High Est.
		0.143		6.84
		Low Est.		Low Est.
All Saturated Units	0.84	High Est.	8.4%	High Est.
		0.143		1.43
		Low Est.		Low Est.
		0.011		0.11

Notes:

1. The geometric mean hydraulic conductivity values in the Saprolite, Saprolite/Bedrock and Bedrock are from Table 3-1 of the *Site Acceptability Report For Proposed CCR Landfill Expansion - Plant Wansley* prepared by Geosyntec Consultants, dated January 2024.
2. Effective porosity values in the Saprolite and Saprolite/Bedrock are from Table 16.2.1 of the *Handbook of Hydrology* authored by David Maidment dated 1993. This is the effective porosity used at the facility during previous Site Acceptability Reports prepared by Earth Science and Environmental Engineering dated October 2007.
3. Effective porosity values in the Bedrock are from published values (5 to 10 percent) (Kruseman & deRidder, 1989).
4. Hydraulic gradients are measured from the figure titled "Potentiometric Surface - 24 March 2022" (Figure 2-7) of the *Site Acceptability Report For Proposed CCR Landfill Expansion - Plant Wansley* prepared by Geosyntec Consultants, dated January 2024.
5. The *high velocity* hydraulic gradient (0.143 ft/ft) was measured between the 770 and 820 foot contours between GWA-28 and GWC-30.
6. The *low velocity* hydraulic gradient (0.011 ft/ft) was measured between the 720 and 730 foot contours in the Cell 4 near GWC-8 and GWC-35.

### 3. SELECTION OF WELL LOCATIONS

---

Groundwater monitoring wells are installed to monitor the uppermost occurrence of groundwater beneath Cells 1, 2, and 3. Locations are selected based on disposal cell layouts and site geologic and hydrogeologic considerations. Georgia Power follows the recommendation as stated in Chapter 2 of the *Manual for Groundwater Monitoring* (EPD, 1991) to determine well spacing based on site-specific conditions. Locations are chosen to serve as upgradient (GWA), or downgradient (GWC) based on groundwater flow direction determined by potentiometric evaluation.

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 the current monitoring well network for Cells 1, 2, and 3, and the proposed detection monitoring wells for Cell 4 is included in **Appendix A**, Monitoring System Details. **Appendix A** also includes a tabulated list of existing individual monitoring wells with well construction details such as location coordinates, top-of-casing elevation, well depths and screened intervals. Any change to the groundwater monitoring or surface water monitoring network must be made by a minor modification to the permit pursuant to 391-3-4-.10(6)(g).

## 4. MONITORING WELL DRILLING, CONSTRUCTION, ABANDONMENT & REPORTING

---

The monitoring well network described in this plan is already in place or is planned for installation. The existing monitoring wells were installed following USEPA Region 4 Science and Ecosystem Support Division (SESD) Guidance *Design and Installation of Monitoring Wells* (document available at that time) as a general guide for best practices. Monitoring well logs for the existing monitoring well network are included in **Appendix A**. The following sections describe the methods used for well drilling, construction, abandonment, and reporting for modification to the well network at the CCR Landfill.

### 4.1 DRILLING

A variety of well drilling methods are available for the purpose of 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 should be selected to 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. Monitoring wells will be installed using the most current version of SESDGUID-101-R2 as a general guide for best practices. Drilling equipment will be decontaminated before use and between borehole locations using the procedures described in the latest version of the Region 4 USEPA Laboratory Services & Applied Science Division, Operating Procedure *Field Equipment Cleaning and Decontamination* – LSASDPROC-205-R4 as a guide. Drilling and well installation activities will be directed by a qualified groundwater scientist.

Sampling and/or coring may be used to help determine the stratigraphy and geology. Samples will be logged by trained personnel working under the direction of a Professional Geologist/Engineer registered in the State of Georgia. Screen depths will be chosen based on the target installation depth.

All drilling for any subsurface hydrologic investigation, installation, or abandonment of groundwater wells at a landfill in Georgia must be performed by a driller that has, at the time of installation, a performance bond on file with the Water Well Standards Advisory Council. Proof of bonding for wells installed at the Landfill, is included as **Attachment A2** in **Appendix A**. For future installations, proof of bonding will be included in the well installation reports. Drilling and well installation activities will be directed by a qualified groundwater scientist registered in Georgia.

### 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.

#### WELL CASINGS AND SCREENS

American Society for Testing and Materials International (ASTM), National Science Foundation (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 USEPA-approved and appropriate materials may be used for construction.

## 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 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 SESDGUID-101-R2 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.

## 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 a minimum of 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 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 bentonite or 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 to ground surface. 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.

#### 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. For all future wells the surface cap will extend from the top of the grout to ground surface, where it will become a concrete apron extending outward with a radius of at least 1.0 to 3.0 feet from the edge of the well casing and sloped to drain water away from the well, depending on well type.

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

Well Construction and Boring Logs are included in **Attachment A1** in **Appendix A**. The groundwater monitoring well details attached in **Appendix B**, Groundwater Monitoring Well Details, illustrate the general design and construction details for each type of monitoring well (riser and flush mount).

#### WELL DEVELOPMENT

Well development will be conducted under supervision of a Qualified Groundwater Scientist. 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 5 nephelometric turbidity units (NTUs); however, formation-specific conditions may not allow this target to be accomplished. Development can be discontinued once a turbidity less than 10 NTU is achieved. Additionally, the stabilization criteria contained in **Appendix C** 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. All 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. Well development data will be included in the well installation report.

### **4.3 ABANDONMENT**

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. Monitoring wells will be abandoned using industry-accepted practices and using the *Manual for Groundwater Monitoring* (EPD, 1991) and (O.C.G.A) 12-5-120, 1985 as guides. The wells will be abandoned under the supervision of a Qualified Groundwater Scientist registered to practice in the State of Georgia. A well abandonment report will be submitted to EPD within 60 days of completion of well abandonment. Neat Portland cement or bentonite will be used as appropriate to complete abandonment and seal the well borehole. Any piezometers or groundwater wells located within footprint of future CCR cells will be over-drilled prior to abandonment.

### **4.4 DOCUMENTATION**

Within 60 days of the construction, development, and survey, or abandonment of each new groundwater monitoring well completed under the direction of a Qualified Groundwater Scientist, a well installation/abandonment report will be submitted to the EPD. The following information will be documented in this report.

- a. Well identification
- b. Name of drilling contractor and type of drill rig
- c. Documentation that the driller, at the time the monitoring wells were installed, had a bond on file with the Water Well Standards Advisory Council
- d. Narrative of drilling technique applied, well construction details, and well development procedures, including dates, drilling fluids used (if applicable), well casing and screen materials, screen slot size, and joint type
- e. Details of filter pack material/size, emplacement method (narrative), and volume
- f. Seal emplacement method and type/volume of sealant
- g. Borehole diameter and well casing diameter
- h. Well Depth ( $\pm 0.1$  ft.)
- i. Type of protective well cap
- j. Surface seal and volumes/mix of annular seal material
- k. Screen length and interval reported in feet below ground surface and elevation
- l. Well location data given to within an accuracy of 0.5 feet based on survey data recorded from an acceptable survey point datum by a Georgia-registered professional surveyor
- m. Well elevation data given to within an accuracy of 0.01 feet based on survey data recorded from an acceptable survey point datum by a Georgia-registered professional surveyor
- n. Lithologic logs
- o. Documentation that water quality field parameters meet well development criteria (Section 4.2)
- p. Documentation of ground surface elevation ( $\pm 0.01$  feet)

- q. Documentation of top of casing elevation ( $\pm 0.01$  feet)
- r. Schematic of the well with dimensions for all components (e.g., casing, screen, sump, well pad)

In accordance with the Georgia Water Well Standards Act (O.C.G.A. § 12-5-134(5)(d)(vii)), at least once every five years, the owner of the property on which a monitoring well is constructed shall have the monitoring well(s) inspected by a Qualified Groundwater Scientist, who shall direct appropriate remedial corrective work to be performed if the well does not conform to standards. Well inspection records and records of remedial corrective work are subject to review by EPD. Additionally, as part of the post closure plan, the cost estimate based upon current year cost for the well inspections must be provided for as part of the cost calculations for the groundwater monitoring period.

## 5. **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 2: Groundwater Monitoring Parameters & 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 EPD-approved modified Appendix I and Appendix II test parameters (a subset of the full list contained in 40 CFR 258), as well as 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 Appendix I and III will be at least semi-annual during the active life of the facility and the post-closure care period. If required, Georgia Power will conduct assessment monitoring in accordance with the Georgia Rules for Solid Waste Management Chapter 391-3-4-.10 to also include EPD-approved modified Appendix II and 40 CFR, Subpart D Appendix IV test parameters.

As shown on Table 3, Groundwater Monitoring Analytical Methods, 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.).

<b>TABLE 2</b>			
<b>GROUNDWATER MONITORING PARAMETERS &amp; FREQUENCY</b>			
<b>MONITORING PARAMETER</b>		<b>GROUNDWATER MONITORING</b>	
		<b>Background</b>	<b>Semi-Annual Events</b>
<b>Field Parameters</b>	Temperature	X	X
	pH	X	X
	Specific Conductance	X	X
	Turbidity	X	X
	Oxidation Reduction Potential (ORP)	X	X
	Dissolved Oxygen	X	X
<b>Appendix I and II (EPD-approved modified Appendix I and II test parameters from 40 CFR 258, Subpart E)</b>	Antimony	X	X
	Arsenic	X	X
	Barium	X	X
	Beryllium	X	X
	Cadmium	X	X
	Chromium	X	X
	Cobalt	X	X
	Copper	X	X
	Lead	X	X
	Mercury	X	X
	Nickel	X	X
	Selenium	X	X
	Silver	X	X
	Thallium	X	X
Vanadium	X	X	
Zinc	X	X	
<b>Appendix III (Detection test parameters from 40 CFR 257, Subpart D)</b>	Boron	X	X
	Calcium	X	X
	Chloride	X	X
	Fluoride	X	X
	pH	X	X
	Sulfate	X	X
	Total Dissolved Solids	X	X
<b>Appendix IV (Assessment test parameters from</b>	Antimony	X	
	Arsenic	X	
	Barium	X	

<b>40 CFR 257, Subpart D)</b>	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 3  
 GROUNDWATER MONITORING ANALYTICAL METHODS**

Parameters	EPA Method Number
Boron	EPA 6010D/6020B
Calcium	EPA 6010D/6020B
Chloride	EPA 300.0/300.1/9250/9251/9253/9056A
Fluoride	EPA 300.0/300.1/9214/9056A
pH	EPA 150.1/field/90405C
Sulfate	EPA 9035/9036/9038/300.0/300.1/9056A
Total Dissolved Solids (TDS)	EPA 160.1/Standard Method 2540C
Antimony	EPA 7040/7041/6010D/6020B
Arsenic	EPA 7060A/7061A/6010D/6020B
Barium	EPA 7080A/7081/6010D/6020B
Beryllium	EPA 7090/7091/6010D/6020B
Cadmium	EPA 7130/7131A/6010D/6020B
Chromium	EPA 7190/7191/6010D/6020B
Cobalt	EPA 7200/7201/6010D/6020B
Copper	EPA 6010D/6020B
Fluoride	EPA 300.0/300.1/9214/9056
Lead	EPA 7420/7421/6010D/6020B
Lithium	EPA 6010D/6020B
Mercury	EPA 7470
Molybdenum	EPA 6010D/6020B
Nickel	EPA 6010D/6020B
Selenium	EPA 7740/7741A/6010D/6020B
Silver	EPA 6010D/6020B
Thallium	EPA 7840/7841/6010D/6020B
Vanadium	EPA 6010D/6020B
Zinc	EPA 6010D/6020B
Radium 226 and 228 combined	EPA 903/904/9320/9315

## 6. SAMPLE COLLECTION

---

During each sampling event, samples will be collected and handled in accordance with the procedures specified in **Appendix C** Groundwater Sampling Procedure, and **Appendix D**, Surface Water and Underdrain Sampling and Analysis Procedures. Sampling procedures were developed using standard industry practice and USEPA LSASDPROC-301-R6 and LSASDPROC-201-R6 as a guide. Low-flow sampling methodology will be utilized for sample collection. EPA approved alternative industry accepted sampling techniques may be used when appropriate with prior EPD approval.

For groundwater sampling, positive gas displacement PVC, 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.

Per Georgia Rule 391-3-4-.10(6)(g) monitoring wells require replacement after two consecutive dry sampling events. Well installation must be directed by a qualified groundwater scientist. A minor modification shall be submitted in accordance with Rule 391-3-4-.02(3)(b)(6) prior to the installation or decommissioning of monitoring wells.

The applied groundwater purging, and sampling methodologies will be discussed in the groundwater semi-annual monitoring reports submitted to EPD.

During each sampling event, surface water samples will be collected and handled in accordance with the procedures specified in **Appendix D: Surface Water and Underdrain Sampling and Analysis Procedures**. These procedures were developed using field sampling guidelines described in the USEPA Operating Procedure, *Surface Water Sampling* (LSASDPROC-201-R6) and updates. For surface water and underdrain sampling, dedicated, non-dedicated, or disposable sampling equipment may be used.

## 7. CHAIN-OF-CUSTODY

---

All 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
- Notated date(s) and time(s) of sample transfer between individuals

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, both documented on the COC.

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. FIELD AND LABORATORY QUALITY ASSURANCE / QUALITY CONTROL

---

All field quality control samples will be prepared the same as compliance samples with regard 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 10 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.

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 all groundwater monitoring reports. Instruments will be recalibrated as necessary (e.g., when calibration checks indicate significant variability), and all checks and recalibration steps will be documented on field calibration forms. Calibration of the instruments will also be checked if any readings during sampling activities are suspect. Replacement probes and meters will be obtained as a corrective action in the event that recalibration does not improve instrument function. Completed calibration field forms will be provided with the semi-annual groundwater monitoring reports.

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

## 9. REPORTING RESULTS

---

A semi-annual groundwater report that documents the results of sampling and analysis will be submitted to EPD, added to the site Operating Record, and posted to Georgia Power's CCR Website. Semi-annual groundwater monitoring reports will be submitted to the EPD within 90 days of receipt and statistical analysis of the groundwater analytical data from the laboratory. At a minimum, semi-annual reports will include:

- a. 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.
- b. A narrative of purging/sampling methodologies, which will include the type of sampling equipment used.
- c. Discussion of results.
- d. Recommendations for the future monitoring consistent with the Rules.
- e. Potentiometric surface contour map for the aquifer(s) being monitored, signed and sealed by a Georgia-registered P.G. or P.E.
- f. 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.
- g. Groundwater flow rate and direction calculations.
- h. Identification of any groundwater wells that were installed or abandoned during the preceding year, along with a narrative description of why these actions were taken.
- i. 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).
- j. If applicable, semi-annual assessment monitoring results.
- k. Any alternate source demonstration completed during the reported monitoring period, if applicable.
- l. Laboratory Reports and associated data validation reports.
- m. COC documentation.
- n. Field sampling logs including field instrument calibration, indicator parameters and parameter stabilization data.
- o. Field logs and forms will be kept for each sampling event, and will include, but not be limited to, well signage, well access, sampling and purging equipment condition, and any site conditions that may affect sampling.
- p. Documentation of non-functioning wells or dry surface water or underdrain locations.

- q. Table of current analytical results for each well, highlighting statistically significant increases and concentrations above maximum contaminant level (MCL).
- r. Tabulated surface water table presents data for the current reporting period and all historical monitoring events associated with the surface water monitoring program.
- s. Statistical analyses of Appendix III statistically significant increases (SSI) and Appendix IV statistically significant limits (SSL), including trend analyses of SSLs of Appendix IV constituents if the unit is currently undergoing assessment of corrective measures (if applicable).
- t. Certification by a qualified groundwater scientist.
- u. An iso-concentration map of each Appendix IV constituent identified at a statistically significant level (SSL) during the reporting period. Inclusion of the map(s) is only applicable for a unit currently undergoing assessment of corrective measures and/or corrective action.
- v. Trend Charts (only applicable for a unit currently undergoing assessment of corrective measures and/or corrective action)
- w. Updated potable water well survey, annually (if applicable based on exceedance of groundwater protection standards)

## 10. STATISTICAL ANALYSIS

---

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. Statistical analysis techniques will be consistent with the USEPA document Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance (Unified Guidance) (USEPA, 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 will be used include:

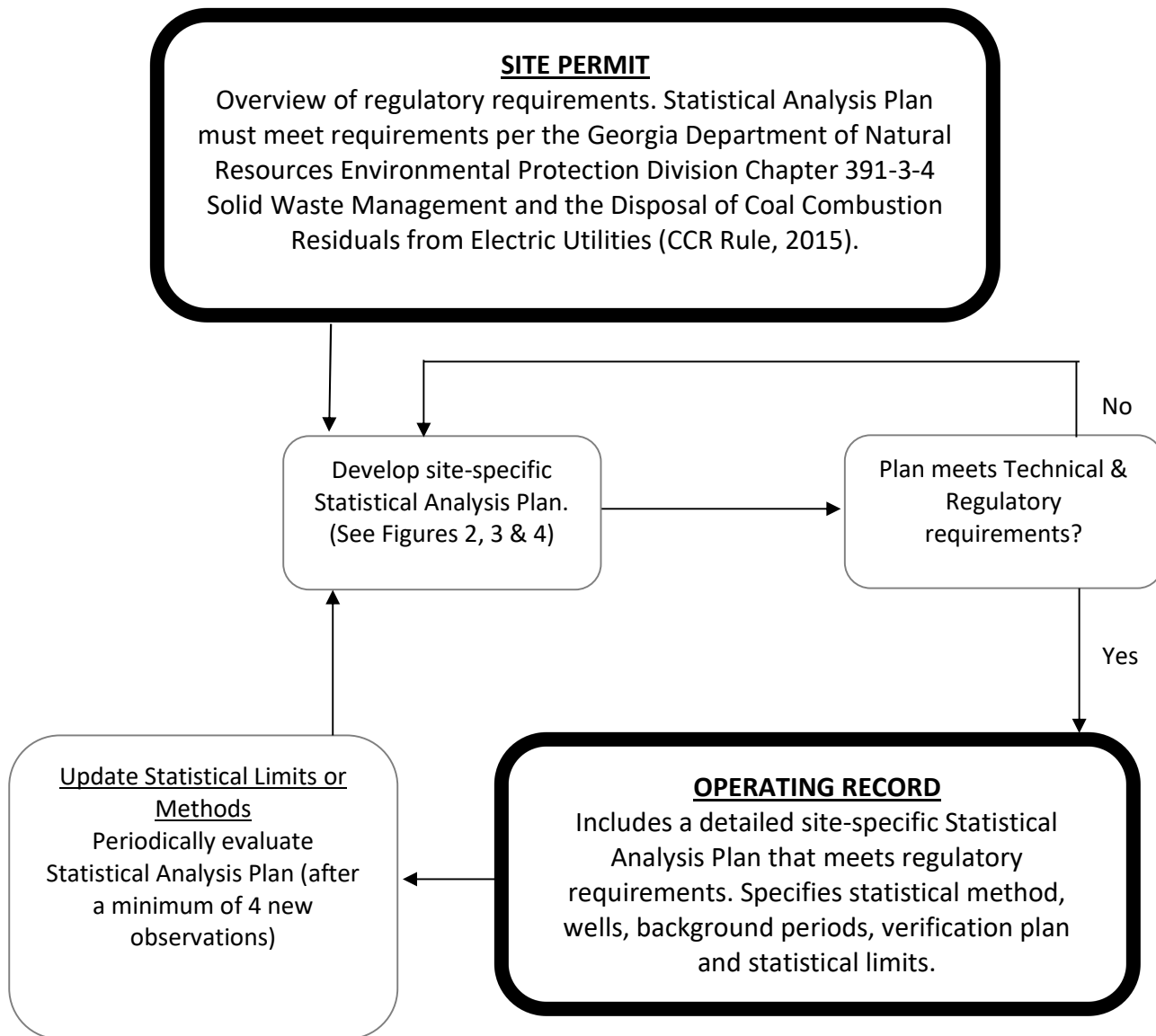
1. A prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper prediction limit. (§257.93(f)(3)).
2. A control chart approach that gives control 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) or §257.93(f)(5). 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).

Based on site-specific conditions, the selected statistical methods include a combination of intrawell and interwell comparisons, or the approved two-step statistical method. Intrawell methods use background data for individual wells and may be overly sensitive to natural variation; therefore, statistically significant increases (SSIs) may occur as a result of natural variation rather than facility impacts. A second step can be used to further evaluate the results and mitigate SSIs that result from natural variation. In instances where intrawell statistical methods identify an apparent SSI, a second step of interwell statistical evaluation may be used to determine whether the measurement exceeds the sitewide background limit. This two-step statistical method is similar in concept to the procedure used in compliance monitoring programs where an interwell statistical limit is used to determine background per USEPA Unified Guidance (2009). If the result does not exceed sitewide (interwell) background, an SSI is not declared, and no further action is needed to stay in detection monitoring. This statistical method is combined with a 1-of-2 resample plan, allowing for a collection of an independent resample to confirm or disconfirm the initial finding. A SSI is not declared unless the resample also exceeds the intrawell/interwell prediction limits. Trend tests will continue to be included in Semi-Annual and Annual Groundwater Monitoring and Corrective Action Reports for constituents exhibiting an SSI using an intrawell statistical method that does not exceed sitewide (interwell) background.

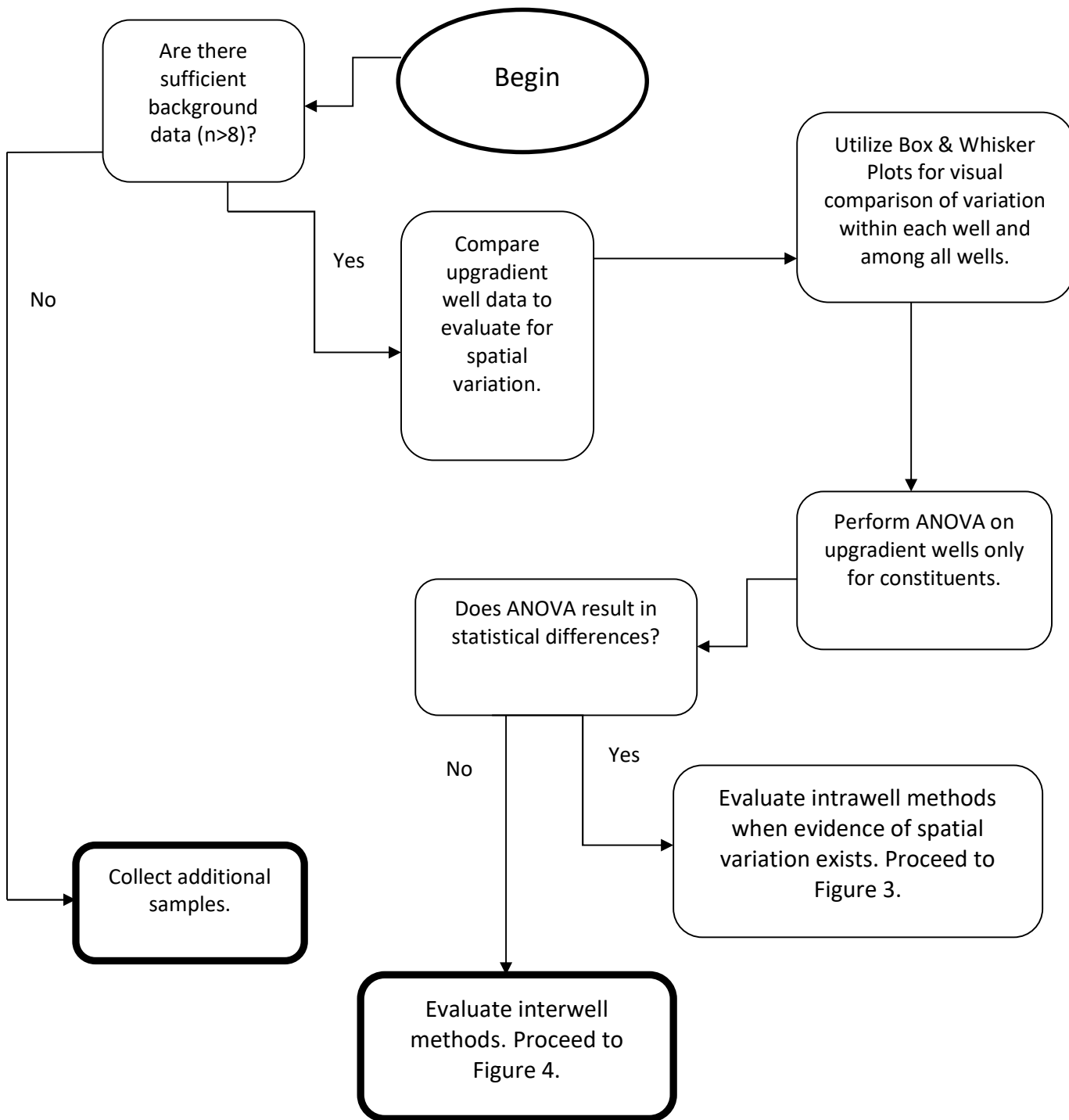
A site-specific statistical analysis plan that provides details regarding the statistical methods to be used has been placed in the site's operating record pursuant to 391-3-4-.10(6) and §257.93. Figure 1, Statistical Analysis Plan Overview, includes a flowchart that depicts the process that will be followed to develop the

site-specific plan. Figure 2, Decision Logic for Determining Appropriate Statistical Method, depicts the decision logic that will be used to determine the appropriate method as required by 391-3-4-.10(6) or §257.93. Figure 3, Decision Logic for Computing Intrawell Prediction Limits, presents the logic that will be used to calculate site-specific statistical limits and test compliance results against those limits. Figure 4: Decision Logic for Computing Interwell Prediction Limits, presents the logic that will be used to calculate site-specific interwell statistical limits and test compliance results against those limits.

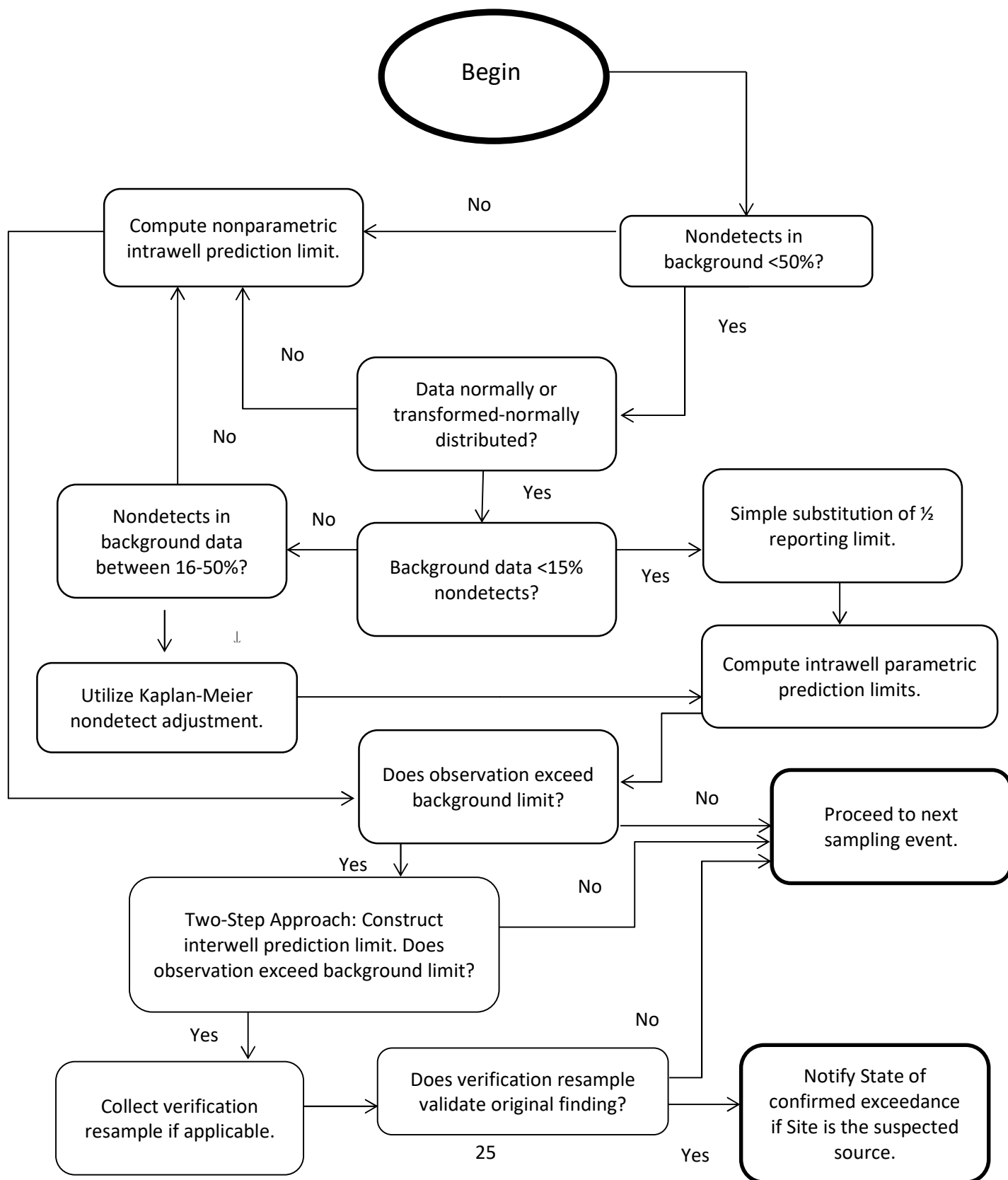
**FIGURE 1. STATISTICAL ANALYSIS PLAN OVERVIEW**



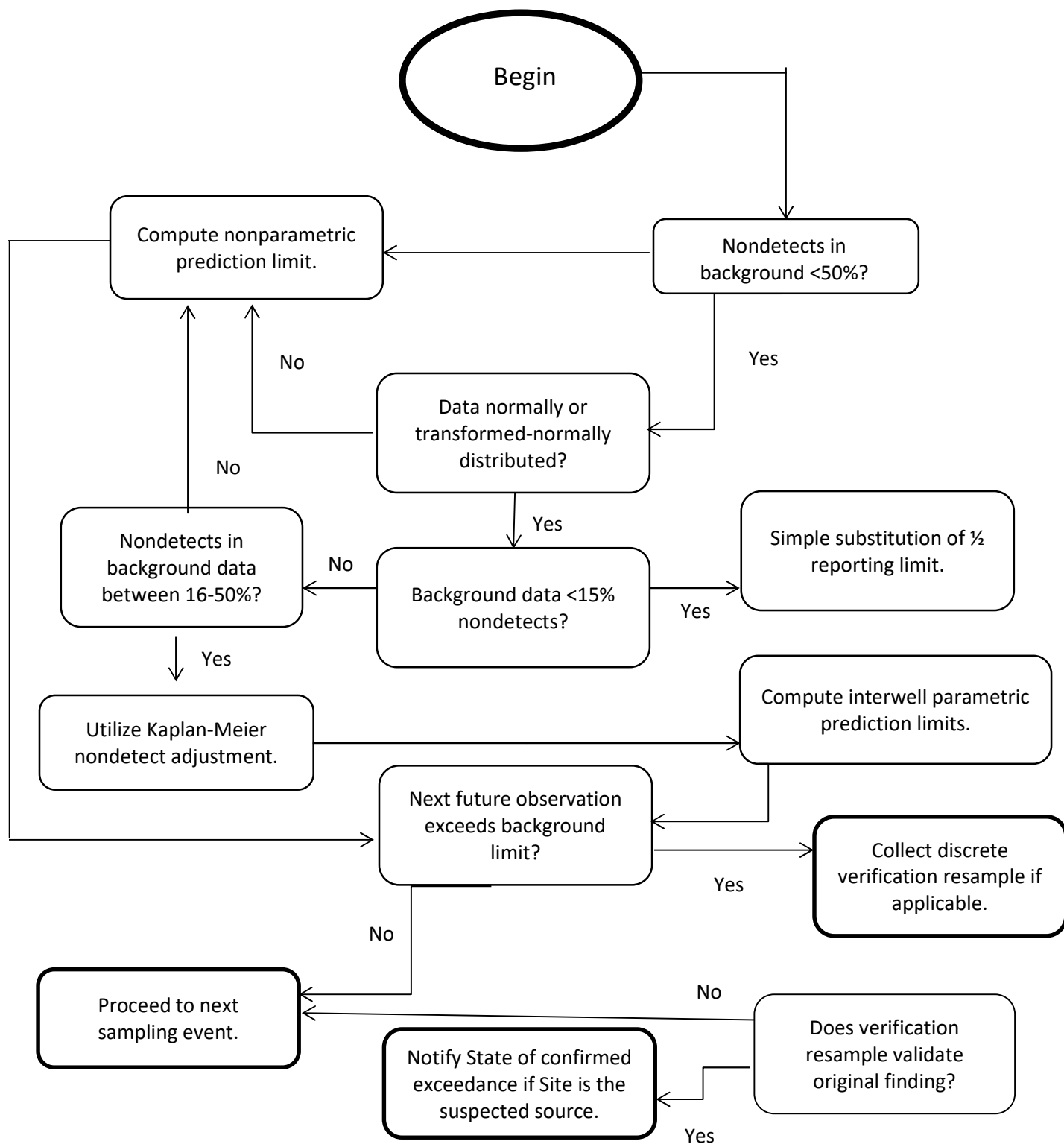
**FIGURE 2. DECISION LOGIC FOR DETERMINING APPROPRIATE STATISTICAL METHOD**



**FIGURE 3. DECISION LOGIC FOR COMPUTING INTRAWELL PREDICTION LIMITS**



**FIGURE 4. DECISION LOGIC FOR COMPUTING INTERWELL PREDICTION LIMITS**



## 11. REFERENCES

---

Atlantic Coast Consulting, Inc. (ACC). August 2021. *2021 Semiannual Groundwater Monitoring and Corrective Action Report, Plant Wansley CCR Landfill, Heard Co. Georgia.*

Geosyntec Consultants (Geosyntec). January 2024. *Site Acceptability Report for Proposed CCR Landfill Expansion, Plant Wansley, Carroll and Heard Counties, Georgia.*

Georgia Department of Natural Resources, Environmental Protection Division. 1991. *Manual for Groundwater Monitoring.*

Official Code of Georgia Annotated, 1985. *O.C.G.A. § 12-5-120. Water Well Standards Act of 1985.*

Georgia Environmental Protection Division (GA EPD), 1991, *Criteria for Performing Site Acceptability Studies for Solid Waste Landfills in Georgia – Circular 14.*

Georgia Department of Natural Resources, Environmental Protection Division, 2016, *Proposed Amendments to the Rules of the Department of Natural Resources Environmental Protection Division Relating to Solid Waste Management, Chapter 391-3-4.*

Rules of Georgia Department of Natural Resources, 1991, *Environmental Protection Division, Chapter 391-3-4, Solid Waste Management.*

Southern Company Services, Inc. (SCS). 2007. *Georgia Power Company Plant Wansley Proposed Coal Combustion By-Product Disposal Facility Site Acceptability Report – Revision 1.*

United States Environmental Protection Agency, Region 4, Laboratory Services & Applied Science Division, 2020. Operating Procedure *Field Equipment Cleaning and Decontamination – LSASDPROC-205-R4*, Athens, GA.

United States Environmental Protection Agency, 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery – Program Implementation and Information Division.*

United States Environmental Protection Agency, Region 4 Science and Ecosystem Support Division, 2018. Guidance, *Design and Installation of Monitoring Wells.* SESDGUID-101-R2.

United States Environmental Protection Agency, Region 4 Laboratory Services & Applied Science Division, 2023. Operating Procedure *Surface Water Sampling.* LSASDPROC-201-R6.

United States Environmental Protection Agency, Region 4 Laboratory Services & Applied Science Division, 2023. Operating Procedure, *Groundwater Sampling.* LSASDPROC-301-R6.

United States Environmental Protection Agency, 2015. *40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System, Disposal of Coal Combustion Residuals from Electric Utilities, Final Rule.*

US. Environmental Protection Agency (USEPA), 2015, *40 CFR Part 257, Subpart D - Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments - 80 FR 21468*.

## APPENDIX

---

- A. GROUNDWATER MONITORING NETWORK DOCUMENTATION
- B. GROUNDWATER MONITORING WELL DETAILS
- C. GROUNDWATER SAMPLING PROCEDURE
- D. SURFACE WATER AND UNDERDRAIN SAMPLING AND ANALYSIS PROCEDURES

## **A. GROUNDWATER MONITORING NETWORK DOCUMENTATION**

---

Table A1: Well Construction Details

Table A2: Proposed Groundwater Monitoring Well Network for Cell 4

Figure A1: Compliance Network Plan

Attachment A1: Well Construction and Boring Logs

Attachment A2: Well Drilling Contractor Proof of Bonding

Attachment A3: Surveyor's Certification

## **TABLE A1 WELL CONSTRUCTION DETAILS**

---

**Table A1**  
**Summary of Well Installation Dates, Coordinates, Elevation Screen Interval**

Well ID	Hydraulic Location	Installation Date	Northing	Easting	Latitude	Longitude	Ground Surface Elevation	Top of Casing Elevation	Top of Screen Elevation	Bottom of Screen Elevation	Well Depth	Screen Interval Length	Top of Seal Elevation	Top of Filter Pack Elevation	Bottom of Well Elevation	Screened Media
		(mm/dd/yyyy)	(NAD83)	(NAD83)	(NAD83)	(NAD83)	(NAVD)	(NAVD)	(NAVD)	(NAVD)	(ft BTOC)	(feet)	(NAVD)	(NAVD)	(NAVD)	
GWA-1	Upgradient	3/3/2011	1236940.49	2027869.31	33.3974179	-85.0471283	774.93	778.02	738.53	728.53	49.79	10	742.93	740.93	728.23	PWR
GWA-2	Upgradient	3/3/2011	1237147.60	2027481.39	33.3979780	-85.0484050	813.07	816.16	766.37	756.37	60.09	10	773.57	770.57	756.07	Rock
GWA-3	Upgradient	3/3/2011	1237240.36	2027158.40	33.3982254	-85.0494658	787.27	790.64	769.57	759.57	31.37	10	773.87	771.77	759.27	Rock
GWA-4	Upgradient	2/14/2011	1237254.83	2026747.92	33.3982556	-85.0508110	776.51	779.54	749.31	739.31	40.53	10	752.61	750.61	739.01	PWR
GWC-5	Downgradient	2/10/2011	1237692.42	2026716.41	33.3994574	-85.0509264	753.08	755.91	725.38	715.38	40.83	10	733.58	731.08	715.08	Rock
GWC-6	Downgradient	2/10/2011	1237924.67	2027012.89	33.4001026	-85.0499615	746.86	749.98	729.16	719.16	31.12	10	735.86	731.86	718.86	PWR
GWC-7	Downgradient	2/10/2011	1238261.86	2027268.99	33.4010352	-85.0491318	728.13	731.15	715.43	705.43	26.02	10	719.33	717.33	705.13	Rock
GWC-8	Downgradient	2/22/2011	1238501.55	2027640.45	33.4017025	-85.0479215	720.35	723.46	713.65	703.65	20.11	10	717.85	715.85	703.35	Rock
GWC-9	Downgradient	2/23/2011	1238673.12	2027891.35	33.4021798	-85.0471042	709.71	712.65	703.51	693.51	19.44	10	709.71	705.71	693.21	Rock
GWC-10	Downgradient	7/12/2011	1238949.94	2028308.44	33.4029503	-85.0457453	705.84	709.44	697.74	687.74	21.97	10	704.84	700.64	687.44	PWR/Rock
GWC-11	Downgradient	2/23/2011	1238930.02	2028592.08	33.4029021	-85.0448154	697.89	701.05	693.19	683.19	18.16	10	697.89	694.89	682.89	Soil
GWC-12	Downgradient	2/24/2011	1238738.52	2028921.56	33.4023835	-85.0437306	721.02	724.06	693.82	683.82	40.54	10	698.52	697.02	683.52	Rock
GWC-13	Downgradient	2/28/2011	1238622.44	2029289.86	33.4020730	-85.0425207	691.12	694.08	613.92	603.92	90.46	10	617.92	615.92	603.62	Rock
GWC-14	Downgradient	6/28/2011	1238428.07	2029551.52	33.4015449	-85.0416580	688.59	692.63	678.59	668.59	24.34	10	683.39	681.09	668.29	Soil
GWC-15	Downgradient	2/28/2011	1238163.93	2029814.36	33.4008251	-85.0407896	684.38	687.44	646.68	636.68	51.06	10	652.48	650.38	636.38	Rock/PWR
GWC-16	Downgradient	6/28/2011	1237809.03	2029989.71	33.3998538	-85.0402053	687.13	690.32	673.73	663.73	26.89	10	678.13	674.33	663.43	Soil
GWC-17	Downgradient	6/28/2011	1237469.64	2029801.29	33.3989168	-85.0408133	701.65	704.55	661.65	651.65	53.20	10	666.65	664.65	651.35	Soil
GWC-18	Downgradient	3/1/2011	1237097.77	2029691.53	33.3978924	-85.0411626	697.42	700.31	680.22	670.22	30.39	10	685.42	682.92	669.92	PWR
GWC-19	Downgradient	7/13/2011	1236841.16	2029323.11	33.3971787	-85.0423626	694.54	698.47	670.34	660.34	38.43	10	675.54	673.54	660.04	Soil/PWR
GWC-20	Downgradient	3/1/2011	1236645.57	2029149.57	33.3966371	-85.0429258	703.33	706.29	645.63	635.63	70.96	10	650.33	647.63	635.33	PWR
GWC-21	Downgradient	7/12/2011	1236230.06	2028634.08	33.3954833	-85.0446031	717.32	721.02	693.02	683.02	38.30	10	699.52	697.32	682.72	Soil
GWC-22	Downgradient	3/2/2011	1236396.22	2028325.64	33.3959328	-85.0456182	741.04	744.17	677.34	667.34	77.13	10	682.04	680.04	667.04	PWR
GWC-23	Downgradient	3/2/2011	1236657.67	2028089.81	33.3966458	-85.0463981	770.46	773.41	715.76	705.76	67.95	10	721.76	719.46	705.46	Soil
GWC-24	Downgradient	2/15/2011	1237355.54	2026407.92	33.3985244	-85.0519278	787.48	790.37	749.58	739.58	51.09	10	754.08	751.68	739.28	PWR
GWC-25	Downgradient	2/15/2011	1237404.61	2026089.46	33.3986518	-85.0529725	809.37	812.36	761.37	751.37	61.29	10	768.37	765.37	751.07	Rock
GWC-26	Downgradient	2/16/2011	1237625.00	2025790.42	33.3992505	-85.0539584	782.56	785.60	736.36	726.36	59.54	10	740.56	738.56	726.06	PWR
GWC-27	Downgradient	2/16/2011	1237829.15	2025522.92	33.3998052	-85.0548405	811.38	814.32	753.68	743.68	70.94	10	758.88	756.38	743.38	PWR
GWA-28	Upgradient	2/22/2011	1237995.74	2025182.65	33.4002551	-85.0559600	846.33	849.16	813.63	803.63	45.83	10	817.33	815.33	803.33	Rock
GWA-29	Upgradient	6/27/2011	1238288.93	2024984.27	33.4010561	-85.0566182	831.70	834.67	787.90	777.90	57.07	10	795.70	790.10	777.60	Rock
GWC-30	Downgradient	2/17/2011	1238565.49	2025118.88	33.4018193	-85.0561849	788.46	791.10	751.76	741.76	49.64	10	757.16	755.06	741.46	Soil
GWC-31	Downgradient	6/21/2011	1238701.92	2025618.17	33.4022059	-85.0545528	793.57	797.50	769.97	759.97	38.03	10	780.57	775.57	759.47	Rock
GWC-32	Downgradient	2/18/2011	1238774.04	2025876.12	33.4024102	-85.0537097	782.17	785.38	764.47	754.47	31.21	10	770.37	767.67	754.17	Rock
GWC-33	Downgradient	2/18/2011	1238818.01	2026322.50	33.4025414	-85.0522484	757.02	760.05	746.32	736.32	24.03	10	750.32	748.32	736.02	PWR/Rock
GWC-34	Downgradient	2/21/2011	1238558.69	2026569.25	33.4018346	-85.0514327	732.49	735.40	694.99	684.99	50.91	10	699.49	697.49	684.49	PWR/Rock
GWC-35	Downgradient	2/8/2011	1238243.50	2026822.29	33.4009743	-85.0505949	728.11	730.64	700.41	690.41	40.53	10	705.61	703.11	690.11	PWR/Rock

Notes:

1. Northings and Eastings are feet relative to North American Datum 1983 (NAD83), State Plane Georgia West Zone.
2. Latitudes and longitudes are decimal degrees relative to North American Datum 1983.
3. Elevations are feet relative to North American Vertical Datum of 1988 (NAVD).
4. ft BTOC indicates feet below top of casing.
5. PWR indicates partially weathered rock.
6. Wells resurveyed December 2020.
7. Table provided by ACC and taken from 1st 2021 Semiannual Groundwater Monitoring and Corrective Action Report dated August 31, 2021.
8. Table was updated to incorporate survey data collected October 2025 after repairs were made to GWC-10.

**TABLE A2 PROPOSED GROUNDWATER MONITORING NETWORK FOR CELL 4**

**Table A.2**

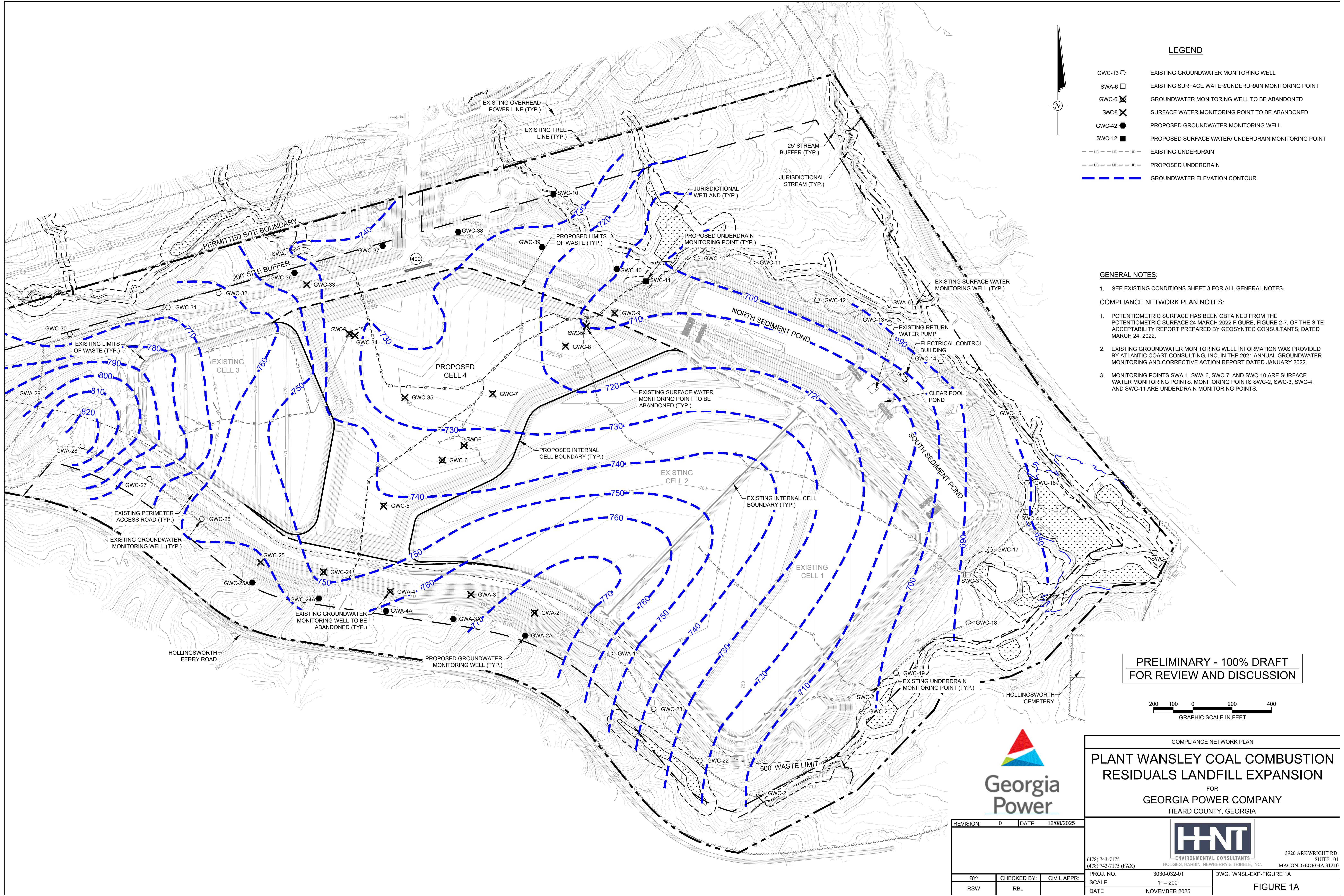
<b>Proposed Groundwater Monitoring Well Network for Cell 4</b>				
<b>Monitoring Well ID</b>	<b>Northing</b>	<b>Easting</b>	<b>Estimated Depth (ft BGS)</b>	<b>Anticipated Geologic Material</b>
GWA-2A	1237031.80	2027436.15	55	SOIL/PWR
GWA-3A	1237116.26	2027070.53	40	SOIL/PWR
GWA-4A	1237157.04	2026727.79	40	SOIL/PWR
GWC-24A	1237220.55	2026385.82	50	SOIL/PWR
GWC-25A	1237310.86	2026047.24	65	SOIL/PWR
GWC-36	1238877.64	2026262.02	40	SOIL/PWR
GWC-37	1239015.47	2026710.56	30	SOIL/PWR
GWC-38	1239086.14	2027094.94	35	SOIL/PWR
GWC-39	1239008.21	2027521.75	40	SOIL/PWR
GWC-40	1238896.85	2027902.03	25	SOIL/PWR

**Notes:**

1. Estimated well depths are twenty (20) feet below the March 24, 2022 potentiometric surface prepared by Geosyntec Consultants (Figure 1A).
2. Wells will be installed no more than 20 feet below the groundwater level encountered at the time of drilling.
3. Wells will be screened within the uppermost aquifer.
4. Actual well construction will be based on conditions encountered at the time of drilling.
5. Wells will be installed using rotosonic drilling techniques.
6. Data on this table will be updated with as-built information after the wells are installed.

**FIGURE A1: COMPLIANCE NETWORK PLAN**

---



- LEGEND**
- GWC-13 ○ EXISTING GROUNDWATER MONITORING WELL
  - SWA-6 □ EXISTING SURFACE WATER/UNDERDRAIN MONITORING POINT
  - GWC-6 ✕ GROUNDWATER MONITORING WELL TO BE ABANDONED
  - SWC-8 ✕ SURFACE WATER MONITORING POINT TO BE ABANDONED
  - GWC-42 ● PROPOSED GROUNDWATER MONITORING WELL
  - SWC-12 ■ PROPOSED SURFACE WATER/ UNDERDRAIN MONITORING POINT
  - - - - - EXISTING UNDERDRAIN
  - - - - - PROPOSED UNDERDRAIN
  - --- GROUNDWATER ELEVATION CONTOUR

- GENERAL NOTES:**
- SEE EXISTING CONDITIONS SHEET 3 FOR ALL GENERAL NOTES.
- COMPLIANCE NETWORK PLAN NOTES:**
- POTENTIOMETRIC SURFACE HAS BEEN OBTAINED FROM THE POTENTIOMETRIC SURFACE 24 MARCH 2022 FIGURE, FIGURE 2-7, OF THE SITE ACCEPTABILITY REPORT PREPARED BY GEOSYNTEC CONSULTANTS, DATED MARCH 24, 2022.
  - EXISTING GROUNDWATER MONITORING WELL INFORMATION WAS PROVIDED BY ATLANTIC COAST CONSULTING, INC. IN THE 2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT DATED JANUARY 2022.
  - MONITORING POINTS SWA-1, SWA-6, SWC-7, AND SWC-10 ARE SURFACE WATER MONITORING POINTS. MONITORING POINTS SWC-2, SWC-3, SWC-4, AND SWC-11 ARE UNDERDRAIN MONITORING POINTS.

**PRELIMINARY - 100% DRAFT  
FOR REVIEW AND DISCUSSION**



COMPLIANCE NETWORK PLAN  
**PLANT WANSLEY COAL COMBUSTION  
 RESIDUALS LANDFILL EXPANSION**  
 FOR  
**GEORGIA POWER COMPANY**  
 HEARD COUNTY, GEORGIA

REVISION:	0	DATE:	12/08/2025
BY:	CHECKED BY:	CIVIL APPR:	
RSW	RBL		

 ENVIRONMENTAL CONSULTANTS HODGES, HARBIN, NEWBERRY & TRIBBLE, INC.		3920 ARKWRIGHT RD. SUITE 101 MACON, GEORGIA 31210
PROJ. NO.	3030-032-01	DWG. WNSL-EXP-FIGURE 1A
SCALE	1" = 200'	
DATE	NOVEMBER 2025	<b>FIGURE 1A</b>

**ATTACHMENT A1: WELL CONSTRUCTION AND BORING LOGS**

---



# LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 3/3/2011 COMPLETED 3/3/2011 SURF. ELEV. 774.93 COORDINATES: N - 1236940.49, E - 2027889.31

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 46.7 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESSEE DATABASE.GDT - 11/9/11 15:54 - T:\ESSEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION	COMMENTS
		<b>Clayey Sand (SC)</b> - red (10R 4/8) damp, trace gravel		
5		<b>(PWR)</b> - very pale brown / very pale orange (10YR 8/2) saprolite micaceous		
10		- PWR: pale red purple (5RP 6/2) saprolite damp - PWR: reddish brown / moderate brown (5YR 4/4) saprolite micaceous		
15		- PWR: brown (10YR 5/3) saprolite wet, micaceous		
20		- PWR: very dark grayish brown (10YR 3/2) saprolite wet, micaceous		
25				
30				
35				
40		- PWR: very pale brown / very pale orange (10YR 8/2) saprolite wet, micaceous		
45				
50		Bottom of borehole at 46.7 feet.		

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWA-1
LOGGER: Sellers	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 3-3-11		

N - 1236940.49, E - 2027869.31		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.09	778.02
1/4-inch Vent	GROUND SURFACE	0.00	774.93
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad			
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 25 gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL		32.00	742.93
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie TOP OF FILTER PACK		34.00	740.93
<b>FILTER PACK</b> TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN		36.40	738.53
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN		46.40	728.53
Flush-threaded end cap	BOTTOM OF CASING	46.70	728.23
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWA-2**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 3/3/2011 COMPLETED 3/3/2011 SURF. ELEV. 813.07 COORDINATES: N - 1237147.60, E - 2027481.39

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 57 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE GDT - 11/9/11 15:55 - THESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION <small>Weak Moderate Strong</small>	COMMENTS
0		<b>Silty Sand (SM)</b> - light red / moderate reddish orange (10R 6/6) trace gravel		
0		<b>(PWR)</b> - reddish brown / moderate brown (5YR 4/4) saprolite micaceous		
10		- PWR: red (10R 4/8) saprolite wet		
20		- PWR: brown (10YR 5/3) saprolite damp, micaceous		
30		- black (10YR 2/1) wet, (drilled without water)		
40		- black (10YR 2/1) wet, (drilled without water)		
50		- Red Staining (drilled with water)		
57		- No red staining		
60		Bottom of borehole at 57.0 feet.		

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWA-2
LOGGER: Sellers	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 3-3-11		

N - 1237147.60, E - 2027481.39		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	3.09	816.16
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	813.07
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 40 gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	39.50	773.57
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 3/4 bag PLACEMENT: Tremie TOP OF FILTER PACK	42.50	770.57
	<b>FILTER PACK</b> TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN	46.70	766.37
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN	56.70	756.37
Flush-threaded end cap	BOTTOM OF CASING	57.00	756.07
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWA-3**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 3/3/2011 COMPLETED 3/3/2011 SURF. ELEV. 787.27 COORDINATES: N - 1237240.36, E - 2027158.40

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD \_\_\_\_\_

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 27 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES \_\_\_\_\_

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/8/11 15:48 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
0		<b>Lean Clay (CL)</b> - red, wet, w/ trace organics					
5		<b>Sandy Lean Clay (SP-SC)</b> - yellow to orange					
10		<b>Partially Weathered Rock</b> - red, clayey saprolite					
15		- red, clayey saprolite; wet					
		- gray to brown, saprolite; wet					
20		<b>Quartzite</b> - tan, vein, dry					
		<b>Schist</b> - brown, grey, red, wet					
25							
30		Bottom of borehole at 27.0 feet.					

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWA-3
LOGGER: Sellers	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 3-3-11		

N - 1237240.36, E - 2027158.40		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	3.37	790.64
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	787.27
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 25 gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	13.40	773.87
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie TOP OF FILTER PACK	15.50	771.77
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN	17.70	769.57
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN	27.70	759.57
Flush-threaded end cap	BOTTOM OF CASING	28.00	759.27
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWA-4**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/11/2011 COMPLETED 2/11/2011 SURF. ELEV. 776.51 COORDINATES: N - 1237254.83, E - 2026747.92

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD \_\_\_\_\_

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 34 ft. GROUND WATER DEPTH: DURING 33 ft. COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES \_\_\_\_\_

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (ROD)	COMMENTS
0 - 5		<b>Silty Sand (SM)</b> - damp, sediments are very micaceous					
5 - 10		<b>Sandy Lean Clay (SP-SC)</b> - orange, moist, low plasticity					
10 - 15		<b>Clayey Sand (SC)</b> - orange to tan, damp, w/ small pieces of highly weathered schist (white)  - tan, damp, w/ more prevalent pieces of weathered schist  - orange, damp, micaceous, no pieces of schist					
15 - 20		<b>Silty Clay (CL-ML)</b> - orange, brown, and gray, damp to wet, medium plasticity, w/ depth, pieces of competent quartz included in core sample					
20 - 25		<b>Partially Weathered Rock</b> - orange, tan, saprolite; saprolite is derived from schist and has weathered to silt and sand, micaceous, moisture content changes with depth (damp to dry)  - tan, saprolite; fewer sands and saprolite is more competent, dry  - mottled tan, light brown, grey, highly weathered, saprolite					
25 - 30		<b>Silty Clay (CL-ML)</b> - light brown, damp, low plasticity					
30 - 35		<b>Clayey Sand (SC)</b> - tan, very moist, prevalent gravel size pieces of weathered schist/gneiss					
35		<b>Gneiss</b> - mottled tan, orange, highly weathered, gneiss is weathering to a lightly clayey sand sediment, some pieces of gneiss are very competent					
35		Bottom of borehole at 34.0 feet.					

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWA-4
LOGGER: Dyer	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 2-14-11		

N - 1237254.83, E - 2026747.92		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.03	779.54
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	776.51
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 22 gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	23.90	752.61
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	25.90	750.61
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3.75 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	27.20	749.31
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	37.20	739.31
	1-50 lbs bag of sand at bottom of hole		
Flush-threaded end cap	BOTTOM OF CASING	37.50	739.01
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-5**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/10/2011 COMPLETED 2/10/2011 SURF. ELEV. 753.08 COORDINATES: N - 1237692.42, E - 2026716.41

CONTRACTOR \_\_\_\_\_ EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 38 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
5		<b>(SM)</b> - orange to tan, dry, w/ angular pieces of partially weathered schist, trace organics					
10		- Schist: dark grey, weathered schist/gneiss, high percentage of grey silt and sand, dry					
15		<b>Partially Weathered Rock</b> - tan, grey, brown, saprolite; grain size is predominantly gravel w/ smaller amounts of sand and silt, dry					
		<b>Silty Clay (CL-ML)</b> - orange, wet, w/ gravel size angular gneissic rock					
		<b>Partially Weathered Rock</b> - tan to brown, saprolite; mostly gravel to boulder sized weathered schist w/ some gneiss, damp					
20		<b>Clayey Gravel (GC)</b> - brown, grey, wet, gravel is composed of consolidated gneissic fragments					
25							missing section.
		<b>Gneiss</b> - dark grey, partially weathered with clay to sand, dry					
		<b>Partially Weathered Rock</b> - orange to tan, saprolite; highly weathered gneiss, damp					
30		<b>Gneiss</b> - grey, consolidated, foliations and structure intact					covered with water.
35							
40		Bottom of borehole at 38.0 feet.					

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-5
LOGGER: Dyer	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 2-10-11		

N - 1237692.42, E - 2026716.41		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	2.83	755.91
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	753.08
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 25 gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	19.50	733.58
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	22.00	731.08
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	27.70	725.38
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	37.70	715.38
	Flush-threaded end cap	BOTTOM OF CASING	38.00 715.08
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-6**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 2/10/2011 COMPLETED 2/10/2011 SURF. ELEV. 746.86 COORDINATES: N - 1237924.67, E - 2027012.89

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD \_\_\_\_\_

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 28 ft. GROUND WATER DEPTH: DURING 21 ft. COMP. \_\_\_\_\_ DELAYED 17.7 ft. after 2 hrs.

NOTES Well installed. Refer to well data sheet.

GEO TECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		<b>Sandy Lean Clay (SP-SC)</b> - orange, wet, medium plasticity, slightly sandy					
5		<b>Partially Weathered Rock</b> - orange to tan, saprolite; mostly gravel, but some is weathered to silt and sand, sediments consist of highly micaceous schist, coarsening downward, poorly sorted, moist					
10		<b>(SM)</b> - orange, dry, pieces of more consistent schist  - tan, w/ some clay and large angular pieces of gneiss present					
15		<b>Poorly-graded Sandy Gravel (GP)</b> - mottled tan to brown, dry, sandy gravel; w/ some muds, gravel is angular and derived from gneiss  - light tan, dry, sandy gravel; gravel is smaller and more elongate (gneissic parent)  - dark grey, dry, sandy gravel (saprolitic); w/ some silts and sands (gneissic parent rock)					
20		<b>Partially Weathered Rock</b> - white to orange, saprolite; sandy gravel with higher percentage of silt, damp - tan to brown, highly weathered, saprolite; moist					
		<b>Partially Weathered Rock</b> - orange to tan, saprolite; high gravel content with sandy clay matrix, gravel is very large and angular, wet					
25		<b>Gneiss</b> - grey, partially weathered gneiss with fine mud matrix, grading down to more unweathered grey gneiss, damp  - grey, consolidated, foliations and structures intact, large angular quartz fragments					
		Bottom of borehole at 28.0 feet.					
30							

23' to 28' water was used for drilling.

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME  GWC-6
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	
LOGGER: Dyer	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 2-10-11		

N - 1237924.67, E - 2027012.89		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.12	749.98
1/4-inch Vent	GROUND SURFACE	0.00	746.86
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad			
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 25 gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	11.00	735.86
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1 bag PLACEMENT: Tremie TOP OF FILTER PACK		15.00	731.86
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN		17.70	729.16
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN		27.70	719.16
Flush-threaded end cap	BOTTOM OF CASING	28.00	718.86
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-7**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED \_\_\_\_\_ COMPLETED 2/10/2011 SURF. ELEV. 728.13 COORDINATES: N - 1238261.86 , E - 2027268.99

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD \_\_\_\_\_

DRILLED BY \_\_\_\_\_ LOGGED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 23 ft. GROUND WATER DEPTH: DURING 12 ft. COMP. \_\_\_\_\_ DELAYED 12.2 ft. after 24 hrs.

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
0 - 5		<b>Partially Weathered Rock</b> - brown to tan, orange, saprolite/regolith, fine silt to sand matrix w/ partially schist clasts. Clasts are angular and partially oxidized, grey zonations are present at 3' and 6', dry. Orange saprolite weathers to sands, gravel, and silt - finer than 0-7'.					
5 - 10		<b>Gneiss</b> - light grey, partially weathered gneiss and schist, mainly sand and silt sized matrix					
10 - 15							no sample.
15 - 20		- grey, consolidated, foliations and structure intact					
20 - 23.0							
23.0		Bottom of borehole at 23.0 feet.					
23.0 - 25							

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-7
LOGGER: Dyer	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 2-10-11		

N - 1238261.86, E - 2027268.99		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.02	731.15
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	728.13
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum			
BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 25 gallons			
<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
TOP OF SEAL		8.80	719.33
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie			
TOP OF FILTER PACK		10.80	717.33
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water			
BOTTOM OF RISER / TOP OF SCREEN		12.70	715.43
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch			
BOTTOM OF SCREEN		22.70	705.43
Flush-threaded end cap	BOTTOM OF CASING	23.00	705.13
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-8**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/22/2011 COMPLETED 2/22/2011 SURF. ELEV. 720.35 COORDINATES: N - 1238501.55, E - 2027640.45

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 17 ft. GROUND WATER DEPTH: DURING 7 ft. COMP. \_\_\_\_\_ DELAYED 7.5 ft. after 18 hrs.

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		<b>Gneiss</b> - brown to dark grey, slightly weathered granitic gneiss; sandy gravel, fragments are competent grades to mottled gray and tan sand w/ small gravels; slightly damp					
5		<b>Silty Sand (SM)</b> - mottled brown, grey, tan, wet, w/ fewer gravel sized seps, possible small clayey silt layer					
10		<b>Gneiss</b> - tan to brown, slightly weathered gneiss; very competent, sandy gravel, very moist - grey, white, very hard, sample is extremely competent, displays ideal gneissic bonding w/ pink (feldspar) and white bands (quartz) up to .5" thick, lacks fractures and oxide staining, dry					possible solid rock content, possible confining layer - 20% clay to 40% clay. 8' to 10' minor amounts of oxide staining.
15							
17.0		Bottom of borehole at 17.0 feet.					

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

20

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-8
LOGGER: Dyer	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 2-22-11		

N - 1238501.55, E - 2027640.45		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.11	723.46
1/4-inch Vent	GROUND SURFACE	0.00	720.35
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad			
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT:			
<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL		2.50	717.85
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie TOP OF FILTER PACK		4.50	715.85
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN		6.70	713.65
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN		16.70	703.65
Flush-threaded end cap	BOTTOM OF CASING	17.00	703.35
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-9**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/23/2011 COMPLETED 2/23/2011 SURF. ELEV. 709.71 COORDINATES: N - 1238673.12, E - 2027891.35

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 16.5 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED 4.2 ft. after 20 hrs.

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		<b>Silt (SM)</b> - tan, brown, wet, low to medium plasticity, fine sand; few gravel sized pieces of quartz, clay fraction = 10%					
		<b>Poorly-graded Sandy Gravel (SP)</b> - mottled tan, brown, dark grey, moist, low plasticity, medium to coarse grain, w/ gravel, gravel is comprised of quartz/gneissic fragments, some clay (approximately 9%)					
5							
		<b>Gneiss</b> - grey, white, hard, very competent, MOP iron oxide staining, some gold staining, quartz and feldspar bands 2" thick					
10							
		- grey, white, hard, very competent, small amounts of iron staining w/ some gold staining, no fractures					
15							
		<b>Poorly-graded Gravel (GP)</b> - zone of angular gravel, oxide staining					
		<b>Gneiss</b> - grey, white, hard, some oxide staining, competent					
		Bottom of borehole at 16.5 feet.					gravel resembles that of stream bed.
20							

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME  GWC-9
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	
LOGGER: Dyer	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 2-23-11		

N - 1238673.12, E - 2027891.35		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	2.94	712.65
1/4-inch Vent	GROUND SURFACE	0.00	709.71
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad			
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT:			
<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL		Surface	709.71
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie TOP OF FILTER PACK		4.00	705.71
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN		6.20	703.51
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN		16.20	693.51
Flush-threaded end cap	BOTTOM OF CASING	16.50	693.21
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-10**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 7/12/2011 COMPLETED 7/12/2011 SURF. ELEV. 705.84 COORDINATES: N - 1238950.81, E - 2028309.04

CONTRACTOR SCS Field Services EQUIPMENT 550X METHOD HQ Casing; HQ Rock Core

DRILLED BY \_\_\_\_\_ LOGGED BY B. Gallagher CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 20.5 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED 8.5 ft. after 18 hrs.

NOTES Well installed. Refer to well data sheet.

GEO TECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/09/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (ROD)	COMMENTS
5		(ML) - dark brown, damp, medium dense, thin layer of silty fill over silty, sand residuum to partially weathered rock					
10							
15		Gneiss - white and black, hard, slightly weathered, schistose with quartz phenocrysts - healed joint at 12.2 ft.	RC -1	12.0-15.5	WR-WR-WR (0)	100 (100)	Auger Refusal at 12.0 ft.
20			RC -2	15.5-20.5	WR-WR-WR (0)	100 (100)	
Bottom of borehole at 20.5 feet.							
25							
30							
35							
40							

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-10
LOGGER: Brooks	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 7-12-11		

N - 1238950.81, E - 2028309.04		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	3.57	709.41
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	705.84
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT:		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	1.00	704.84
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1 bucket PLACEMENT: Tremie		
	TOP OF FILTER PACK	5.20	700.64
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 2 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	8.10	697.74
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	18.10	687.74
	BOTTOM OF CASING	18.40	687.44
	BOTTOM OF HOLE	20.50	685.34
	2.1' of Sand fill		

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.

HOLE DIA: 6"



# LOG OF TEST BORING

**BORING GWC-11**  
PAGE 1 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 2/23/2011 COMPLETED 2/23/2011 SURF. ELEV. 697.89 COORDINATES: N- 1238930.02, E - 2028592.08

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotasonic

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 28 ft (15 ft well) GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED 3.4 ft. after 16 hrs.

NOTES Well installed. Refer to well data sheet.

GEOTECH. ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (ROD)	COMMENTS
		<b>Silty Sand (SM)</b> - orange, red, damp, w/ organics					
		<b>Poorly-graded Sandy Gravel (SP)</b> - light grey, wet, coarse grain, w/ gravel (stream bed deposit), gravels are angular and small					2' - 6' high yield zone.
5		<b>Silty Sand (SM)</b> - orange, moist, w/ some clay (approximately 5%)  - orange, tan, damp, increased consolidation, original gneissic foliations (relic structures observed in sediment), less H2O					6' - 11' moderate yield zone.
10							
15							

(Continued Next Page)



# LOG OF TEST BORING

**BORING GWC-11**  
PAGE 2 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

GEO TECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/08/11 15:48 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		<b>Silty Sand (SM)(con't)</b>  - less consolidation than 8' - 16' section, finer grained, and more clay (approximately 10%)					
		<b>Partially Weathered Rock</b> - mottled red, brown, tan, highly weathered, saprolite					sanded up to 18'
20							
		<b>Gneiss</b>					
25							
		Bottom of borehole at 28.0 feet.					
30							

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME  GWC-11
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	
LOGGER: Dyer	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 2-23-11		

N - 1238930.02, E - 2028592.08		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.16	701.05
1/4-inch Vent	GROUND SURFACE	0.00	697.89
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad			
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT:			
<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL		Surface	697.89
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1 bag PLACEMENT: Tremie TOP OF FILTER PACK		3.00	694.89
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN		4.70	693.19
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN		14.70	683.19
Flush-threaded end cap BOTTOM OF CASING		15.00	682.89
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-12**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 2/23/2011 COMPLETED 2/24/2011 SURF. ELEV. 721.02 COORDINATES: N - 1238738.52, E - 2028921.56

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotasonic

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 37.5 ft. GROUND WATER DEPTH: DURING 17 ft. COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES \_\_\_\_\_

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
0		<b>Poorly-graded Sand (SP)</b> - orange, damp, w/ trace organics					
5		<b>Poorly-graded Sand with Silt (SP-SM)</b> - mottled dark brown, tan, damp, w/ some medium sized gravels: sand = 70%, silt = 20%, and gravels = 10%. gravels are weathered gneiss, not very competent mod well sorted and poorly graded, potentially trace clays  - zonation of more tan sediment from 12' to 13'					7' - 8' more dry.
10							
15							
20		- red, wet, w/ few clays (approximately 5%)  - damp					
25		<b>Poorly-graded Sandy Gravel (SP)</b> - brown, red, slightly damp, w/ gravel					
30		<b>Gneiss</b> - grey, white, slightly weathered gneiss weathering to silt, competent, some iron staining and pyrite staining w/ increasing depth - grey, white, moderate amounts of Fe oxide staining, heavy pyrite staining					
35							
40							

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.

Bottom of borehole at 37.5 feet.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.:	Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:		
LOCATION: Plant Wansley	RIG TYPE:	Roto Sonic	GWC-12
LOGGER: Dyer	DRILLING METHODS:	Roto Sonic	
DATE CONSTRUCTED: 2-24-11			

N - 1238738.52, E - 2028921.56		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.04	724.06
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	721.02
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 35 Gallons			
<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL		22.50	698.52
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie TOP OF FILTER PACK		24.00	697.02
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN		27.20	693.82
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN		37.20	683.82
Flush-threaded end cap	BOTTOM OF CASING	37.50	683.52
NOTE: Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone. Well resurveyed in December 2020.			
HOLE DIA: 6"			



# LOG OF TEST BORING

**BORING GWC-13**  
PAGE 1 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/24/2011 COMPLETED 2/24/2011 SURF. ELEV. 691.12 COORDINATES: N - 1238622.44, E - 2029289.86

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotasonic

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 87.5 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION <small>Weak Moderate Strong</small>	COMMENTS
5		<p><b>Poorly-graded Sandy Gravel (GP)</b> - light red / moderate reddish orange (10R 6/6) very moist, Sand is coarse, Gravel is angular, poorly sorted - GP: brown (10YR 5/3) and black (10YR 2/1) moist, Highly micaceous, gravel is partially weathered SCHIST</p>		
10		<p>- GP: brown (10YR 5/3) and black (10YR 2/1) moist, Highly micaceous, gravel is partially weathered SCHIST</p>		
15		<p><b>SCHIST</b> - brown (10YR 4/3), light brown (7.5YR 6/3) and black (10YR 2/1) moderately weathered, moist</p>		
20		<p><b>Mica SCHIST</b> - brown (10YR 4/3), light brown (7.5YR 6/3) and black (10YR 2/1) moderately to highly weathered, Relic Structures visible, moist</p>		
25		<p>- SAA, more H2O content</p>		
30		<p><b>Poorly-graded Sand (SP)</b> - brown (10YR 4/3), light brown (7.5YR 6/3) and black (10YR 2/1) wet coarse micaceous sands</p>		
35		<p><b>Poorly-graded Sandy Gravel (GP)</b> - brown (10YR 4/3), light brown (7.5YR 6/3) and black (10YR 2/1) moist, medium to coarse grained sands with SCHIST gravel</p>		
40		<p>- GP: brown (10YR 4/3) and light brown (7.5YR 6/3) wet</p>		
45		<p><b>Poorly-graded Sand (SP)</b> - brown (10YR 4/3) and light brown (7.5YR 6/3) damp, mostly sand, fewer gravel than previous intervals</p>		
50		<p><b>Poorly-graded Sandy Gravel (GP)</b> - gray (10YR 6/1) and white (10R 8/1) GNEISS 60% gravel, 40% sand</p>		

(Continued Next Page)



# LOG OF TEST BORING

**BORING GWC-13**  
PAGE 2 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/09/11 15:55 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION Weak Moderate Strong	COMMENTS
		Poorly-graded Sandy Gravel (GP) (Con't)		
55		<b>GNEISS</b> - gray (10YR 6/1) and white (10YR 8/1) not weathered, hard and competent - brown (10YR 4/3), light brown (7.5YR 6/3) and black (10YR 2/1) completely weathered, most likely a fractured or fault zone, very micaceous, wet		
60		<b>GNEISS</b> - gray (10YR 6/1) slightly weathered, hard, very competent, dry		
65				
70		<b>Poorly-graded Sandy Gravel (GP)</b> - brown (10YR 4/3), light brown (7.5YR 6/3) and dark grayish brown / dark yellowish brown (10YR 4/2) damp, highly weathered SCHIST		
75				
80		<b>GNEISS</b> - gray (10YR 6/1) and white (10YR 8/1) slightly weathered, competent, hard, prevalent Fe-oxide staining		
85				
90		Bottom of borehole at 87.5 feet.		
95				
100				
105				
110				

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD).  
 Coordinates are in North American Datum of 1983 (NAD83)  
 Georgia State Plane East Zone.  
 Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME  GWC-13
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	
LOGGER: Dyer	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 2-28-11		

N - 1238622.44, E - 2029289.86		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	2.96	694.08
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	691.12
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 35 Gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL		73.20	617.92
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 3/4 bag PLACEMENT: Tremie TOP OF FILTER PACK		75.20	615.92
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN		77.20	613.92
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN		87.20	603.92
Flush-threaded end cap	BOTTOM OF CASING	87.50	603.62
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-14**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 6/28/2011 COMPLETED 6/28/2011 SURF. ELEV. 688.59 COORDINATES: N - 1238428.07, E - 2029551.52

CONTRACTOR SCS Field Services EQUIPMENT \_\_\_\_\_ METHOD 3 1/4" Hollow Stem Auger

DRILLED BY \_\_\_\_\_ LOGGED BY D. Brooks CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 20.5 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED 5.97 ft. after 12 hrs.

NOTES Well installed. Refer to well data sheet.

GEO TECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS	
5		<b>Poorly-graded Sand (SP)</b> - brown and gray, moist, loose	SS-1	4.5-6.0	2-3-4 (7)			
10			<b>Silty Sand (SM)</b> - gray and brown, wet, very dense	SS-2	9.5-10.7	15-10-50/2" (100+)		
15				SS-3	14.5-14.8	50-WR-WR/- 8" (100+)		
20		Bottom of borehole at 20.5 feet.						

**NOTE:**

Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

25

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.:	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE:	
LOGGER: Brooks	DRILLING METHODS:	
DATE CONSTRUCTED: 6-28-11		GWC-14

N - 1238428.07, E - 2029551.52		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	4.04	692.63
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	688.59
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum			
BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT:			
<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
TOP OF SEAL		5.20	683.39
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bucket of coated pellets PLACEMENT: Tremie			
TOP OF FILTER PACK		7.50	681.09
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water			
BOTTOM OF RISER / TOP OF SCREEN		10.00	678.59
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch			
BOTTOM OF SCREEN		20.00	668.59
Flush-threaded end cap			
BOTTOM OF CASING		20.30	668.29
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-15**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 2/28/2011 COMPLETED 2/28/2011 SURF. ELEV. 684.38 COORDINATES: N - 1238163.93, E - 2029814.36

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 48 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 1/19/11 15:55 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION Weak Moderate Strong	COMMENTS
0		<b>Silty Sand (SM)</b> - brown (10YR 4/3) and light red / moderate reddish orange (10R 6/6) trace of gravel		
5		<b>Silty Sand (SM)</b> - light red / moderate reddish orange (10R 6/6) damp (PWR) - gray (10YR 5/1) saprolite damp, very micaceous		
10				
15				
20		- PWR: gray (10YR 5/1) saprolite wet, micaceous		
25		- PWR: gray (10YR 5/1) saprolite wet, micaceous, *From 20-28 orange banding every 1.5'		
30				
35				
40		<b>SCHIST</b> - gray (10YR 5/1) moderately weathered, damp  - SCHIST: gray (10YR 5/1) damp		
45		(PWR) - gray (10YR 5/1) saprolite <b>SCHIST</b> - black (2.5Y 2.5/1)		
50		Bottom of borehole at 48.0 feet.		

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME  GWC-15
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	
LOGGER: Sellers	DRILLING METHODS: Roto Sonic	
DATE CONSTRUCTED: 2-28-11		

N - 1238163.93, E - 2029814.36		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.06	687.44
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	684.38
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 35 Gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL		31.90	652.48
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 3/4 bag PLACEMENT: Tremie TOP OF FILTER PACK		34.00	650.38
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN		37.70	646.68
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN		47.70	636.68
Flush-threaded end cap	BOTTOM OF CASING	48.00	636.38
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-16**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 6/28/2011 COMPLETED 6/28/2011 SURF. ELEV. 687.13 COORDINATES: N - 1237809.03, E - 2029989.71

CONTRACTOR SCS Field Services EQUIPMENT 550X METHOD 3 1/4" Hollow Stem Auger

DRILLED BY \_\_\_\_\_ LOGGED BY D. Brooks CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 24.9 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
5		<b>Clayey Sand (SC)</b> - reddish brown, damp, medium dense, with wood chips  <b>Silty Sand (SM)</b> - gray, wet, very dense, saprolite	SS-1	4.5-6.0	7-13-10 (23)		
10			SS-2	9.5-11.0	7-7-5 (12)		
15			SS-3	14.5-15.3	17-50-WR/-2" (100+)		
20			SS-4	19.5-20.3	30-50-WR/-2" (100+)		
24.9			SS-5	24.5-24.9	50-WR-WR/-7" (100+)		
		Bottom of borehole at 24.9 feet.					
30							
35							
40							

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.:	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE:	GWC-16
LOGGER: Brooks	DRILLING METHODS:	
DATE CONSTRUCTED: 6-28-11		

N - 1237809.03, E - 2029989.71		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.19	690.32
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	687.13
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT:			
<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL		9.00	678.13
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 3/4 bag PLACEMENT: Tremie TOP OF FILTER PACK		12.80	674.33
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN		13.40	673.73
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN		23.40	663.73
Flush-threaded end cap	BOTTOM OF CASING	23.70	663.43
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-17**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 6/27/2011 COMPLETED 6/28/2011 SURF. ELEV. 701.65 COORDINATES: N - 1237469.64, E - 2029801.29

CONTRACTOR SCS Field Services EQUIPMENT 550X METHOD 3 1/4" Hollow Stem Auger

DRILLED BY \_\_\_\_\_ LOGGED BY D. Brooks CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 50.5 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED 18.5 ft. after 4 hrs.

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		<b>Clayey Sand (SC)</b> - brown, damp, loose, fine grain, with pieces of wood					
10			SS -1	4.5-6.0	2-5-6 (11)		
			SS -2	9.5-11.0	2-3-4 (7)		
			SS -3	14.5-16.0	3-1-3 (4)		
20		- yellowish red below 19.5 ft	SS -4	19.5-21.0	2-3-3 (6)		
			SS -5	24.5-26.0	3-3-4 (7)		
30			SS -6	29.5-31.0	2-2-3 (5)		
		<b>(SC)</b> - yellowish red, wet, dense, saprolite					
40							
50							

Bottom of borehole at 50.5 feet.

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: SCS Field Services	WELL NAME  GWC-17
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: CME 550X	
LOGGER: Brooks	DRILLING METHODS: Hollow Stem Auger	
DATE CONSTRUCTED: 6-28-11		

N - 1237469.64, E - 2029801.29		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	2.90	704.55
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	701.65
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 60 Gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	35.00	666.65
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bucket PLACEMENT: Tremie TOP OF FILTER PACK			
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.25 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN			
	TOP OF FILTER PACK	37.00	664.65
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN			
	BOTTOM OF SCREEN	50.00	651.65
Flush-threaded end cap	BOTTOM OF CASING	50.30	651.35
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-18**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 3/1/2011 COMPLETED 3/1/2011 SURF. ELEV. 697.42 COORDINATES: N - 1237097.77 E - 2029691.53

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 27.5 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE: GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION Weak Moderate Strong	COMMENTS
		<b>Lean Clay (CL)</b> - red (10R 4/8) small amount of sand		
5		<b>Silty Sand (SM)</b> - light yellowish brown (10YR 6/4) wet, mica at 7.5', black organics throughout		
10				
15				
		<b>Silty Sand (SM)</b> - gray (10YR 5/1) wet, traces of gravel		
20		<b>(PWR)</b> - gray (10YR 5/1) saprolite wet		
25				
		<b>SCHIST</b> - black (2.5Y 2.5/1)		
30		Bottom of borehole at 27.5 feet.		
35				
40				

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.:	Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:		
LOCATION: Plant Wansley	RIG TYPE:	Roto Sonic	GWC-18
LOGGER: Sellers	DRILLING METHODS:	Sonic	
DATE CONSTRUCTED: 3-1-11			

N - 1237097.77, E - 2029691.53		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	2.89	700.31
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	697.42
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 20 Gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	12.00	685.42
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie			
	TOP OF FILTER PACK	14.50	682.92
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water			
	BOTTOM OF RISER / TOP OF SCREEN	17.20	680.22
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch			
	BOTTOM OF SCREEN	27.20	670.22
	BOTTOM OF CASING	27.50	669.92
Flush-threaded end cap			
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-19**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 7/13/2011 COMPLETED 7/13/2011 SURF. ELEV. 694.54 COORDINATES: N - 1236841.16, E - 2029323.11

CONTRACTOR SCS Field Services EQUIPMENT 550X METHOD 3 1/4" Hollow Stem Auger; HQ Casing; HQ Rock Core

DRILLED BY \_\_\_\_\_ LOGGED BY B. Gallagher CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 34.7 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
5		<b>Sandy Lean Clay (CL)</b> - tan and gray, damp, medium stiff, low plasticity, fine grain, sandy	SS -1	4.5-6.0	2-3-4 (7)		
10							
		- with mica and faint rock texture	SS -2	9.5-11.0	2-2-3 (5)		
15							
		<b>Silt (ML)</b> - olive and dark gray, moist, loose, faint rock texture	SS -3	14.5-16.0	2-2-2 (4)		
20							
		- reddish orange and tan	SS -4	19.5-21.0	3-4-7 (11)		
25							
		<b>Partially Weathered Rock</b> - dark gray, moist, silty, trace fine sand	SS -1	24.5-26.0	6-8-10 (18)		
30							
				SS -1	29.5-30.2	38-50-WR/-4" (100+)	
34.7		Bottom of borehole at 34.7 feet.	SS -1	34.5-34.7	50-WR-WR/-10" (100+)		
40							
45							
50							

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.:	SCS Field Services	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:		
LOCATION: Plant Wansley	RIG TYPE:	CME 550X	GWC-19
LOGGER: Gallagher	DRILLING METHODS:	Hollow Stem Auger	
DATE CONSTRUCTED: 7-13-11			

N - 1236841.16, E - 2029323.11		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	3.93	698.47
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	694.54
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 20 Gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	19.00	675.54
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie			
	TOP OF FILTER PACK	21.00	673.54
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water			
	BOTTOM OF RISER / TOP OF SCREEN	24.20	670.34
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch			
	BOTTOM OF SCREEN	34.20	660.34
	BOTTOM OF CASING	34.50	660.04
Flush-threaded end cap			
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-20**  
PAGE 1 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 3/1/2011 COMPLETED 3/1/2011 SURF. ELEV. 703.33 COORDINATES: N - 1236645.57, E - 2029149.57

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 68 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION	COMMENTS
		(OL) - black (10YR 2/1) topsoil		
		Lean Clay (CL) - light red / moderate reddish orange (10R 6/6) from Dyke runoff		
5		Silty Sand (SM) - gray (10YR 5/1) contains yellow staining, mica throughout, trace gravel		
10		(PWR) - light red / moderate reddish orange (10R 6/6) saprolite - black organics - CL: light green (5G 7/4) damp, found within saprolite		
15				
20		- light red / moderate reddish orange (10R 6/6) saprolite		
25		(PWR) - light red / moderate reddish orange (10R 6/6) and gray (10YR 5/1) saprolite damp, trace gravel		
30		(PWR) - gray (10YR 5/1) saprolite dry		
35		(PWR) - light red / moderate reddish orange (10R 6/6) saprolite wet, top 2' are black		
40		- PWR: gray (10YR 5/1) and light red / moderate reddish orange (10R		

(Continued Next Page)



# LOG OF TEST BORING

**BORING GWC-20**  
PAGE 2 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

SIMPLE GEOLOGY LOG - ESEEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION	COMMENTS
			Weak Moderate Strong	
45		6/6) saprolite wet, grey with orange streaks (PWR) (Con't)		
50		(PWR) - saprolite wet, 30% recovery, consolidated		
55				
60		(PWR) - gray (10YR 5/1) saprolite wet		
65				
70		<b>SCHIST</b> - contains garnets and mica  Bottom of borehole at 68.0 feet.		
75				
80				
85				

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.:	Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:		
LOCATION: Plant Wansley	RIG TYPE:	Roto Sonic	GWC-20
LOGGER: Sellers	DRILLING METHODS:		
DATE CONSTRUCTED: 3-1-11			

N - 1236645.57, E - 2029149.57		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	2.96	706.29
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	703.33
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 40 Gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	53.00	650.33
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 3/4 bag PLACEMENT: Tremie			
	TOP OF FILTER PACK	55.70	647.63
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water			
	BOTTOM OF RISER / TOP OF SCREEN	57.70	645.63
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch			
	BOTTOM OF SCREEN	67.70	635.63
Flush-threaded end cap	BOTTOM OF CASING	68.00	635.33
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-21**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 7/12/2011 COMPLETED 7/12/2011 SURF. ELEV. 717.32 COORDINATES: N - 1236230.06, E - 2028634.08

CONTRACTOR SCS Field Services EQUIPMENT 550X METHOD 3 1/4" Hollow Stem Auger; HQ Casing; HQ Rock Core

DRILLED BY \_\_\_\_\_ LOGGED BY B. Gallagher CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 34.6 ft. GROUND WATER DEPTH: DURING 14.5 ft. COMP. \_\_\_\_\_ DELAYED 15.1 ft. after 14 hrs.

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
0		<b>Silt (ML)</b> - brown and gray, damp, loose, low plasticity					
5			SS -1	4.5-6.0	4-4-4 (8)		
10			SS -2	9.5-11.0	4-6-6 (12)		
15		<b>Lean Clay (CL)</b> - gray, moist, medium stiff, low plasticity, with pieces of black schist (possible fill)					
15		<b>Clayey Sand (SC)</b> - orangish brown, wet, loose, fine grain	SS -3	14.5-16.0	2-2-3 (5)		
20			SS -4	19.5-21.0	3-2-4 (6)		
25		<b>Silty Sand (SM)</b> - varigated black white and orangish tan, wet, loose to medium dense, with schist texture	SS -5	24.5-26.0	5-6-7 (13)		
30			SS -6	29.5-31.0	5-7-12 (19)		
34.6		Bottom of borehole at 34.6 feet.					
40							
45							
50							

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: SCS Field Services	WELL NAME  GWC-21
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: CME 550X	
LOGGER: Gallagher	DRILLING METHODS: Hollow Stem Auger	
DATE CONSTRUCTED: 7-12-11		

N - 1236230.06, E - 2028634.08		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.70	721.02
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	717.32
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum			
BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT:			
<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	17.80	699.52
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bucket PLACEMENT: Tremie			
	TOP OF FILTER PACK	20.00	697.32
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water			
	BOTTOM OF RISER / TOP OF SCREEN	24.30	693.02
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch			
	BOTTOM OF SCREEN	34.30	683.02
Flush-threaded end cap	BOTTOM OF CASING	34.60	682.72
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-22**  
PAGE 1 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 3/2/2011 COMPLETED 3/2/2011 SURF. ELEV. 741.04 COORDINATES: N - 1236396.22, E - 2028325.64

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotasonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 79 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL	COMMENTS
			REACTION	
			Weak Moderate Strong	
5		<b>Sandy Lean Clay (SC)</b> - red (10R 5/8) damp		
10		- SC: red (10R 5/8) damp, trace gravel		
15				
20		<b>Silty Sand (SM)</b> - light yellowish brown (10YR 6/4) wet, micaceous with gravel		
25		- SM: light yellowish brown (10YR 6/4) micaceous with gravel and biotite		
30		- SM: light yellowish brown (10YR 6/4) wet, micaceous with gravel and biotite		
35		<b>(PWR)</b> - yellow (10YR 7/6) and gray (10YR 5/1) saprolite damp		
40				

(Continued Next Page)



# LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION <small>Weak Moderate Strong</small>	COMMENTS
		(PWR) (Con't) - PWR: light yellowish brown (10YR 6/4) saprolite damp, with Forest Green streaking		
45		(PWR) - brilliant green (5G 6/6) saprolite damp, contains brittle white banding layers		
50		(PWR) - brilliant green (5G 6/6) and light brown (7.5YR 6/4) saprolite damp		
		(PWR) - brown (7.5YR 5/3) saprolite		
55		(PWR) - brilliant green (5G 6/6) saprolite		
		(PWR) - light brown (7.5YR 6/4) and brilliant green (5G 6/6) saprolite damp, very brittle		
60				
		(PWR) - light brown (7.5YR 6/4) and light red / moderate reddish orange (10R 6/6) saprolite damp		
65				
		(PWR) - brown (7.5YR 4/4) saprolite damp		
70				
75				
80		Bottom of borehole at 79.0 feet.		
85				

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-22
LOGGER: Sellers	DRILLING METHODS:	
DATE CONSTRUCTED: 3-2-11		

N - 1236396.22, E - 2028325.64		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	3.13	744.17
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	741.04
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 40 Gallons			
<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	59.00	682.04
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie			
	TOP OF FILTER PACK	61.00	680.04
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water			
	BOTTOM OF RISER / TOP OF SCREEN	63.70	677.34
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch			
	BOTTOM OF SCREEN	73.70	667.34
	BOTTOM OF CASING	74.00	667.04
	BOTTOM OF HOLE	79.00	662.04
	Flush-threaded end cap		
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-23**  
PAGE 1 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 3/2/2011 COMPLETED 3/2/2011 SURF. ELEV. 770.46 COORDINATES: N - 1236657.67, E - 2028089.81

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 65 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION <small>Weak Moderate Strong</small>	COMMENTS
		<b>Clayey Sand (SC)</b> - red (10R 5/6)		
5		(PWR) - red (10R 5/6) and brown (7.5YR 5/3) saprolite dry, micaceous		
10				
15		- PWR: light brownish gray / pale yellowish brown (10YR 6/2) saprolite dry, micaceous		
20				
25		- PWR: light brownish gray / pale yellowish brown (10YR 6/2) saprolite damp, more consolidated		
30				
35		- PWR: very dark gray (10YR 3/1) saprolite damp <b>SCHIST</b> - very dark gray (10YR 3/1)		
		(PWR) - light brown (7.5YR 6/4) saprolite damp, micaceous		
40		(PWR) - brown (7.5YR 4/4) and gray (10YR 5/1) saprolite wet		

(Continued Next Page)



# LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

SAMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION <small>Weak Moderate Strong</small>	COMMENTS
45		<b>Silty Sand (SM)</b> - gray (2.5Y 5/1) <b>(PWR)</b> - brown (7.5YR 4/4) and gray (10YR 5/1) saprolite wet		
50		<b>Silty Sand (SM)</b> - very dark gray (10YR 3/1) dry - gray (10YR 6/1) and light brown (7.5YR 6/3) saprolite wet, micaceous		
55				
60				
65		<b>SCHIST</b> - contains garnets and mica  Bottom of borehole at 65.0 feet.		
70				
75				
80				
85				

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-23
LOGGER: Sellers	DRILLING METHODS:	
DATE CONSTRUCTED: 3-2-11		

N - 1236657.67, E - 2028089.81		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	2.95	773.41
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	770.46
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 60 Gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	48.70	721.76
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	51.00	719.46
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	54.70	715.76
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	64.70	705.76
	BOTTOM OF CASING	65.00	705.46
	Flush-threaded end cap		
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-24**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/15/2011 COMPLETED 2/15/2011 SURF. ELEV. 787.48 COORDINATES: N - 1237355.54, E - 2026407.92

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotasonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers/ Gallagher CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 48.2 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION Weak Moderate Strong	COMMENTS
0		<b>Clayey Sand (SC)</b> - reddish brown (5YR 5/3) damp		
0		<b>Poorly-graded Sand (SP)</b> - light brown (7.5YR 6/3)		
5		<b>Clayey Sand (SC)</b> - saprolite contains mica		
5		<b>Poorly-graded Sandy Gravel (SP)</b> - white (10R 8/1) feldspar rich sands, trace gravels		
10		<b>Silty Sand (SM)</b> - pale brown (10YR 6/3) saprolite contains mica, gravel		
10		<b>Clayey Sand (SP)</b> - red (10R 5/6) trace clay		
15		<b>Lean Clay (CL)</b> - brown (7.5YR 4/3) and red (10R 5/8)		
15		<b>Silty Sand (SM)</b> - red (10R 5/8) and yellow (10YR 7/6) micaceous, trace gravel		
20		<b>Silty Sand (SM)</b> - yellow (10YR 7/6) and brown (7.5YR 4/3) micaceous, trace schist gravel		
25		<b>Silty Sand (SM)</b> - saprolite micaceous, schist gravel, (5' of recovery: start water @ 29' and stoped @ 35')		
30		<b>(PWR)</b> - black (5YR 2.5/1) (4' of recovery)		
40				
45				
50		Bottom of borehole at 48.2 feet.		

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-24
LOGGER: Sellers/Gallagher	DRILLING METHODS:	
DATE CONSTRUCTED: 2-15-11		

N - 1237355.54, E - 2026407.92		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	2.89	790.37
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	787.48
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 50 Gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	33.40	754.08
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 3/4 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	35.80	751.68
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	37.90	749.58
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	47.90	739.58
	Flush-threaded end cap	BOTTOM OF CASING	48.20 739.28
<b>NOTE:</b> Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone. Well resurveyed in December 2020.			
HOLE DIA: 6"			



# LOG OF TEST BORING

**BORING GWC-25**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/15/2011 COMPLETED 2/15/2011 SURF. ELEV. 809.37 COORDINATES: N - 1237404.61, E - 2026089.46

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY B. Gallagher/ Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 58.3 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/8/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION <small>Weak Moderate Strong</small>	COMMENTS
10		<b>Silty Sand (SM)</b> - red (2.5YR 4/6) and yellow (2.5Y 8/8) trace gravel <b>Silty Sand (SM)</b> - red (2.5YR 4/6) and brown (7.5YR 5/4)		
20		<b>Poorly-graded Sand (SP)</b> - white (10YR 8/1) weathered feldspar <b>Silty Sand (SM)</b> - red (2.5YR 4/6) and brown (7.5YR 5/4) streaks of mica, beginning to be clayey <b>Clayey Sand (SC)</b> - red (2.5YR 4/6) with mica <b>Silty Sand (SM)</b> - red / moderate reddish brown (10R 4/6) and brown (7.5YR 5/4)		
30		<b>Clayey Sand (SC)</b> - red (2.5YR 4/6) saprolite micaceous <b>Silty Sand (SM)</b> - dark yellowish brown (10YR 4/6) micaceous, with trace schist <b>Clayey Sand (SC)</b> - red (2.5YR 4/6) contains some gravel <b>Clayey Sand (SC)</b> - brown (7.5YR 5/4) with white gravel throughout		
40		<b>Silty Sand (SM)</b> - yellow (2.5Y 8/8) and white (10YR 8/1) saprolite <b>Silty Sand (SM)</b> - brown (7.5YR 4/2) 50% recovery		
50		<b>(PWR)</b> - gray (10YR 5/1) <b>GNEISS</b>		
60		Bottom of borehole at 58.3 feet.		

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-25
LOGGER: Sellers/Gallagher	DRILLING METHODS:	
DATE CONSTRUCTED: 2-15-11		

N - 1237404.61, E - 2026089.46		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	2.99	812.36
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	809.37
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 60 Gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	41.00	768.37
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	44.00	765.37
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	48.00	761.37
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	58.00	751.37
	BOTTOM OF CASING	58.30	751.07
	Flush-threaded end cap		
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-26**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 2/16/2011 COMPLETED 2/16/2011 SURF. ELEV. 782.56 COORDINATES: N - 1237625.00, E - 2025790.42

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY B. Gallagher/ C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 56.5 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESSEE DATABASE.GDT - 11/9/11 15:55 - T:\ESSEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION		COMMENTS
			Weak	Moderate Strong	
		(OH) <b>Lean Clay (CL)</b> - red (10R 4/8) very damp, Low Plasticity, trace sand			
		<b>Silty Sand (SM)</b> - red (10R 4/8) with mica			
10		(PWR) - light brown (7.5YR 6/4) and white (10YR 8/1) feldspar layers, contains mica			
		<b>Silty Sand (SM)</b> - light brown (7.5YR 6/4) very micaceous, contains PWR			
20		<b>Silty Sand (SM)</b> - reddish brown (2.5YR 4/4) micaceous with PWR			
30		<b>Silty Sand (SM)</b> - yellowish brown / moderate yellowish brown (10YR 5/4) wet, perched water, some PWR streaks			
40		<b>Silty Sand (SM)</b> - dark red (10R 3/6) micaceous - wet			
		(PWR) - white (10YR 8/1) dry, feldspar			
		<b>Poorly-graded Sandy Gravel (SM)</b> - trace gravel - SM: yellowish brown / moderate yellowish brown (10YR 5/4) trace gravel - SM: pale yellow / grayish yellow (5Y 8/4) trace gravel			
50		(PWR) - saprolite			
60		Bottom of borehole at 56.5 feet.			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-26
LOGGER: Sellers/Gallagher	DRILLING METHODS:	
DATE CONSTRUCTED: 2-16-11		

N - 1237625.00, E - 2025790.42		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.04	785.60
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	782.56
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 45 Gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	42.00	740.56
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 3/4 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	44.00	738.56
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	46.20	736.36
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	56.20	726.36
	BOTTOM OF CASING	56.50	726.06
	Flush-threaded end cap		
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-27**  
PAGE 1 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/16/2011 COMPLETED 2/16/2011 SURF. ELEV. 811.38 COORDINATES: N - 1237829.15, E - 2025522.92

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotasonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 68 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/8/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.BPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION Weak Moderate Strong	COMMENTS
0		<b>Silty Sand (SM)</b> - red (10R 5/6) dry <b>(PWR)</b> - white (10YR 8/1)		
5		<b>Silty Sand (SM)</b> - red (10R 5/6)		
		<b>Clayey Sand (SC)</b> - red (10R 5/6)		
10		<b>Silty Sand (SM)</b> - red (10R 5/6) micaceous		
15		<b>(PWR)</b> - red (10R 5/6) saprolite 0.5" white layer at 16.5'		
20		<b>Silty Sand (SM)</b> - yellowish brown / moderate yellowish brown (10YR 5/4) micaceous with red streaks		
25		<b>(PWR)</b> - yellowish brown / moderate yellowish brown (10YR 5/4) saprolite trace gravel		
30		<b>(PWR)</b> - red (10R 5/6) saprolite damp		
35		<b>(PWR)</b> - yellowish brown / moderate yellowish brown (10YR 5/4) saprolite damp		
40				

(Continued Next Page)



# LOG OF TEST BORING

**BORING GWC-27**  
PAGE 2 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION Weak Moderate Strong	COMMENTS
		(PWR) (Con't)		
45		(PWR) - white (2.5Y 8/1) dry		
		(PWR) - yellowish brown / moderate yellowish brown (10YR 5/4) saprolite damp		
50		(PWR) - yellow (10YR 7/6) saprolite damp		
		(PWR) - yellowish brown / moderate yellowish brown (10YR 5/4) saprolite damp		
55				
60		(PWR) - yellowish brown / moderate yellowish brown (10YR 5/4) saprolite wet, with gravel		
65		GNEISS		
70		Bottom of borehole at 68.0 feet.		
75				
80				
85				

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-27
LOGGER: Sellers	DRILLING METHODS:	
DATE CONSTRUCTED: 2-16-11		

N - 1237829.15, E - 2025522.92		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	2.94	814.32
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	811.38
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 45 Gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	52.50	758.88
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	55.00	756.38
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	57.70	753.68
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	67.70	743.68
	BOTTOM OF CASING	68.00	743.38
	Flush-threaded end cap		
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWA-28**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 2/22/2011 COMPLETED 2/22/2011 SURF. ELEV. 846.16 COORDINATES: N - 1237995.74, E - 2025182.65

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 43 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED 19.4 ft. after 24 hrs.

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
5		<p><b>Silty Sand (SM)</b> - orange, damp, low plasticity, w/ gravel sized pieces of quartz - quartz is angular - sample is weathered from schist, some clay found (approximately 10%), micas weathering to white clay minerals</p> <p>- orange, slightly damp, orange grading down to white; fewer clay minerals (approximately 5%), sediment is less consolidated than 0' - 4' section. white material is highly weathered schist, relic cleavages and foliations can barely be discerned</p>					no quartz, orange grades to white. perched 8' - 10' H2O.
10		<p><b>Schist</b> - white, tan, has weathered to medium grained sands w/ less than 10% silt, wet</p> <p>- mottled tan, brown, weathered, coarse sand to gravel sized, poorly sorted and graded, gravel sized pieces are structurally intact schist. grades to more tan, sand and gravel sized regolith, preferential bands of more competent schist found (dark), dry</p>					tan. orange. white/grey.
15		<p>- banded tan, orange, white, weathered, coarse sand to gravel sized, white sediments contain larger fragments of schist, dry</p>					
20		<p><b>Silty Sand (SM)</b> - tan, wet, medium grain</p>					
22		<p><b>Poorly-graded Sand (SP)</b> - mottled white, tan, orange, dry, fine to medium grain, w/ angular, gravel sized schist fragments</p>					
25		<p><b>Silty Sand (SM)</b> - mottled tan, white, dry, clay particles present less than 2%, angular gravel to boulder sized fragments of schist</p>					
30		<p><b>Partially Weathered Rock</b> - brown, orange, saprolite (schist/gneiss contact), zoned</p>					
32		<p><b>Gneiss</b> - banded grey, white, competent, relic structures and foliations intact, sugary pegmatic quartz coating on cuttings, prevalent zones of oxidation suggesting fractures, fractures identified parallel to cleavage planes</p>					last 10' drilled w/ water.
35							
40							
45		Bottom of borehole at 43.0 feet.					<p><b>NOTE:</b> Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone. Well resurveyed in December 2020.</p>

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWA-28
LOGGER: Dyer	DRILLING METHODS:	
DATE CONSTRUCTED: 2-22-11		

N - 1237995.74, E - 2025182.65		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	2.83	849.16
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	846.33
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 50 Gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	29.00	817.33
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	31.00	815.33
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	32.70	813.63
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	42.70	803.63
	Flush-threaded end cap	BOTTOM OF CASING	43.00 803.33
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWA-29**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 6/21/2011 COMPLETED 6/26/2011 SURF. ELEV. 831.70 COORDINATES: N - 1238288.93, E - 2024984.27

CONTRACTOR SCS Field Services EQUIPMENT 550X METHOD 3 1/4" Hollow Stem Auger; HQ Casing; HQ Rock Core

DRILLED BY \_\_\_\_\_ LOGGED BY B. Gallagher/D. Brook CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 54.7 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED 39.8 ft. after 1 hrs.

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (ROD)	COMMENTS	
0 - 9.5		<b>Sandy Silt (ML)</b> - brown, damp					Auger Refusal at 9.5 ft.	
9.5 - 14.7		<b>Silty Sand (SM)</b> - tan, damp						
14.7 - 19.7		<b>Poorly-graded Sand (SP)</b> - tan and white, damp						
19.7 - 24.7		<b>Gneiss</b> - gray and pink, medium to fine grain, soft, highly weathered - quartz bands at 10.6 ft - stained joint at 11 ft - medium hard, slightly weathered, slightly stained below 11.5 ft - stained joint at 13.2 ft - stained joint at 13.7 ft - hard, slightly weathered, below 15.2 ft - 9 stained joints from 15.7 to 19.7 ft - hard, not weathered, below 19.7 ft - 3 partially healed, slightly stained joints from 20.9 to 24.6 ft - hard, slightly weathered, below 24.3 ft - soft to hard, highly to slightly weathered, with 11 weathered, stained joints from 24.7 to 26.5 ft - hard, slightly weathered, below 26.5 ft - slightly weathered, stained joints from 29.7 to 34.7	RC -1	9.5-14.7	WR-WR-WR (0)	96 (17)		
24.7 - 29.7			RC -2	14.7-19.7	WR-WR-WR (0)	100 (52)		
29.7 - 34.7			RC -3	19.7-24.7	WR-WR-WR (0)	100 (96)		
34.7 - 39.7			RC -4	24.7-29.7	WR-WR-WR (0)	100 (42)		
39.7 - 44.7			RC -5	29.7-34.7	WR-WR-WR (0)	100 (74)		
44.7 - 49.7			RC -6	34.7-39.7	WR-WR-WR (0)	100 (60)		
49.7 - 54.7			RC -7	39.7-44.7	WR-WR-WR (0)	100 (68)	Lost circulation at 39.5 ft. 50% return beginning at 40 ft. Lost circulation at 40.5 ft.	
			RC -8	44.7-49.7	WR-WR-WR (0)	90 (16)		
			RC -9	49.7-54.7	WR-WR-WR (0)			
		Bottom of borehole at 54.7 feet.						
							<p><b>NOTE:</b> Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone. Well resurveyed in December 2020.</p>	

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: SCS Field Services	WELL NAME  GWA-29
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: CME 550X	
LOGGER: Gallagher	DRILLING METHODS: Hollow Stem Auger	
DATE CONSTRUCTED: 6-27-11		

N - 1238288.93, E - 2024984.27		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	2.97	834.67
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	831.70
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 80 Gallons <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	36.00	795.70
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips AMOUNT: 1/4 bucket PLACEMENT: Tremie TOP OF FILTER PACK			
	TOP OF FILTER PACK	41.60	790.10
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN			
	BOTTOM OF RISER / TOP OF SCREEN	43.80	787.90
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN			
	BOTTOM OF SCREEN	53.80	777.90
Flush-threaded end cap	BOTTOM OF CASING	54.10	777.60
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-30**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/17/2011 COMPLETED 2/17/2011 SURF. ELEV. 788.46 COORDINATES: N - 1238565.49, E - 2025118.88

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 47 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION Weak Moderate Strong	COMMENTS
5		<b>Clayey Sand (SC)</b> - very pale brown / grayish orange (10YR 7/4) damp, fine to medium grained, with trace gravel		
10		<b>Clayey Sand (SC)</b> - light red / moderate reddish orange (10R 6/6) damp, fine to medium grained		
15		<b>SCHIST</b> - slightly weathered, crushed <b>SCHIST</b> - crushed		
20		<b>(PWR)</b> - brown (7.5YR 4/3) saprolite clayey and micaceous <b>(PWR)</b> - light yellowish brown (10YR 6/4) saprolite wet		
35		<b>Silty Sand (SM)</b> - very pale brown / grayish orange (10YR 7/4) wet		
40		<b>Silty Sand (SM)</b> - very pale brown / grayish orange (10YR 7/4) wet		
45				
50		Bottom of borehole at 47.0 feet.		

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-30
LOGGER: Sellers	DRILLING METHODS:	
DATE CONSTRUCTED: 2-17-11		

N - 1238565.49, E - 2025118.88		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	2.64	791.10
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	788.46
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 45 Gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	31.30	757.16
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	33.40	755.06
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	36.70	751.76
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	46.70	741.76
	BOTTOM OF CASING	47.00	741.46
	Flush-threaded end cap		
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-31**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 6/20/2011 COMPLETED 6/21/2011 SURF. ELEV. 793.57 COORDINATES: N - 1238701.92, E - 2025618.17

CONTRACTOR SCS Field Services EQUIPMENT 550X METHOD 3 1/4" Hollow Stem Auger; HQ Casing; HQ Rock Core

DRILLED BY \_\_\_\_\_ LOGGED BY B. Gallagher CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 34.2 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS	
0 - 4.7		<b>Silty Sand (SM)</b> - brown, damp, medium dense, fine grain						
4.7 - 5.9		<b>Sandy Silt (ML)</b> - tan, damp, medium dense						
5.9 - 4.7		<b>Gneiss</b> - pink and white, medium to fine grain, hard, slightly weathered, granitoid; with 7 stained slightly weathered joints from 4.7 to 7.4 ft. - 0.25" quartz vein at 5.9 ft. - 4 coated joints from 7.4 to 9.2 ft.	RC -1	4.7-9.2	WR-WR-WR (0)	96 (49)	Auger refusal at 4.7 ft.	
9.2 - 11.6		- stained, semi-vertical joint from 11.6 to 12.2 ft.	RC -2	9.2-14.2	WR-WR-WR (0)	100 (84)		
14.2 - 15.2		- pink and gray, no weathering below 14.2 ft - horizontal, slightly weathered joint at 14.8 ft - horizontal, slightly weathered joint at 15.2 ft	RC -3	14.2-19.2	WR-WR-WR (0)	100 (86)		
17.6 - 18.4		- sub-horizontal, slightly weathered joint at 17.6 ft - sub-horizontal, slightly weathered joint at 18.4 ft						
20 - 21.5		- slightly weathered, stained joint at 20 ft - slightly weathered with 0.1 ft quartz lens from 21 to 21.5 ft - healed joint at 22.2 ft.	RC -4	19.2-24.2	WR-WR-WR (0)	100 (90)		Lost Circulation at 21 ft.
23.9 - 25.4		- slightly weathered, stained joint at 23.9 ft						
25.4 - 27.2		- slightly weathered, stained joint at 25.4 ft - slightly weathered from 26.2 to 26.7 ft - slightly weathered, stained joint at 27.2 ft	RC -5	24.2-29.2	WR-WR-WR (0)	100 (88)		
30.3 - 31.9		- slightly weathered from 30.3 to 31.9 ft						
31.3 - 32.2		- slightly weathered, medium hard joint at 31.3 ft	RC -6	29.2-34.2	WR-WR-WR (0)	100 (76)		
32.2 - 34.2		- stained, near vertical joint from 32.2 to 32.5 ft.						
34.2 - 35		Bottom of borehole at 34.2 feet.						

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: SCS Field Services	WELL NAME  GWC-31
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: CME 550X	
LOGGER: Gallagher	DRILLING METHODS: Hollow Stem Auger	
DATE CONSTRUCTED: 6-21-11		

N - 1238701.92, E - 2025618.17		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.93	797.50
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	793.57
<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING			
<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: <b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded			
	TOP OF SEAL	13.00	780.57
<b>ANNULAR SEAL</b> TYPE: Bentonite Chips AMOUNT: 1/2 bucket PLACEMENT: Tremie TOP OF FILTER PACK			
	TOP OF FILTER PACK	18.00	775.57
<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 1.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN			
	BOTTOM OF RISER / TOP OF SCREEN	23.60	769.97
<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN			
	BOTTOM OF SCREEN	33.60	759.97
Flush-threaded end cap	BOTTOM OF CASING	34.10	759.47
HOLE DIA: 6"			

**NOTE:**  
 Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
 Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-32**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/18/2011 COMPLETED 2/18/2011 SURF. ELEV. 782.17 COORDINATES: N - 1238774.04, E - 2025876.12

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 30 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION <small>Weak Moderate Strong</small>	COMMENTS
		<b>Clayey Sand (SC)</b> - light red / moderate reddish orange (10R 6/6)		
5		<b>Clayey Sand (SC)</b> - weak red / pale reddish brown (10R 5/4) with weathered SCHIST gravel		
10		<b>Clayey Sand (SC)</b> - yellowish brown / moderate yellowish brown (10YR 5/4) damp		
		<b>Clayey Sand (SC)</b> - brown (7.5YR 4/2) damp		
15		<b>Silty Sand (SM)</b> - light gray (10YR 7/1) with large SCHIST gravel		
20		<b>SCHIST</b> - and gray (10YR 5/1) slightly weathered, heavy red stain		
25				
30		<b>GNEISS</b> - and gray (10YR 5/1)		
		Bottom of borehole at 30.0 feet.		
35				
40				

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-32
LOGGER: Sellers	DRILLING METHODS:	
DATE CONSTRUCTED: 2-18-11		

N - 1238774.04, E - 2025876.12		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.21	785.38
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	782.17
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 20 Gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	11.80	770.37
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	14.50	767.67
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	17.70	764.47
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	27.70	754.47
	BOTTOM OF CASING	28.00	754.17
	BOTTOM OF HOLE	30.00	752.17
	2ft of sand		

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.

HOLE DIA: 6"



# LOG OF TEST BORING

**BORING GWC-33**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/18/2011 COMPLETED 2/18/2011 SURF. ELEV. 757.02 COORDINATES: N - 1238818.01, E - 2026322.50

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY C. Sellers CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 21 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SIMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION Weak Moderate Strong	COMMENTS
		Lean Clay (CL) - red (10R 4/8)		
		Clayey Sand (SC) - light red / moderate reddish orange (10R 6/6)		
5		(PWR) - brown (7.5YR 5/4) and light red / moderate reddish orange (10R 6/6)		
10		(PWR) - white (10YR 8/1) weathered		
		(PWR) - red (10R 4/8) and brown (7.5YR 5/4) very damp, micaceous		
15		SCHIST		
		GNEISS		
20		Bottom of borehole at 21.0 feet.		
25				
30				
35				
40				

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-33
LOGGER: Sellers/Dyer	DRILLING METHODS:	
DATE CONSTRUCTED: 2-18-11		

N - 1238818.01, E - 2026322.50		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	3.03	760.05
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	757.02
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: To Surface		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	6.70	750.32
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	8.70	748.32
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 3.5 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	10.70	746.32
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	20.70	736.32
	Flush-threaded end cap	BOTTOM OF CASING	21.00 736.02
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-34**  
PAGE 1 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DATE STARTED 2/21/2011 COMPLETED 2/21/2011 SURF. ELEV. 732.49 COORDINATES: N - 1238558.69, E - 2026569.25

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 56 ft (well at 48 ft) GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED 0.5 ft. after 18 hrs.

NOTES Well installed. Refer to well data sheet.

GEO TECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (ROD)	COMMENTS
..... ..... ..... 5		- lost sample to 8'					
..... ..... 10		<b>Silty Sand (SM)</b> - orange, tan, black, wet, fine grain, w/ cobble to boulder sized pieces of quartz and highly weathered schist - tan, white, very moist, coarse grain, appears to be highly weathered granitic gneiss, some clay material					water 8.5' - 15'.  stark color contrast.
..... ..... 15		<b>Clayey Silty Sand (SC-SM)</b> - orange, tan, damp, less than 10% clay					
..... ..... 20		<b>Partially Weathered Rock</b> - brown, tan, saprolite; moderately consolidated, prevalent mica, and some relic structure - grades to less consolidated and more sand (micaceous) - tan, brown, schist parent rock; brown to black mica streaks; relic structures; medium well consolidated, damp low strength, weathering to fine sand - tan, orange, mod, well consolidated, damp, some relic structures preserved					
..... ..... 25		- tan, brown, highly weathered, highly weathered to sand and silt, some relic structures, damp; grades to more orange and tan also more highly weathered					
..... ..... 30		<b>Silty Sand (SM)</b> - tan, very damp, fairly well consolidated, well sorted					crator?.
..... ..... 35		<b>Partially Weathered Rock</b> - brown, tan, black, saprolite; schist moderately weathered, some competency, weathering to fine sand, very micaceous, slightly damp - mottled brown, black, tan, not competent, moist, weathered to sand and gravel sized schist? mica flakes dry (70% sand, 30% gravel)					
..... ..... 40		<b>Poorly-graded Sand (SP)</b> - light grey, white, very dry, gravel sized schist, gravels are elongate and angular (very competent)					
..... ..... 45		<b>Granite</b> - grey, consolidated, relic structures intact, lacks oxide staining, quartz veining					
..... ..... 50		- grey, consolidated, relic structures, lacks oxidation, quartz veining					

(Continued Next Page)



# LOG OF TEST BORING

**BORING GWC-34**  
PAGE 2 OF 2

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley

LOCATION Carrollton, Georgia

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
55		Granite (cont)					
Bottom of borehole at 56.0 feet.							
60							
65							
70							
75							
80							
85							
90							
95							
100							
105							

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 11/9/11 15:48 - T:\ESEE MAJOR PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.: Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:	
LOCATION: Plant Wansley	RIG TYPE: Roto Sonic	GWC-34
LOGGER: Dyer	DRILLING METHODS:	
DATE CONSTRUCTED: 2-21-11		

N - 1238558.69, E - 2026569.25		DEPTH FEET	ELEVATION FT NAVD
Locking Hinged Top	TOP OF RISER	2.91	735.40
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	732.49
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 30 Gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	33.00	699.49
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1/2 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	35.00	697.49
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	37.50	694.99
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	47.50	684.99
	BOTTOM OF CASING	48.00	684.49
	Flush-threaded end cap		
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.



# LOG OF TEST BORING

**BORING GWC-35**  
PAGE 1 OF 1

SOUTHERN COMPANY SERVICES, INC.  
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Wansley  
LOCATION Carrollton, Georgia

DATE STARTED 2/7/2011 COMPLETED 2/7/2011 SURF. ELEV. 728.11 COORDINATES: N - 1238243.50, E - 2026822.29

CONTRACTOR Boart Longyear EQUIPMENT \_\_\_\_\_ METHOD Rotosonic

DRILLED BY \_\_\_\_\_ LOGGED BY G. Dyer/ D. Brooks CHECKED BY \_\_\_\_\_ ANGLE \_\_\_\_\_ BEARING \_\_\_\_\_

BORING DEPTH 38 ft. GROUND WATER DEPTH: DURING \_\_\_\_\_ COMP. \_\_\_\_\_ DELAYED \_\_\_\_\_

NOTES Well installed. Refer to well data sheet.

SAMPLE GEOLOGY LOG - ESEE DATABASE.GDT - 11/9/11 15:55 - T:\ESEE MAJOR PROJECTS\PROJECTS\WANSLEY\WANSLEY 2011\PLANT WANSLEY WELL LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	HCL REACTION <small>Weak Moderate Strong</small>	COMMENTS
		<b>Clayey Sand (SC)</b> - black (10YR 2/1) moist, very fine to fine grained		
5		<b>Clayey Sand (SC)</b> - light red / moderate reddish orange (10R 6/6) wet, medium plasticity, very fine grained sand		
10		<b>Silty Sand (SM)</b> - pale brown (10YR 6/3) saprolite some relic structures 10'-12' - SM: brown (7.5YR 4/3) saprolite 12'-15'		
15		- SM: brown (7.5YR 4/3) SAA except micaceous		
20		<b>Poorly-graded Gravel with Clay (GP-GC)</b> - dusky red / dark reddish brown (10R 3/4) fine grained sand with quartz gravel		
25		<b>(PWR)</b> - brown (7.5YR 4/3) saprolite SAND, silty and micaceous		
30		<b>Clayey Sand (SC)</b> - brown (7.5YR 4/3) micaceous with large quartz pebbles		
35		<b>(PWR)</b> - dark gray (10YR 4/1) saprolite wet, SAND, silty, clayey with highly weathered GNEISS		
		<b>GNEISS</b>		
		Bottom of borehole at 38.0 feet.		
40				

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD).  
Coordinates are in North American Datum of 1983 (NAD83)  
Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**WELL CONSTRUCTION LOG**

Southern Company Generation

PROJECT: Coal Combustion By-Product	DRILLING CO.:	Boart Longyear	WELL NAME
Private Industry Solid Waste Disposal Facility	DRILLER:		
LOCATION: Plant Wansley	RIG TYPE:	Roto Sonic	GWC-35
LOGGER: Brooks/Dyer	DRILLING METHODS:		
DATE CONSTRUCTED: 2-8-11			

N - 1238243.50, E - 2026822.29		DEPTH	ELEVATION
		FEET	FT NAVD
Locking Hinged Top	TOP OF RISER	2.53	730.64
1/4-inch Vent	2" Threaded Riser Cap		
1/4-inch Weep Hole			
4-ft x 4-ft concrete pad	GROUND SURFACE	0.00	728.11
	<b>PROTECTIVE CASING</b> SIZE: 4x4-inch TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	<b>BACKFILL MATERIAL</b> TYPE: Portland Cement Grout AMOUNT: 30 Gallons		
	<b>RISER CASING</b> DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
	TOP OF SEAL	22.50	705.61
	<b>ANNULAR SEAL</b> TYPE: Bentonite Chips 50 lbs bags AMOUNT: 1 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	25.00	703.11
	<b>FILTER PACK</b> TYPE: F - 1A (20/30) Drillers Services, Inc. AMOUNT: 4 bags; 50 lbs/bag PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	27.70	700.41
	<b>SCREEN</b> DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 1/8" SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	37.70	690.41
Flush-threaded end cap	BOTTOM OF CASING	38.00	690.11
HOLE DIA: 6"			

**NOTE:**  
Elevation in feet North American Vertical Datum of 1988 (NAVD). Coordinates are in North American Datum of 1983 (NAD83) Georgia State Plane East Zone.  
Well resurveyed in December 2020.

**ATTACHMENT A2: WELL DRILLING CONTRACTOR PROOF OF BONDING**



**SAFECO Insurance Company of America**

, Surety upon

a certain Bond No. **4993104**

dated effective **June 30, 2005**  
(MONTH-DAY-YEAR)

on behalf of **Southern Company Services, Inc.**  
(PRINCIPAL)

and in favor of **State of Georgia - Dept. of Natural Resources**  
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on **June 30, 2010**  
(MONTH-DAY-YEAR)

and ending on **June 30, 2011**  
(MONTH-DAY-YEAR)

Amount of bond **\$10,000.00**

Description of bond **License Bond - Water Well Contractors & Drillers**

Premium: **\$100.00**

**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 **April 15, 2010**  
(MONTH-DAY-YEAR)

**SAFECO Insurance Company of America**

By 

**Barbara S. MacArthur, Attorney-In-Fact**

POWER OF ATTORNEY

No. 6724

KNOW ALL BY THESE PRESENTS:

That SAFECO INSURANCE COMPANY OF AMERICA and GENERAL INSURANCE COMPANY OF AMERICA, each a Washington corporation, does each hereby appoint

\*\*\*\*\*GARY D. EKLUND; BARBARA S. MACARTHUR; VIRGINIA B. MCMANUS; CHAUN M. WILSON; MICHAEL F. YADACH; Atlanta, Georgia\*\*\*\*\*

its true and lawful attorney(s)-in-fact, with full authority to execute on its behalf fidelity and surety bonds or undertakings and other documents of a similar character issued in the course of its business, and to bind the respective company thereby.

IN WITNESS WHEREOF, SAFECO INSURANCE COMPANY OF AMERICA and GENERAL INSURANCE COMPANY OF AMERICA have each executed and attested these presents

this 2nd day of February 2010

Dexter R. Legg

TAMIKOLAJEWSKI

Dexter R. Legg, Secretary

Timothy A. Mikolajewski, Vice President

CERTIFICATE

Extract from the By-Laws of SAFECO INSURANCE COMPANY OF AMERICA and of GENERAL INSURANCE COMPANY OF AMERICA:

"Article V, Section 13. - FIDELITY AND SURETY BONDS ... the President, any Vice President, the Secretary, and any Assistant Vice President appointed for that purpose by the officer in charge of surety operations, shall each have authority to appoint individuals as attorneys-in-fact or under other appropriate titles with authority to execute on behalf of the company fidelity and surety bonds and other documents of similar character issued by the company in the course of its business... On any instrument making or evidencing such appointment, the signatures may be affixed by facsimile. On any instrument conferring such authority or on any bond or undertaking of the company, the seal, or a facsimile thereof, may be impressed or affixed or in any other manner reproduced; provided, however, that the seal shall not be necessary to the validity of any such instrument or undertaking."

Extract from a Resolution of the Board of Directors of SAFECO INSURANCE COMPANY OF AMERICA and of GENERAL INSURANCE COMPANY OF AMERICA adopted July 28, 1970.

"On any certificate executed by the Secretary or an assistant secretary of the Company setting out,

- (i) The provisions of Article V, Section 13 of the By-Laws, and
(ii) A copy of the power-of-attorney appointment, executed pursuant thereto, and
(iii) Certifying that said power-of-attorney appointment is in full force and effect,

the signature of the certifying officer may be by facsimile, and the seal of the Company may be a facsimile thereof."

I, Dexter R. Legg, Secretary of SAFECO INSURANCE COMPANY OF AMERICA and of GENERAL INSURANCE COMPANY OF AMERICA, do hereby certify that the foregoing extracts of the By-Laws and of a Resolution of the Board of Directors of these corporations, and of a Power of Attorney issued pursuant thereto, are true and correct, and that both the By-Laws, the Resolution and the Power of Attorney are still in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the facsimile seal of said corporation

this 15th day of April 2010



Dexter R. Legg

Dexter R. Legg, Secretary

Southern Company Services, Inc.  
30 Ivan Allen Jr. Boulevard NW  
Atlanta, Georgia 30308



May 2, 2011

Mr. Tony McCook  
Georgia Geologic Survey  
19 Martin Luther King Jr. Dr. SW  
Room 400  
Atlanta, GA 30334

Re: Performance Bond for Water Well Contractors and Drillers  
Safeco Bond #4993104

Attached is the original signed Continuation Certificate for the above referenced bond on behalf of Southern Company Services, Inc. This certificate keeps this bond in force until June 30, 2012.

Please let us know if you need additional information.

Sincerely,

A handwritten signature in cursive script that reads "Clementine Broaders".

Clementine Broaders  
Southern Company Services, Inc.  
Risk Management Department

/cb

Enclosure

cc: Stacy Sprayberry, SCS



SAFECO Insurance Company of America

, Surety upon

a certain Bond No. **4993104**

dated effective **June 30, 2005**  
(MONTH-DAY-YEAR)

on behalf of **Southern Company Services, Inc.**  
(PRINCIPAL)

and in favor of **State of Georgia - Dept. of Natural Resources**  
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on **June 30, 2011**  
(MONTH-DAY-YEAR)

and ending on **June 30, 2012**  
(MONTH-DAY-YEAR)

Amount of bond **\$10,000.00**

Description of bond **License Bond - Water Well Contractors & Drillers**

Premium: **\$100.00**

**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 **April 21, 2011**  
(MONTH-DAY-YEAR)

SAFECO Insurance Company of America

By *Barbara S. MacArthur*  
**Barbara S. MacArthur, Attorney-In-Fact**

COPY

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.

**SAFECO INSURANCE COMPANY OF AMERICA  
SEATTLE, WASHINGTON  
POWER OF ATTORNEY**

KNOW ALL PERSONS BY THESE PRESENTS: That Safeco Insurance Company of America (the "Company"), a Washington stock insurance company, pursuant to and by authority of the By-law and Authorization hereinafter set forth, does hereby name, constitute and appoint **VIRGINIA B. MCMANUS, GARY D. EKLUND, BARBARA S. MACARTHUR, CHAUN M. WILSON, MICHAEL F. YADACH, ALL OF THE CITY OF ATLANTA, STATE OF GEORGIA**.....

, 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 the penal sum not exceeding **ONE HUNDRED MILLION AND 00/100\*\*\*\* \*\*\*\*\* DOLLARS (\$ 100,000,000.00\*\*\*\*\* \*\*\*\*\*)** each, and the execution of such undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the president and attested by the secretary of the Company in their own proper persons.

That this power is made and executed pursuant to and by authority of the following By-law and Authorization:

**ARTICLE IV - Execution of Contracts: Section 12. Surety Bonds and Undertakings.**

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitations 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 by the secretary.

By the following instrument the chairman or the president has authorized the officer or other official named therein to appoint attorneys-in-fact:

Pursuant to Article IV, Section 12 of the By-laws, Garnet W. Elliott, Assistant Secretary of Safeco Insurance Company of America, is authorized to 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.

That the By-law and the Authorization set forth above are true copies thereof and are now in full force and effect.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Safeco Insurance Company of America has been affixed thereto in Plymouth Meeting, Pennsylvania this 14th day of October, 2010.



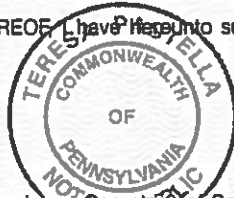
**SAFECO INSURANCE COMPANY OF AMERICA**

By Garnet W. Elliott  
Garnet W. Elliott, Assistant Secretary

COMMONWEALTH OF PENNSYLVANIA ss  
COUNTY OF MONTGOMERY

On this 14th day of October, 2010, before me, a Notary Public, personally came Garnet W. Elliott, to me known, and acknowledged that he is an Assistant Secretary of Safeco Insurance Company of America; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Safeco Insurance Company of America thereto with the authority and at the direction of said corporation.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



Notarial Seal  
Teresa Pastella, Notary Public  
Plymouth Twp., Montgomery County  
My Commission Expires Mar. 28, 2013  
Member, Pennsylvania Association of Notaries

By Teresa Pastella  
Teresa Pastella, Notary Public

**CERTIFICATE**

I, the undersigned, Assistant Secretary of 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, is in full force and effect on the date of this certificate; and I do further certify that the officer or official who executed the said power of attorney is an Assistant Secretary specially authorized by the chairman or the president to appoint attorneys-in-fact as provided in Article IV, Section 12 of the By-laws of Safeco Insurance Company of America.

This certificate and the above power of attorney may be signed by facsimile or mechanically reproduced signatures under and by authority of the following vote of the board of directors of Safeco Insurance Company of America at a meeting duly called and held on the 18th day of September, 2009.

VOTED that the 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.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the said company, this 21st day of April, 2011.



By David M. Carey  
David M. Carey, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, bank deposit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.


## **ATTACHMENT A3: SURVEYOR'S CERTIFICATION**

---

DATE: December 3-10, 2020

REQUESTED BY: Kristen Jurinko

LOCATION: Plant Wansley  
Franklin, GA




**Southern Company**  
T&PS CIVIL FIELD SERVICES  
SURVEY & MAPPING

WELL	NAIL NORTHING	NAIL EASTING	NAIL LATITUDE DEC. DEG.	NAIL LONGITUDE DEC. DEG.	NAIL ELEVATION	CASING NORTHING	CASING EASTING	CASING (KERF) ELEVATION	GROUND ELEVATION
GWA 1	1236940.49	2027869.31	33.3974179	-85.0471283	775.22	1236939.09	2027869.61	778.02	774.93
GWA 2	1237147.60	2027481.39	33.3979780	-85.0484050	813.36	1237146.23	2027481.93	816.16	813.07
GWA 3	1237240.36	2027158.40	33.3982254	-85.0494658	787.56	1237239.46	2027159.37	790.64	787.27
GWA 4	1237254.83	2026747.92	33.3982556	-85.0508110	776.80	1237253.84	2026749.02	779.54	776.51
GWC 5	1237692.42	2026716.41	33.3994574	-85.0509264	753.37	1237691.25	2026715.49	755.91	753.08
GWC 6	1237924.67	2027012.89	33.4001026	-85.0499615	747.15	1237923.26	2027012.57	749.98	746.86
GWC 7	1238261.86	2027268.99	33.4010352	-85.0491318	728.42	1238262.28	2027267.53	731.15	728.13
GWC 8	1238501.55	2027640.45	33.4017025	-85.0479215	720.64	1238500.95	2027639.02	723.46	720.35
GWC 9	1238673.12	2027891.35	33.4021798	-85.0471042	710.00	1238673.29	2027890.01	712.65	709.71
GWC 10	1238950.81	2028309.04	33.4029527	-85.0457433	706.13	1238950.84	2028307.55	709.41	705.84
GWC 11	1238930.02	2028592.08	33.4029021	-85.0448154	698.18	1238931.36	2028591.42	701.05	697.89
GWC 12	1238738.52	2028921.56	33.4023835	-85.0437306	721.31	1238739.92	2028921.04	724.06	721.02
GWC 13	1238622.44	2029289.86	33.4020730	-85.0425207	691.41	1238623.64	2029288.99	694.08	691.12
GWC 14	1238428.07	2029551.52	33.4015449	-85.0416580	688.88	1238429.69	2029551.53	692.63	688.59
GWC 15	1238163.93	2029814.36	33.4008251	-85.0407896	684.67	1238164.50	2029813.08	687.44	684.38
GWC 16	1237809.03	2029989.71	33.3998538	-85.0402053	687.42	1237810.57	2029990.04	690.32	687.13
GWC 17	1237469.64	2029801.29	33.3989168	-85.0408133	701.94	1237469.49	2029802.77	704.55	701.65
GWC 18	1237097.77	2029691.53	33.3978924	-85.0411626	697.71	1237098.50	2029692.94	700.31	697.42
GWC 19	1236841.16	2029323.11	33.3971787	-85.0423626	694.83	1236840.20	2029324.43	698.47	694.54
GWC 20	1236645.57	2029149.57	33.3966371	-85.0429258	703.62	1236646.30	2029150.80	706.29	703.33
GWC 21	1236230.06	2028634.08	33.3954833	-85.0446031	717.61	1236231.26	2028634.91	721.02	717.32
GWC 22	1236396.22	2028325.64	33.3959328	-85.0456182	741.33	1236394.53	2028325.67	744.17	741.04
GWC 23	1236657.67	2028089.81	33.3966458	-85.0463981	770.75	1236656.05	2028089.81	773.41	770.46
GWC 24	1237355.54	2026407.92	33.3985244	-85.0519278	787.77	1237354.41	2026408.90	790.37	787.48
GWC 25	1237404.61	2026089.46	33.3986518	-85.0529725	809.66	1237403.18	2026090.13	812.36	809.37
GWC 26	1237625.00	2025790.42	33.3992505	-85.0539584	782.85	1237623.24	2025790.83	785.60	782.56
GWC 27	1237829.15	2025522.92	33.3998052	-85.0548405	811.67	1237827.67	2025523.40	814.32	811.38
GWA 28	1237995.74	2025182.65	33.4002551	-85.0559600	846.62	1237994.26	2025183.21	849.16	846.33
GWA 29	1238288.93	2024984.27	33.4010561	-85.0566182	831.99	1238288.80	2024982.84	834.67	831.70
GWC 30	1238565.49	2025118.88	33.4018193	-85.0561849	788.75	1238566.13	2025117.62	791.10	788.46
GWC 31	1238701.92	2025618.17	33.4022059	-85.0545528	793.86	1238700.65	2025617.57	797.50	793.57
GWC 32	1238774.04	2025876.12	33.4024102	-85.0537097	782.46	1238775.13	2025874.97	785.38	782.17
GWC 33	1238818.01	2026322.50	33.4025414	-85.0522484	757.31	1238819.23	2026321.58	760.05	757.02
GWC 34	1238558.69	2026569.25	33.4018346	-85.0514327	732.78	1238559.24	2026570.02	735.40	732.49
GWC 35	1238243.50	2026822.29	33.4009743	-85.0505949	728.40	1238244.47	2026822.29	730.64	728.11

NOTES:

- 1) Georgia West NAD 1983 Horizontal Datum, NAVD 1988 Vertical Datum
- 2) Survey was performed using Leica GS 14 RTK GPS, Leica Sprinter 150
- 3) Reference Monument - TP2 Elevation 773.243'



I,  a Professional Land Surveyor in the State of Georgia do hereby certify that the horizontal position and vertical elevation values given for the control point nail at the base of the well & PVC casing have been performed under my direct supervision with positional tolerance of 0.5' horizontal and 0.01' vertical. Elevation of surveyed point was established based upon a level loop from stated reference monument.



Plant Wansley Carroll County, Georgia						
Monitoring Well Survey						
Well ID	Casing	Casing	Top of Casing	Nail or Pad	Nail or Pad	Nail or Pad
	Northing	Easting	Elevation	Northing	Easting	Elevation
GWC-10	1238950.930	2028307.546	709.440	1238949.941	2028308.436	706.288
WGWC-8A	1243131.876	2029522.990	806.596	1243131.342	2029523.921	803.721

Existing well GWC-11 pk nail (elevation 698.18) was used to establish the elevations for Well GWC-10

Existing well WGWC-38S pk nail (elevation 806.323) was used to establish the elevations for Well WGWC-8A

All coordinates are based upon Georgia State Plane, West Zone. Elevations are referenced to NAVD 1988 datum. Control used to perform work set by Thompson in 2021 by running static sessions and submitting to OPUS for coordinates and elevations. Equipment used for horizontal positions: Trimble R12 RTK GPS. Elevations for each point was established by running closed level loops with Trimble DINI Level.



10/31/2025

Johnny E. Holley

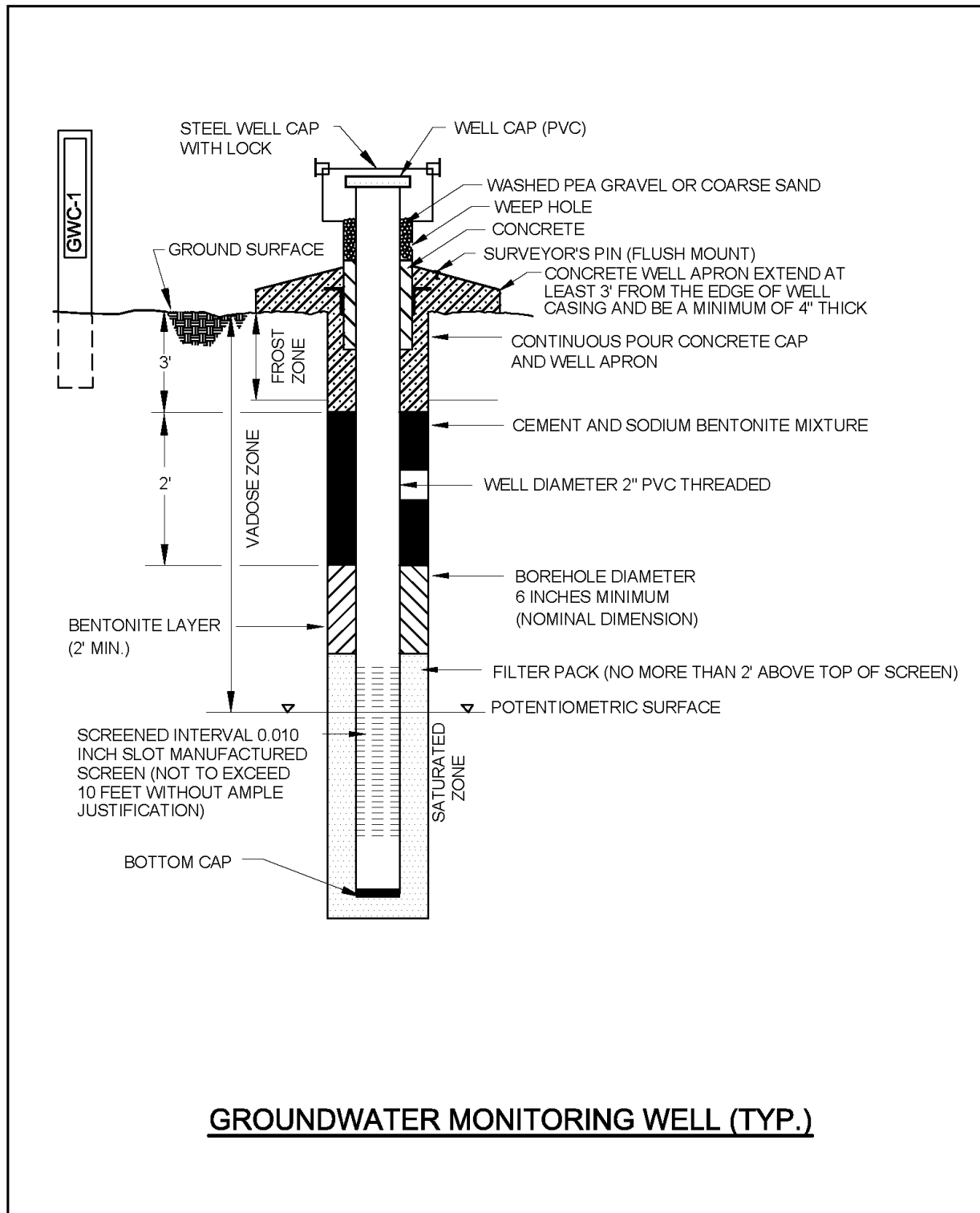
date

Georgia Registration Number LS003550

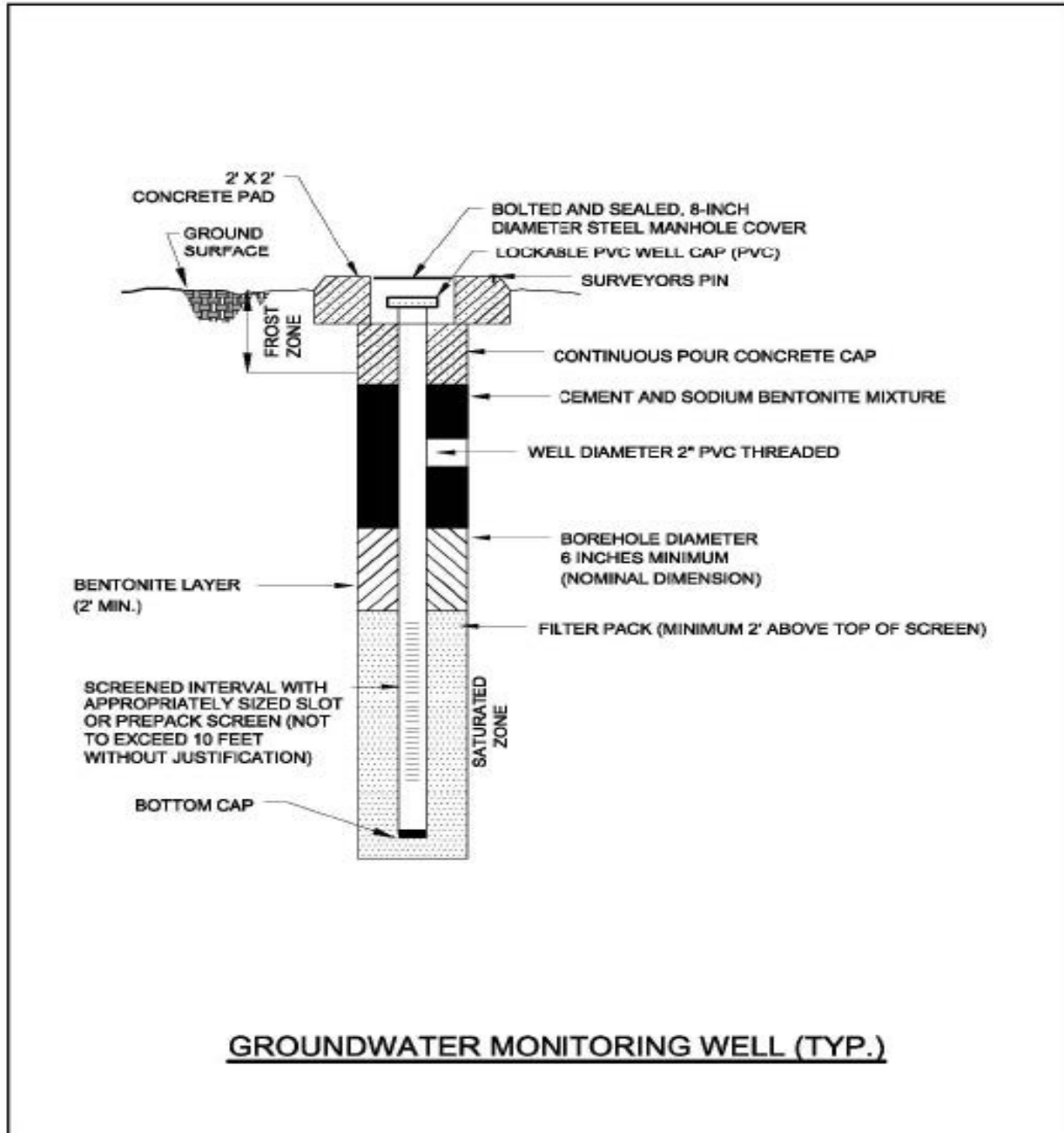
Thompson Engineering Certificate of Authorization LSF-1151



## B. GROUNDWATER MONITORING WELL DETAILS



## B2. GROUNDWATER MONITORING WELL DETAIL FLUSH-MOUNT SURFACE COMPLETION



## C. GROUNDWATER SAMPLING PROCEDURE

---

Groundwater sampling will be conducted using most current USEPA Region 4 operating 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.

Georgia Power 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 Georgia Power 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 using a water measuring device consisting of probe and measuring tape capable of measuring water levels with accuracy to 0.01 foot. 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.
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. All 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 USEPA Laboratory Services and Applied Science Division (LSASD), Operating Procedure, *Field Equipment Cleaning and Decontamination* (LSASDPROC-205-R4) 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.
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:
  - a.  $\pm 0.1$  for pH
  - b.  $\pm 5\%$  for specific conductance (conductivity)

- c.  $\pm 10\%$  or 0.2 mg/L (whichever is greater) for DO where  $DO > 0.5 \text{ mg/L}$ . If  $DO < 0.5 \text{ mg/L}$  no stabilization criteria apply
  - d.  $\leq 5$  NTU for turbidity
  - e. Temperature – Record only, not used for stabilization criteria
  - f. ORP – Record only, not used for stabilization criteria.
7. Collect samples at a low flow rate according to the most current version of USEPA LSASDPROC-301-R6, 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. All 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 (i.e.,  $> 10$  NTU), 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. A new filter must be used for each well and each sampling event. Filtered samples are not considered compliance samples and are only used to evaluate the effects of turbidity. Additional details related to managing for elevated turbidity is discussed below.
9. All 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 all non-dedicated equipment. Upon completion of all activity the well will be closed and locked.

13. Samples will be delivered to the laboratory following appropriate COC and temperature control requirements. The goal for sample delivery will be within 48 hours of collection.

Throughout the sampling process new latex or 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 NTU; however, samples may be collected where turbidity is less than 10 NTU and the stabilization criteria described above are met.

If sample turbidity is greater than 5 NTU and all other stabilization criteria have been met, samplers will continue purging for 3 additional hours in order to reduce the turbidity to 5 NTU or less.

- If turbidity remains above 5 NTU but is less than 10 NTU, and all other parameters are stabilized, the well can be sampled.
- Where turbidity remains above 10 NTU, 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.

A brief overview of purging and sampling methodologies, including the type of sampling equipment used will be provided in routine monitoring reports.

## D. SURFACE WATER & UNDERDRAIN SAMPLING AND ANALYSIS PROCEDURES

---

Surface water and underdrain samples will be collected in accordance with the general procedures outlined below. These procedures were developed using field sampling guidelines described in the USEPA Region 4 Laboratory Services & Applied Science Division Operating Procedure Surface Water Sampling (LSASDPROC-201-R6) and updates (<https://www.epa.gov/quality/quality-system-and-technical-procedures-sesd-field-branches>). Surface water and underdrain samples will be analyzed for the parameters contained in Table 2.

Surface water and underdrain samples will be monitored for the same parameters and at the same frequency as groundwater. Surface water and underdrain samples will be analyzed for the same parameters using the same analytical methods as the groundwater samples listed in Table 2 of this plan. Samples will be collected from flowing water and not from ponded water that collects on the ground surface. If a dipper or other transfer vessel other than the sample container is used, it must be composed of a non-porous inert material such as glass, PVC, polyethylene, or stainless steel. The following procedures will be used to collect surface water and underdrain samples:

- a. Hold the bottle near the base with one hand, and with the other, remove the cap.
- b. Rinse the sample container with the water to be sampled prior to filling the container, unless the sample containers are pre-preserved. Pre-preserved sample containers should not be rinsed prior to sampling.
- c. Hold the container within the stream flow or underneath the outfall and allow the container to be filled with water. Remove the container from underneath the flow or the outfall and place the cap back on the container.
- d. Label the sample container to, at a minimum, include: Sample Number, Name of Collector, Date and Time of Collection, and Place/Point of Collection.
- e. Place the samples in a cooler containing water-ice, if required, for courier or hand delivery to the laboratory within the sample hold times.
- f. Follow COC and temperature protocols outlined within this plan.

The minimum sampling frequency for surface water will be semiannual.