GROUNDWATER MONITORING PLAN

PLANT SCHERER COAL COMBUSTION RESIDUALS CCR LANDFILL MONROE COUNTY, GEORGIA

FOR



NOVEMBER 2018



Table of Contents

CER	TIFICA	TION	iv
1.0	INTRO	DDUCTION	5
2.0	GEOL	OGIC AND HYDROGEOLOGIC CONDITIONS	5
	2.1	Site Geology	5
	2.2	Site Hydrogeology	6
	2.3	Uppermost Aquifer	6
3.0	SELE	CTION OF WELL LOCATIONS	7
4.0	MONI	TORING WELL DRILLING, CONSTRUCTION, ABANDONMENT & REPORTING	7
	4.1	Drilling	7
	4.2	Design and Construction	8
	4.2.1	Well Casings and Screens	8
	4.2.2	Well Intake Design	8
	4.2.3	Filter Pack and Annular Seal	9
	4.2.4	Protective Casing and Well Completion	9
	4.2.5	Well Development	9
	4.3	Well Abandonment	10
	4.4	Documentation	10
5.0	GROU	INDWATER MONITORING PARAMETERS AND FREQUENCY	11
6.0	SAMP	LE COLLECTION	14
7.0	CHAI	N-OF-CUSTODY	14
8.0	FIELD	AND LABORATORY QUALITY ASSURANCE/QUALITY CONTROL	15
9.0	REPO	RTING RESULTS	15
10.0	STAT	ISTICAL ANALYSES	16
11.0	REFE	RNCES	21



Table of Contents (continued)

TABLES

Table 1: GROUNDWATER MONITORING PARAMETERS & FREQUENCY	12
Table 2: ANALYTICAL METHODS	13
FIGURES	
Figure 1: STATISTICAL PLAN OVERVIEW	18
Figure 2: DECISION LOGIC FOR DETERMINING APPROPRIATE STATISTICAL METHOD	19
Figure 3: DECISION LOGIC FOR COMPUTING PREDICTION LIMITS	20

APPENDICES

APPENDIX A MONITORING SYTEM DETAILS

A1	MONIT	UDINIC NIE	TWORK WEL	
~ ı	IVICTIVIT		I VV CJERV VV EL	LUEIAILO

A2 CELL 1 MONITORING WELL LOGS

A3 PAC ASH CELL MONITORING WELL LOGS

APPENDIX B GROUNDWATER MONITORING WELL DETAIL

APPENDIX C GROUNDWATER SAMPLING PROCEDURES

APPENDIX D SURFACE WATER SAMPLING PROCEDURES



CERTIFICATION

This Groundwater Monitoring Plan, Georgia Power Company - Plant Scherer Coal Combustion Residuals (CCR) Landfill has been prepared to meet the requirements of the Georgia Solid Waste Management Rule by a qualified groundwater scientist or engineer with Golder Associates Inc. References to the appropriate 391-3-4 Rules are incorporated throughout this document.

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

Golder Associates Inc.



Rachel P. Kirkman, PG Registered Professional Geologist No. 1756 11/1/2018

Date



W. Randall Sullivan, PE, PE

Georgia Registered Professional Engineer No. 13030

11/1/2018

Date

Golder and the G logo are trademarks of Golder Associates Corporation

https://golderassociates.sharepoint.com/sites/24912g/project files/200 reports/groundwater monitoring plan/landfill/scherer If groundwater monitoring plan_final 11.2018.docx



1.0 INTRODUCTION

Groundwater monitoring is required by the Georgia Environmental Protection Division (EPD) to detect and quantify potential changes in groundwater chemistry. This Groundwater Monitoring Plan (plan) describes the groundwater monitoring program for the site. This plan meets the requirements of EPD rules and uses EPD's Manual for Ground Water Monitoring dated September 1991 as a guide. Groundwater sampling locations are presented on Sheet H1C11029 (Cell 1) and Sheet H1C11030(PAC Ash Cell) of the *Design & Operations Plan for Georgia Power Company's*, *Plant Scherer CCB Disposal Facility*, prepared by Southern Company Generation Engineering and Construction Services, February 26, 2010.

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 precedence.

In accordance with the United States Environmental Protection Agency (USEPA) Coal Combustion Rule (§257.90), a detection monitoring well network for AP-1 has been installed and certified by a qualified professional engineer. This certification has been placed in the facility's operating record and is included in Part B of the permit application. 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

As required by 391-3-4.10(6)(g), a minor modification will be submitted to the EPD prior to the installation or decommissioning of monitoring wells. Well installation must be directed by a professional engineer or geologist licensed to practice in Georgia.

2.0 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

Geologic and hydrogeologic conditions for this site are described in a report, Geologic and Hydrogeologic Summary Report, prepared by Golder Associates Inc., November 2018. Key elements of this report are summarized below.

2.1 Site Geology

The site is located within the Southern Piedmont Physiographic province and is underlain by regolith consisting of residual soils and saprolite overlying fractured, crystalline bedrock. The regolith thickness ranges from approximately 3 to 30-feet below land surface. Bedrock at the site consists of interlayered feldspathic biotite gneiss with discontinuous layers and lenses of chlorite/actinolite schist and feldspathic hornblende gneiss/amphibolite. Large, discontinuous lenses or pods of mafic bodies were locally observed to be interlayered with the gneiss near the central and eastern portions of the site. A porphyritic, hornblende-biotite-feldspar diorite sill intrudes the biotite gneiss downstream of the ash pond along Berry Creek, and a diabase dike was observed north of the ash pond. Similar to the gabbro bodies, the diorite and diabase intrusives are resistant to weathering, standing out in relief relative to the surrounding differentially-weathered biotite gneiss. The biotite gneiss in the western portion of the property has been intruded by a large, discontinuous lens of unfoliated feldspathic granite which occurs as a series of isolated pavement outcrops.



The metamorphic and igneous rocks that underly the area have been subjected to physical and chemical weathering which has created a landscape dissected by creeks and streams forming a dendritic drainage pattern. These rocks are deeply weathered due to the humid climate and bedrock is typically overlain by a variably thick blanket of residual soils and saprolite. Because of such variations in rock types and structure, the depth of weathering can vary significantly over short horizontal distances. Based on boring logs, residual soils, primarily sandy silt, silty sand, sandy clay and silty clay, occur as a variably-thick blanket overlying bedrock across most of the site. The thickness of the residual soil encountered in the borings is variable, ranging from a minimum of approximately 17 feet to as much as 168 feet, with an average residual soil thickness of about 57 feet. Thickness of saprolitic soils and/or saprolitic rock range in thickness across the site but were generally encountered at or near ground surface.

2.2 Site Hydrogeology

Groundwater occurs within the regolith - fractured bedrock settings of Georgia Piedmont. The water-table occurs within the undifferentiated overburden consisting of saprolite (i.e., residual soils and weathered rock). This is a shallow, transient saturated zone in which groundwater is primarily stored within regolith and is generally unconfined. Groundwater flow occurs through the porous saprolite and is recharged by precipitation stored in residual soils and typically discharges into major streams and rivers. The fractured (crystalline) bedrock includes the upper bedrock and competent bedrock with open fractures sufficient to yield water to a well. Open fractures are the primary conduit for groundwater flow through bedrock, because the rocks lack primary porosity. Recharge to bedrock aquifer systems comes from water stored in the saturated regolith, which functions as a sponge of sorts, slowly allowing groundwater to infiltrate the bedrock through areas of enhanced permeability. This rate of infiltration is very slow, as indicated by dating of groundwater in other areas in the Piedmont exceeding 60 years.

Local complexities in groundwater flow within this aquifer are influenced by topographic and related top of rock variations on site, which produces an uppermost aquifer surface that is generally a subdued reflection of topography. Groundwater flow is east/southeast from the landfilled areas. The first zone of groundwater saturation is generally present in the regolith; however, the water table at topographic highs may occur in the upper bedrock at higher land elevations.

Based on review of the potentiometric contours, horizontal hydraulic gradient is also variable and reflects topography at the site. The horizontal gradient appears to be steeper around the perimeter of the pond, particularly along the embankment where groundwater flow lines are influenced by the constructed slope for the dam. Field hydraulic conductivity tests (i.e., slug tests) performed in a variety of geologic materials indicate an average hydraulic conductivity on the order of 10-4 centimeters per second [(cm/s); Backup data includes 58 slug test measurements across the site with an average of 2.356 feet/day (ft/day); median 1.305 ft/day]. This hydraulic conductivity is generally consistent with regional measurements within Piedmont overburden. In general, groundwater flow is potentially faster through the transitionally weathered zone; however, the magnitude of difference is nominal enough to not be considered relevant at this site.

2.3 Uppermost Aquifer

At the site, groundwater within the (saturated) overburden represents the uppermost aquifer. This uppermost aquifer is comprised of both residual soils and transitionally weathered rock and is generally unconfined. It is recharged by precipitation stored in residual soils and typically discharges into major streams and rivers.



The bedrock is recharged by groundwater that is stored in the overburden. This groundwater slowly infiltrates underlying bedrock by moving through preferentially weathered discontinuities in the bedrock mass, such as foliation/compositional layering, joints, and faults. Groundwater flow in the bedrock is through inter-connected fractures, and groundwater discharges into streams and rivers where the bedrock fractures intersect a surface water drainage.

Local complexities in groundwater flow within this aquifer are influenced by topographic and related top of rock variations on site. The water table surface is a subdued reflection of topography at the site, with groundwater generally flowing east southeast.

3.0 SELECTION OF WELL LOCATIONS

Groundwater monitoring wells are installed to monitor the uppermost aquifer beneath the site. Locations are selected based on the disposal cell layouts and site geologic and hydrogeologic considerations. Locations are chosen to serve as upgradient (SGWA), lateral or downgradient (SGWC) based on groundwater flow direction determined by potentiometric evaluation. Monitoring wells have been identified for two constructed landfill units (Cell 1 and PAC Ash Cell) and two unconstructed landfill units (Cell 2 and Cell 3). Many of the wells identified for monitoring Cell 2 and Cell 3 have not yet been installed. Following installation of these monitoring wells, a well installation report documenting the actual well locations as well as the construction details and well logs will be submitted to EPD.

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 approved groundwater and surface water monitoring network is shown on Sheets H1C11029 and H1C11030 of the D&O Plan. The current monitoring well network consists of 20 wells located around Cell 1 and 12 wells around PAC Ash Cell to capture groundwater flow from each of the individual cells. Appendix A presents a tabulated list of individual monitoring wells with well construction details such as location coordinates, top-of-casing elevation, well depths and screened intervals. Construction details for those wells that have not yet been installed will be provided in a future well installation report. A modification that involves the addition of or a change to the monitoring network will be made by a minor modification to the permit pursuant to 391-3-4-.02(3)(b)6.

4.0 MONITORING WELL DRILLING, CONSTRUCTION, ABANDONMENT & REPORTING

The existing detection monitoring well network for Cell 1 and PAC Ash Cell is in place. Existing monitoring wells were installed following Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division Operating Procedure for Design and Installation of Monitoring Wells as a general guide for best practices. 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 modifications to the well network at the site. The proposed well network for Cell 2 and Cell 3 will be installed following the same guidance.

4.1 Drilling

A variety of well drilling methods are available for installing groundwater wells. Drilling methodology may include, but not be limited to: hollow stem augers, direct push, air rotary, mud rotary, or rotosonic techniques. The drilling



method will minimize the disturbance of subsurface materials and shall not cause impact to the groundwater. Borings will be advanced using an appropriate drilling technology capable of drilling and installing a well in site-specific geology. Drilling equipment shall be decontaminated before use and between borehole locations using the procedures described in the latest version of the Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division Operating Procedure for Field Equipment Cleaning and Decontamination as a guide.

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

Drilling for any subsurface hydrologic investigation, installation or abandonment of groundwater wells will be performed by a driller that has, at the time of installation, a performance bond on file with the Water Well Standards Advisory Counsel.

4.2 Design and Construction

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

4.2.1 Well Casings and Screens

American Society for Testing Materials (ASTM), National Sanitation 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 appropriate materials may be used for construction with prior written approval from the EPD.

4.2.2 Well Intake Design

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

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

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



performing sieve analysis of the formation material and determining well screen slot size based on the grain size distribution.

4.2.3 Filter Pack and Annular Seal

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

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

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

4.2.4 Protective Casing and Well Completion

After allowing the grout to settle, the well will be finished by installing a flush-mount or above-ground protective casing as appropriate, and building a surface cap. The use of flush-mount wells will generally be limited to paved surfaces unless site operations warrant otherwise. The surface cap will extend from the top of the cement grout to ground surface, where it will become a concrete apron extending outward with a radius of at approximately 2 feet from the well casing and sloped to drain water away from the well.

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

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

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

4.2.5 Well Development

After well construction is completed, wells will be developed by alternately purging and surging until relatively clear discharge water with little turbidity is observed. The goal will be to achieve a turbidity of less than 10 nephelometric turbidity units (NTUs); however, formation-specific conditions may not allow this target to be



accomplished. Additionally, the stabilization criteria contained in Appendix C, Groundwater Sampling Procedures, should be met. A variety of techniques may be used to develop site groundwater monitoring wells. The method used must create reversals or surges in flow to eliminate bridging by particles around the well screen. These reversals or surges can be created by using surge blocks, bailers, or pumps. The wells will be developed using a pump capable of inducing the stress necessary to achieve the development goals. Development equipment will be decontaminated prior to first use and between wells.

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

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

4.3 Well Abandonment

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

4.4 Documentation

The following information documenting the construction and development of each well will be submitted to EPD by a qualified groundwater scientist within 30 days after completing planned well installations.

- Name of drilling contractor and type of drill rig
- Documentation that the driller, at the time the monitoring wells were installed, had a bond on file with the Water Well Standards Advisory Council
- Dates of drilling and initial well emplacement
- Drilling method and drilling fluid if used
- Well location (± 0.5 ft.)
- Borehole diameter and well casing diameter
- Well depth (± 0.1 ft.)
- Lithologic logs
- Well casing materials
- Screen materials and design



- Screen length
- Screen slot size
- Filter pack material/size and volume
- Sealant materials and volume
- Documentation of ground surface elevation (± 0.01 ft.)
- Documentation of top of casing elevation (± 0.01 ft.)
- Schematic of the well with dimensions

5.0 GROUNDWATER MONITORING PARAMETERS AND FREQUENCY

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

Table 1, Groundwater Monitoring Parameters and Frequency presents the groundwater monitoring parameters and sampling frequency. A minimum of eight independent samples from each groundwater well will be collected and analyzed for 40 CFR 257, Subpart D, Appendix III and Appendix IV test parameters to establish a background statistical dataset. Subsequently, in accordance with 391-3-4-.10(6), the monitoring frequency for the Appendix III parameters will be at least semi-annual during the active life of the facility and the post-closure care period. If required, assessment monitoring will be performed per Georgia Chapter 391-3-4-.10, Rules for Solid Waste Management. GPC may petition for an alternate monitoring schedule for the site pursuant to applicable rules.

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

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



Table 1: GROUNDWATER MONITORING PARAMETERS & FREQUENCY

MONITORII	NG PARAMETER	GROUNDWATER MONITORING							
		BACKGROUND	1 ST SEMI-ANNUAL EVENT	2 ND SEMI-ANNUAL EVENT					
FIELD	Temperature	Х	Х	Х					
PARAMETERS	рН	Х	Х	Х					
	Specific Conductance	Х	Х	X					
	Turbidity	Х	Х	X					
	Dissolved Oxygen	Х	Х	X					
APPENDIX III	Boron	Х	Х	X					
(DETECTION)	Calcium	Х	Х	Х					
	Chloride	Х	Х	Х					
	Fluoride	Х	Х	Х					
	pH (field)	Х	Х	Х					
	Sulfate	Х	Х	Х					
	Total Dissolved Solids	Х	Х	Х					
APPENDIX IV	Antimony	Х							
(ASSESSMENT)	Arsenic	Х							
	Barium	Х							
	Beryllium	Х							
	Cadmium	Х							
	Chromium	Х							
	Cobalt	Х	A						
	Fluoride	Х	accordance with Georgi	and parameter list determined in a Chapter 391-3-4.10(6)					
	Lead	Х							
	Lithium	Х							
	Mercury	Х							
	Molybdenum	X							
	Selenium X								
	Thallium	Х	1						
	Radium 226 & 228	Х							



Table 2: ANALYTICAL METHODS

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



6.0 SAMPLE COLLECTION

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

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

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

<u>Surface Water:</u> During each sampling event, samples will be collected and handled in accordance with the procedures specified in Appendix D, Surface Water Sampling and Analysis Procedures. For surface water sampling, dedicated, non-dedicated, or disposable sampling equipment may be used. Surface water samples are analyzed for the target constituents listed in Table 1 and include both Appendix III and Appendix IV constituents.

<u>Effluent</u>: During each sampling event, an effluent sample will be collected from the point of discharge of FGD waste stream. The FGD sample is analyzed for the target constituents listed in Table 1 and include both Appendix III and Appendix IV constituents.

7.0 CHAIN-OF-CUSTODY

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

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

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

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



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

8.0 FIELD AND LABORATORY QUALITY ASSURANCE/QUALITY CONTROL

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

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

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

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

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

9.0 REPORTING RESULTS

- A semi-annual groundwater report that documents the results of sampling and analysis will be submitted to EPD. Semi-annual groundwater monitoring reports will be submitted to the EPD within 90 days of receipt of the groundwater analytical data from the laboratory. At a minimum, semi-annual reports will include:
- 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
- 3) A brief overview of purging/sampling methodologies
- 4) Discussion of results
- 5) Recommendations for the future monitoring consistent with the Rules
- 6) Potentiometric surface contour map for the aquifer(s) being monitored, signed and sealed by a Georgiaregistered PG or PE.
- 7) Table of as-built information for groundwater monitoring wells including top of casing elevations, ground elevations, screened elevations, current groundwater elevations and depth to water measurements
- 8) Groundwater flow rate and direction calculations
- 9) Identification of any groundwater wells that were recently installed or decommissioned, along with a narrative description of why these actions were taken



- 10) A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels
- 11) If applicable, semi-annual assessment monitoring results
- 12) Any alternate source demonstration completed during the previous monitoring period, if applicable
- 13) Laboratory reports
- 14) COC documentation
- 15) Field sampling logs including field instrument calibration, indicator parameters and parameter stabilization data
- 16) Documentation of non-functioning wells
- 17) Table of current analytical results for each well, highlighting statistically significant increases and concentrations above maximum contaminant level (MCL)
- 18) Statistical analyses
- 19) Certification by a qualified groundwater scientist.

10.0 STATISTICAL ANALYSES

Groundwater quality data from each sampling event will be statistically evaluated to determine if there has been a statistically significant change in groundwater chemistry. Historical background data will be used to determine statistical limits

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

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)).

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

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

Based on site-specific conditions, statistical methods may be intra-well, inter-well, or combination of both.

A site-specific statistical analysis plan that provides details regarding the statistical methods to be used will be placed in the site's operating record pursuant to 391-3-4-.10(6). Figure 1, Statistical Analysis Plan Overview, includes a flowchart that depicts the process that will be followed to develop the site-specific plan. Figure 2, Decision Logic for Determining Appropriate Statistical Methods, depicts the decision logic that will be used to



determine the appropriate method as required by 391-3-4-.10(6). Figure 3, Decision Logic for Computing Prediction Limits, presents the logic that will be used to calculate site-specific statistical limits and test compliance results against those limits.



Figure 1: STATISTICAL PLAN OVERVIEW

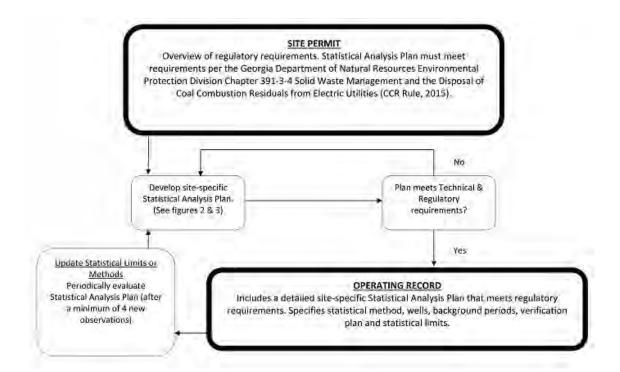




Figure 2: DECISION LOGIC FOR DETERMINING APPROPRIATE STATISTICAL METHOD

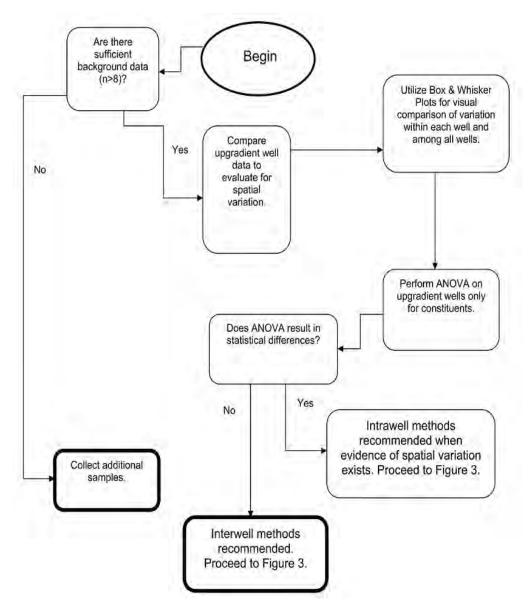
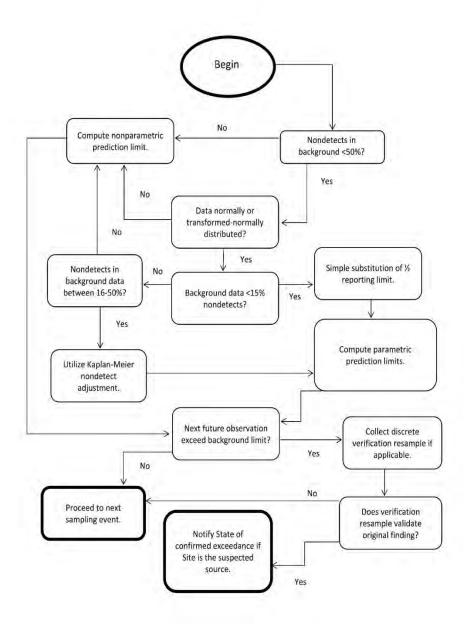


Figure 3: DECISION LOGIC FOR COMPUTING PREDICTION LIMITS



11.0 REFERNCES

American Society for Testing and Materials (ASTM)

- Georgia (GA) Department of Natural Resources Environmental Protection Division, *Rules of Solid Waste Management, Chapter 391-3-4-.10(6)*, Georgia Environmental Protection Division.
- Georgia (GA) Department of Natural Resources Environmental Protection Division, *Solid Waste Permit 102-009D(LI)*.)

Georgia Water Well Standards Act (1985)

Golder Associates Inc., Geological and Hydrogeological Summary Report, Plant Scherer, November 2018

Manual for Groundwater Monitoring (1991)

National Environmental Laboratory Accreditation Program (NELAP)

- Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division, *Operating Procedure* for Design and Installation of Monitoring Wells
- Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division, *Operating Procedure* for Field Equipment Cleaning and Decontamination
- Region 4 U.S. Environmental Protection Agency, Field Branches Quality System and Technical Procedures
- Southern Company Generation Engineering and Construction Services, *Design & Operations Plan for Georgia Power Company's*, *Plant Scherer CCB Disposal Facility*, February 26, 2010.
- Southern Company Services Earth Science and Environmental Engineering, Combustion By-Products Disposal Facility Site Acceptability Report, 2007.
- U.S. Environmental Protection Agency, 40 CFR 257, Subpart D, 80 Fed. Reg. 21468 (April 17, 2015).
- U.S. Environmental Protection Agency, *Manual SW-846*, *EPA 600/4-79-020*, *Standard Methods for the Examination of Water and Wastewater* (SM18-20),
- U.S. Environmental Protection Agency, Methods for the Chemical Analysis of Water and Wastes (MCAWW),

APPENDIX A

MONITORING SYSTEM DETAILS

- A1 MONITORING NETWORK WELL DETAILS
- A2 CELL 1 MONITORING WELL LOGS
- A3 PAC ASH CELL MONITORING WELL LOGS

A1. MONITORING NETWORK WELL DETAILS Georgia Power - Plant Scherer Juliette, GA

Well ID	Hydraulic Location	Latitute	Longitude	Top of Casing Elevation (feet msl)	Ground Surface Elevation (feet msl)	Total Depth (feet bgs)	Top of Screen Elevation (feet msl)	Bottom of Screen Elevation (feet msl)	Screen Length (feet)
CELL 1									
GWC-1	Downgradient	33.07878	-83.79131	414.82	411.82	38.2	346.9	336.6	10.3
GWC-2	Downgradient	33.07806	-83.79152	444.06	440.74	58.2	332.1	321.8	10.3
GWC-3	Downgradient	33.07751	-83.79247	445.63	442.72	49.7	370.8	360.5	10.3
GWC-4	Downgradient	33.07653	-83.79300	374.75	371.54	43.3	378.6	368.3	10.3
GWC-5	Downgradient	33.07554	-83.79305	380.03	376.91	34.1	372.8	362.5	10.3
GWC-6	Downgradient	33.07466	-83.79356	410.22	407.19	48.5	377.5	367.2	10.3
GWC-7	Downgradient	33.07375	-83.79430	411.57	408.31	58.7	369.7	359.4	10.3
GWC-8	Downgradient	33.07290	-83.79499	396.50	393.18	53.5	364.6	354.3	10.3
GWC-9	Downgradient	33.07296	-83.79587	415.70	412.36	20.1	376.2	365.9	10.3
GWC-10	Downgradient	33.07393	-83.79635	418.07	414.29	35.1	367.9	357.6	10.3
GWC-11	Downgradient	33.07487	-83.79713	407.80	404.76	34.4	378.1	367.8	10.3
GWC-12	Downgradient	33.07578	-83.79786	386.01	383.02	37.7	385.3	375.0	10.3
GWC-13	Downgradient	33.07677	-83.79839	392.68	389.30	43.3	386.6	376.3	10.3
GWC-14	Downgradient	33.07764	-83.79930	402.19	399.06	27.5	386.2	375.9	10.3
GWA-15	Upgradient	33.07862	-83.79873	412.75	409.54	29.5	395.6	385.3	10.3
GWA-16	Upgradient	33.07927	-83.79776	419.58	416.54	57.8	396.5	386.2	10.3
GWA-17	Upgradient	33.07916	-83.79656	403.41	400.25	46.8	409.2	398.9	10.3
GWC-18	Downgradient	33.07858	-83.79554	439.64	436.36	60.4	389.6	379.3	10.3
GWC-19	Downgradient	33.07760	-83.79407	429.98	426.12	58.0	382.3	372.0	10.3
GWC-20	Downgradient	33.07844	-83.79249	426.09	422.82	72.7	363.7	353.4	10.3
Cell 2									
GWA-23	Upgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWA-24	Upgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-25	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-26	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-27	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-28	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD



A1. MONITORING NETWORK WELLDETAILS

Georgia Power - Plant Scherer Juliette, GA

Well ID	Hydraulic Location	Latitute	Longitude	Top of Casing Elevation (feet msl)	Ground Surface Elevation (feet msl)	Total Depth (feet bgs)	Top of Screen Elevation (feet msl)	Bottom of Screen Elevation (feet msl)	Screen Length (feet)
Cell 3	'							'	
GWC-30	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-31	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-32	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-33	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-34	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-35	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-36	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-37	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-38	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWA-39	Upgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWA-40	Upgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWA-41	Upgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-42	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-43	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-44	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
PAC ASH C	ELL								
GWA-21	Upgradient	33.08045	-83.79814	422.30	419.56	20.7	411.9	401.6	10.3
GWA-22	Upgradient	33.08123	-83.79810	444.23	441.75	42.5	412.0	401.7	10.3
GWA-45	Upgradient	33.08044	-83.80327	450.89	447.98	35.5	425.7	415.4	10.3
GWA-46	Upgradient	33.08075	-83.80214	460.86	458.10	47.0	424.2	413.9	10.3
GWA-47	Upgradient	33.08097	-83.80100	465.55	462.81	54.2	421.7	411.4	10.3
GWA-48	Upgradient	33.08121	-83.79984	461.47	458.73	64.2	407.6	397.3	10.3
GWA-49	Upgradient	33.08142	-83.79870	432.61	429.96	41.0	401.9	391.6	10.3
GWC-29	Downgradient	33.07825	-83.80058	399.39	396.69	27.1	382.6	372.3	10.3
GWC-50	Downgradient	33.07837	-83.79980	406.92	404.18	36.5	380.7	370.4	10.3
GWC-51	Downgradient	33.07815	-83.80149	409.89	406.88	26.8	393.4	383.1	10.3
GWC-52	Downgradient	33.07852	-83.80225	416.89	414.14	32.9	394.3	384.0	10.3
GWC-53	Downgradient	33.07948	-83.80310	435.57	432.93	33.0	412.9	402.6	10.3

Notes:

- 1. feet msl = feet mean sea level
- 2. feet bgs = feet below ground surface





GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

				0.555	DI			E 39
		N COMPANY SERVICES, INC. IENCE AND ENVIRONMENTAL ENGINEER						Facility
LAK		LEVEL AND LIVING INVESTIGE ENGINEER	and LO	CATION	<u>Cell I</u>			
DATE :	START	ED _10/28/2009	SURF. EL	EV . <u>371</u>	.5	COORDINA	ATES:	N 1,120,077.83 E 2,411,556.16
CONT	RACTO	R SCS Field Services EQUIPM	ENT CME-5	50 ME 1	HOD _	Hollow Stem A	uger	
DRILLI	ED BY	P. Smith LOGGED BY D. Brooks	CHE	CKED BY	R. Tin	sley	ANG	LE BEARING
BORIN	G DEP	TH 36 ft. GROUND WATER DEPTH: I	DURING 6 ft.	·	COMP.		DELA	AYED
NOTES	8 _ We	ll installed. Refer to well data sheet.						
				T		ı		
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Residuum, sandy SILT (MLS) and silty SAND)					
		(SM)						
:								
5								
:	$\left \cdot \right \cdot \left \cdot \right _{\overline{2}}$	7						
		-						
10								
15								
			352.0					
20		Silty SAND (SM); mottled black and white; fin		ss	19.5-	3-5-16		
		grained; gnessic saprolite		-1	21.0	(21)		
[:								





LOG OF TEST BORING

		OMPAN	DE	OLECT	Dlant S	shoror CCR S	torago	Facility	
SOU	UTHE RTH S	RN COMPANY SERVICES, INC. CIENCE AND ENVIRONMENTAL ENGINEERING	PROJECT Plant Scherer CCB Storage Facility LOCATION Cell 1						
				I			T		
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS	
		Silty SAND (SM); mottled black and white; fine grained; gnessic saprolite (Con't)							
25				SS -2	24.5- 26.0	11-7-9 (16)			
30		Silty SAND (SM); mottled black and white; fine to medium grained		V ss	29.5-	21-15-11			
		g.ag		-3	31.0	(26)			
35			335.5	SS -4	34.5- 36.0	7-9-21 (30)			
		Bottom of borehole at 36.0 feet.							
40									
	İ								

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

45

50

WELL CONSTRUCTION LOG

Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	illori	WELL
CCB Storage Facility	DRILLER: P. Smith		NAME
LOCATION: Cell 1	RIG TYPE: CME 550		INAIVIL
LOGGER: D. Brooks	DRILLING METHODS: HSA		GWC-1
DATE CONSTRUCTED: 10/28/2009	BINIELING METHODO. HON		1 0000
D. (12 001/01/10012B: 10/20/2000		DEPTH	ELEVATION
		FEET	FT, MSL
		FEET	FI, WISL
Locking Hinged Top			
1/4-inch Vent—	TOP OF RISER	-3.21	374.75
1/4-inch Weep Hole	2" Threaded Riser Cap		
	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
<u> </u>	GROUND SURFACE	0.00	371.54
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	PROTECTIVE CASING		
	SIZE: 4x4-inch		
▼ FL 266.64	TYPE: Anodized Aluminum		
▼ El. 366.61 12/6/2009	BOTTOM OF PROTECTIVE CASING		
12/0/2009	BOTTOM OF PROTECTIVE CASING		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 8 cubic feet		
	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	TOP OF SEAL	19.50	352.04
	ANNULAR SEAL	10.00	002.04
	TYPE: 1/4-inch coated bentonite pellets		
	5-gal buckets		
	AMOUNT: 1 bucket		
	PLACEMENT: Tremie		
	TOP OF FILTER PACK	22.00	349.54
	FILTER PACK		
	TYPE: DSI Sand - 1A (20/30)		
	Drillers Services, Inc.		
	AMOUNT: 2.5 bags PLACEMENT: Tremie; wash with water		
	FLACEMENT. Hernie, wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	24.69	346.85
	SCREEN		2.0.00
	DIA: 2-inch		
	TYPE: Schedule 40 PVC Prepack		
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch	04.00	000.05
	BOTTOM OF SCREEN	34.69	336.85
	BOTTOM OF CASING	34.99	336.55
	BOTTOW OF CASING	J 4 .33	330.33
	-non-		
Н	DLE DIA: 9"		



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

SO EAL	UTHER RTH SC	N COMPANY SE ENCE AND EN	ERVICES, INC. VIRONMENTAI	L ENGINEERIN						Facility
										_N 1,119,816.77 E 2,411,493.24
										14 1,110,010.77
										LE BEARING
										AYED
NOIL	<u> </u>	i ilistalled. Itelel	to well data silee							
							_			
DEPTH (ft)	GRAPHIC LOG	МАТІ	ERIAL DESCRIP	TION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Very moist, sai	ndy SILT (MLS) a	nd silty SAND			•,			
		(SM)	, , ,	•						
5										
5										
• • • • • •										
10										
15										
• • • • • •										
20		Wet city SAN	D (SM); green an	d white with	357.4					
20		occassional or	ange mottling; gn	eissic saprolite		SS -1	19.5- 21.0	2-3-6 (9)		
							£1.U	(3)		



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T.\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC. EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING PROJECT Plant Scherer CCB Storage Facility

EA	EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING		INEERING L	OCATION	Cell 1	Cell 1		
DEPTH (ft)	GRAPHIC	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Wet, silty SAND (SM); green and white occassional orange mottling; gneissic (Cont)	with saprolite					
25		Wet, silty SAND (SM); green and white occassional lite orange and black mott gneissic saprolite	with ing; soft;	SS -2	24.5- 26.0	3-5-7 (12)		
30	_	Wet, silty SAND (SM); green and white occassional orange mottling; soft; gnei saprolite	with ssic	SS -3	29.5- 31.0	6-5-6 (11)		
35	_			SS -4	34.5- 36.0	5-5-9 (14)		
						,		
40				V ss	39.5-	4-5-8		
				-5	41.0	(13)		
45								
				SS -6	44.5- 46.0	4-6-10 (16)		
		1 						
50		Wet, silty SAND (SM); black, green an with occassional lite orange mottling; n	nicaceous;	SS -7	49.5- 51.0	6-7-10 (17)		





LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.

EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

LOCATION Cell 1

PROJECT Plant Scherer CCB Storage Facility

SAMPLE DEPTH (ft.) SAMPLE TYPE NUMBER ELEVATION RECOVERY 9 (RQD) GRAPHIC LOG BLOW COUNTS (N VALUE) DEPTH (ft) MATERIAL DESCRIPTION COMMENTS gneissic saprolite
Wet, silty SAND (SM); green and white with
occassional orange mottling; gneissic saprolite (Con't) 55 54.5-56.0 SS 7-10-15 -8 (25)320.9

Bottom of borehole at 54.5 feet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

70

75

60

65

WELL CONSTRUCTION LOG Southern Company Generation PROJECT:Plant Scherer DRILLING CO.: SCS, Inc. WELL CCB Storage facility DRILLER: S. Denty NAME RIG TYPE: CME 550 DRILLING METHODS: HSA LOCATION: Cell 1 LOGGER: L. Millet GWC-2 DATE CONSTRUCTED: 10/8/2009 DEPTH **ELEVATION** FEET FT, MSL Locking Hinged Top 1/4-inch Vent ~ 380.03 TOP OF RISER -3.12 2" Threaded Riser Cap 1/4-inch Weep Hole Pea Gravel in annular space 4-ft x 4-ft x 4" concrete pad 0.00 376.91 **GROUND SURFACE PROTECTIVE CASING** SIZE: 4x4-inch TYPE: Anodized Aluminum ▼ El. 368.01 BOTTOM OF PROTECTIVE CASING 12/5/2009 BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 40.98 335.93 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie 42.98 333.93 TOP OF FILTER PACK **FILTER PACK** TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 3/4 bags PLACEMENT: Tremie; wash with water 44.78 332.13 BOTTOM OF RISER / TOP OF SCREEN SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch 322.13 BOTTOM OF SCREEN 54.78 **BOTTOM OF CASING** 55.08 321.83 HOLE DIA: 9"





GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

SO! EAI	UTHERN RTH SCI	N COMPANY SE ENCE AND EN	ERVICES, INC. VIRONMENTAL	ENGINEERIN		OJECT _			_	Facility
DATE	STARTE	: D 10/29/2009	COMPLETED	10/29/2009	SURF FI	FV 407	2	COORDIN	ATFS:	N 1,119,614.01 E 2,411,202.80
		-								LE BEARING
										AYED
			to well data sheet							
DEPTH (ft)	GRAPHIC LOG	МАТІ	ERIAL DESCRIPT	TION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (M	ILS) and SILT (ML	.)			••			
			, , , , ,	,						
_										
5										
10										
15										
		Sandy SILT /M	II S) mottled area	go tan and						
		black, micaced	ILS), mottled oran	ye, tan and		SS -1	18.5- 20.0	4-4-7 (11)		
20							20.0	(11)		





LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC. EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility

LOCATION Cell 1

EAR	RIH SC	ZIENCE AND ENVIRONMENTAL ENGINEERING	LO	LOCATION Cell 1					
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS	
25		Sandy SILT (MLS) and SILT (ML) (Con't) Sandy SILT (MLS), mottled orange, tan and black with tan lean CLAY (CL), micaceous		SS -2	23.5- 25.0	5-5-7 (12)			
		Silty SAND (SM), mottled orange, tan, white and	378.7						
30		black, fine grained, micaceous		SS -3	28.5- 30.0	8-9-14 (23)			
35		Silty SAND (SM), mottled orange and tan with trace amounts of white sand, fine grained, micaceous		SS -4	33.5- 35.0	11-12-22 (34)			
	<u>I</u>	<u> </u>							
		Silty SAND (SM), mottled orange and whit, fine to medium grained, micaceous		SS -5	38.5- 40.0	17-28-44 (72)			
40									
		Silty SAND (SM), mottled orange, tan, and black, fine grained, micaceous		SS -6	43.5- 43.9	24-30-50/-7" (100+)			
45		ine grained, micaceous			_ +0.0	(1001)			
	<u> 14 (14 (14 -</u>	Bottom of borehole at 46.0 feet.	361.2	L			L	Auger refusal.	

WELL CONSTRUCTION LOG Southern Company Generation PROJECT:Plant Scherer DRILLING CO.: SCS, Inc. WELL CCB Storage FacilitySolid Waste Management DRILLER: Ranger NAME RIG TYPE: CME 55 DRILLING METHODS: HSA LOCATION: Cell 1 GWC-3 LOGGER: D. Brooks DATE CONSTRUCTED: 10/29/2009 DEPTH **ELEVATION** FEET FT, MSL Locking Hinged Top -3.03 410.22 1/4-inch Vent ~ TOP OF RISER 2" Threaded Riser Cap 1/4-inch Weep Hole Pea Gravel in annular space 4-ft x 4-ft x 4" concrete pad 0.00 407.19 **GROUND SURFACE PROTECTIVE CASING** SIZE: 4x4-inch TYPE: Anodized Aluminum ▼ El. 370.68 BOTTOM OF PROTECTIVE CASING 12/5/2009 BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 14 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 31.90 375.29 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie 34.40 372.79 TOP OF FILTER PACK **FILTER PACK** TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6.5 bags PLACEMENT: Tremie; wash with water 36.40 BOTTOM OF RISER / TOP OF SCREEN 370.79 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch 46.40 360.79 BOTTOM OF SCREEN

HOLE DIA: 9"

BOTTOM OF CASING

46.70

360.49





GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

SOU EAR	THERI	N COMPANY SI IENCE AND EN	ERVICES, INC. VIRONMENTAL	ENGINEERIN		OJECT _			_	Facility
DATE	STARTI	E D 11/2/2009	COMPLETED	11/2/2009	SURF. ELI	EV . 408	3	COORDINA	ATES:	N 1,119,256.25 E 2,411,041.63
		_								LE BEARING
										AYED
			to well data sheet.		<u> 27.0</u>					
		rinotalica: rtolor	to well data sheet.							
DEPTH (ft)	GRAPHIC LOG	MAT	ERIAL DESCRIPT	ION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
						'S	SA		X	
10		Sality SIET (IV	ILS) and SILT (ML							
	+++	Damp soft SI	LT (ML), mottled b	lack tan and	389.8					
		orange, micac		idon, tail allu		SS -1	18.5- 20.0	11-7-10 (17)		
20							20.0	('')		
	++++									



LOG OF TEST BORING

PROJECT Plant Scherer CCB Storage Facility SOUTHERN COMPANY SERVICES, INC. EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING LOCATION Cell 1

DEPTH	(#)	GRAPHIC)	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
	25			Damp, soft, SILT (ML), mottled black, tan and orange, micaceous (Con't) Very damp, soft, SILT (ML), mottled black, tan, white and orange, micaceous		SS -2	23.5- 25.0	7-8-11 (19)		
			ĮΨ							
			-	-	379.8					
	30			Very moist, soft, silty SAND (SM) and SILT (ML); mottled black, tan, orange and white; fine grained; very micaceous with large mica flakes	379.0	SS -3	28.5- 30.0	9-13-20 (33)		
SCHERER GYF				Moist, soft, silty SAND (SM); mottled black, tan, orange and white; fine to medium grained;		X SS -4	33.5- 33.9	50/5" (100+)		
- T:ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ	35			micaceous						
R PROJEC					369.8		00.5	50		
MAJO				Moist, soft, clayey SAND (SC); black with orange, tan and white mottles; fine grained;	368.8	SS -5	38.5- 39.0	50 (0)	 	auger refusal.
HESEE	10			micaceous Bottom of borehole at 39.5 feet.						
10 11:5										
- 4/27/										
E.GDT										
TABAS										
SEE DA	15									
GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56										
ERING										
NGINE										
TECH E	50	•								
GEO										

DPO IECT: Diant Schoror	Southern Company Genera	allO11	\\/EII
PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.		WELL
CCB Storage Facility LOCATION: Cell 1	DRILLER: Ranger RIG TYPE: CME 550		NAME
LOGGER: W. Clanton	DRILLING METHODS: HSA		GWC-4
DATE CONSTRUCTED:11/21/2009	DRILLING METHODS. HSA		GVVC-4
DATE CONSTRUCTED. 11/21/2009		DEDTU	ELEVATION
		DEPTH	ELEVATION
	-	FEET	FT, MSL
Locking Hinged Top ————			
1/4-inch Vent—	TOP OF RISER	-3.26	411.57
1/4-inch Weep Hole	2" Threaded Riser Cap		
	7		
	Dog Cravel in annular anges		
4-ft x 4-ft x 4" concrete pad	Pea Gravel in annular space		
	ODOLIND SUBFACE	0.00	408.31
	GROUND SURFACE	0.00	400.31
	PROTECTIVE CASING		
	SIZE: 4x4-inch		
I III N	TYPE: Anodized Aluminum		
	2. / wodi25d / wdfillidiff		
	BOTTOM OF PROTECTIVE CASING		
	301101110111011201112011120111		
	N		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 11.5 cubic feet		
	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	TOP OF SEAL	26.30	382.01
1 54 6	ANNULAR SEAL	20.00	002.01
1 1816	TYPE: 1/4-inch coated bentonite pellets		
1 19 19	5-gal buckets		
▼ El. 381.02	AMOUNT: 1.25 buckets		
12/4/2009	PLACEMENT: Tremie		
	TOP OF FILTER PACK	27.95	380.36
	FILTER PACK		
1816	TYPE: DSI Sand - 1A (20/30)		
25 1 R	Drillers Services, Inc.		
1215	AMOUNT: 5.5 bags		
181R	PLACEMENT: Tremie; wash with water		
128 15	BOTTOM OF RISER / TOP OF SCREEN	29.70	378.61
 	SCREEN	20.10	070.01
154,554	DIA: 2-inch		
∣ 21.4 5	TYPE: Schedule 40 PVC Prepack		
165⊒3	OPENING WIDTH: 0.01-inch		
129—13	OPENING TYPE: Slotted		
 12 5	SLOT SPACING: 0.25-inch		
15000	SLOT LENGTH: 1.5-inch		
l 129−1 5	BOTTOM OF SCREEN	39.70	368.61
		40.00	000.04
 	BOTTOM OF CASING	40.00	368.31
0000	2		
HOLEDIA	V. O.		
HOLE DIA	າ. ອ		
			İ



		COMPANT						
SOU	JTHE	ERN COMPANY SERVICES, INC. SCIENCE AND ENVIRONMENTAL ENGINEERING	PR	_			torage	Facility
EAF	по	CIENCE AND ENVIRONMENTAL ENGINEERING	3 LO	CATION	Cell 1			
		RTED 10/7/2009 COMPLETED 10/7/2009						
CONT	RACT	OR SCS Field Services EQUIPMENT	CME-5	50 ME 1	THOD _	Hollow Stem /	Auger; I	HQ Rock Core
DRILL	ED B	Y T. Milam LOGGED BY LM/BG	CHE	CKED BY	R. Tin	sley	_ angi	LE BEARING
BORII	NG DE	EPTH 34.8 ft. GROUND WATER DEPTH: DUR	ING		COMP.		_ DELA	YED 20.2 ft. after 18 hrs.
NOTE	S Ele	evation based on stake. Offset 5' west of stake. Well i	nstalled. I	Refer to v	vell data	sheet.		
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
10		CLAY (CL); red and tan; medium stiff; damp; low plasticity						
20		▼		ss	19.5-	2-3-5		
			372.2	-1	21.0	(8)		
		SILT (ML); gray; medium dense; moist; micaceous						





SOI EAI	UTHER RTH SC	N COMPANY SERVICES, INC. IENCE AND ENVIRONMENTAL ENGINEERING		OJECT _ CATION		cherer CCB St	torage	Facility
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		SILT (ML); gray; medium dense; moist; micaceous (Con't)						
25	-		367.2	SS -2	24.5- 26.0	3-3-6 (9)		
		Silty SAND (SM); gray; fine grained; dense; very moist; micaceous						
		GNEISS - black and white, weathered, hard	364.2					
30		augering	363.2	SS -3	29.5- 29.7	50/2" (100+)		
		GNEISS - black and white, fine to medium grain, hard, not weathered				(1001)	J	Auger refusal.
				RC -1	30.0- 34.8		100 (100)	
35		D. W	358.4					
		Bottom of borehole at 34.8 feet.						
40	_							
45								
¥	1							
	•							

WELL CONSTRUCTION LOG Southern Company Generation WELL PROJECT: Plant Scherer DRILLING CO.: SCS, Inc. NAME CCB Storage Facility DRILLER: S. Denty LOCATION: Cell 1 RIG TYPE: CME 550 DRILLING METHODS: HAS/HQ Core GWC-5 LOGGER: B. Gallagher DATE CONSTRUCTED: 10/22/09 DEPTH **ELEVATION** FEET FT, MSL Locking Hinged Top _ 1/4-inch Vent-TOP OF RISER -3.32 396.50 2" Threaded Riser Cap 1/4-inch Weep Hole Pea Gravel in annular space 4-ft x 4-ft x 4" concrete pad 0.00 393.18 **GROUND SURFACE** PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING **BACKFILL MATERIAL** TYPE: Portland Cement Grout AMOUNT: 7 cubic feet **RISER CASING** DIA: 2-inch TYPE: Schedule 40 PVC ▼ El. 379.16 JOINT TYPE: Flush Threaded 12/3/2009 14.97 378.21 TOP OF SEAL ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: PLACEMENT: Tremie 16.97 376.21 TOP OF FILTER PACK FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: PLACEMENT: Tremie; wash with water 20.43 372.75 BOTTOM OF RISER / TOP OF SCREEN **SCREEN** DIA: 2-inch TYPE: Schedule 40 PVC

OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch

HOLE DIA: 9"

30.43

30.73

BOTTOM OF SCREEN

BOTTOM OF CASING

362.75

362.45



		N COMPANY SERVICES, INC. HENCE AND ENVIRONMENTAL ENGINEE						Facility
DATE	START	ED 10/8/2009 COMPLETED 10/8/2009	SURF. ELI	EV . 412	.4	COORDINA	ATES:	N 1,118,575.72 E 2,410,872.48
CONT	RACTO	R SCS Field Services EQUIPM	MENT CME-5	50 ME 1	HOD _	Hollow Stem A	uger; I	HQ Rock Core
DRILL	ED BY	T. Milam LOGGED BY LM/BG	CHEC	CKED BY	R. Tin	sley	ANGI	LE BEARING
BORII	NG DEP	TH 44.5 ft. GROUND WATER DEPTH:	DURING		COMP.		DELA	AYED
NOTE	S Offs	et 5' west of stake. Well installed. Refer to well	data sheet.					
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		CLAY (CL)						
5								
<u>.</u>								
10			402.4					
		SILT (ML)						
15		Silty SAND (SM); tan with orange and black	397.4					
		mottling; loose; dry; abundant mica						
20		Silty SAND (SM); tan with orange and black	392.4	00	10.5	2.5.0		
		mottling; loose; dry; abundant mica		SS -1	19.5- 21.0	3-5-6 (11)		





50

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.

PROJECT Plant Scherer CCB Storage Facility

EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING **LOCATION** Cell 1 SAMPLE DEPTH (ft.) SAMPLE TYPE NUMBER ELEVATION RECOVERY 9 (RQD) GRAPHIC LOG DEPTH (ft) MATERIAL DESCRIPTION COMMENTS SS 24.0-5-6-10 Silty SAND (SM); black and tan with occasional 25 25.5 (16)black mottling; very fine to fine grained; loose; dry; mica 29.5-50/4" White cobble SS 30 29.8 -3 (100+)GEOTECH ENGINEERING LOGS - ESEE DATABASE. GDT - 4/27/10 11:56 - T.\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP. GPJ Auger refusal. GNEISS - white and black, medium to fine RC 100 34.0grain, soft to medium hard, slightly to highly 35 35.5 (0)weathered, banded Micaceous seam at 35.9' RC 35.5-100 40.5 370.7 Lost all water return at 42.0' ... SCHIST - black, soft, highly weathered RC Secondary quartz seam at 41.9' 40.5-50 44.5 (30)Nearly completely weathered mica seam at 43.8' 367.9 45 Bottom of borehole at 44.5 feet.

WELL CONSTRUCTION LOG Southern Company Generation PROJECT: Plant Scherer DRILLING CO.: SCS, Inc. WELL DRILLER: S. Denty NAME CCB Storage Facility LOCATION: Cell 1 RIG TYPE: CME 550 LOGGER: B. Gallagher DRILLING METHODS: HAS/HQ Core GWC-6 DATE CONSTRUCTED: 10/21/09 DEPTH ELEVATION FEET FT, MSL Locking Hinged Top _ 1/4-inch Vent-TOP OF RISER -3.34 415.70 1/4-inch Weep Hole 2" Threaded Riser Cap Pea Gravel in annular space 4-ft x 4-ft x 4" concrete pad **GROUND SURFACE** 0.00 412.36 PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING **BACKFILL MATERIAL** TYPE: Portland Cement Grout AMOUNT: 13 cubic feet **RISER CASING** DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded 382.50 29.86 TOP OF SEAL ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: PLACEMENT: Tremie 31.86 380.50 TOP OF FILTER PACK FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. ▼ El. 378.60 AMOUNT: 12/3/2009 PLACEMENT: Tremie; wash with water 34.86 377.50 BOTTOM OF RISER / TOP OF SCREEN SCREEN DIA: 2-inch TYPE: Schedule 40 PVC OPENING WIDTH: 0.01-inch **OPENING TYPE: Slotted** SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch

HOLE DIA: 9"

44.86

45.16

BOTTOM OF SCREEN

BOTTOM OF CASING

367.50

367.20



		COMPANY SE ENCE AND ENV	RVICES, INC. VIRONMENTAL	ENGINEERING		OJECT _			_	Facility
DATE	STARTE	D 10/19/2009	COMPLETED	10/20/2009 S	SURF. ELI	E V . 414	.3	COORDINA	ATES:	N 1,118,243.66 E 2,410,645.83
										LE BEARING
										AYED
NOIE	S <u>Eleva</u>	lion based on st	ake. Well Installed	i. Reier to well da	ata sneet.					
DEPTH (ft)	GRAPHIC LOG	MATE	ERIAL DESCRIPT	ION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Residuum, CLA damp; low plas	Y (CL); red; medi ticity; trace mica	um dense;						
5										
		D	F (8.41) . 4		405.3					
10		damp; with mic	Г (ML); tan; mediu a	ım dense;						
15										
			SAND (SM); tan a		398.3					
		texture)	damp; with mica	(reminant grieiss						
20										
						SS -1	19.5- 21.0	5-6-8 (14)		



LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.

EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility

LOCATION Cell 1

EAR	(1H SC	CIENCE AND ENVIRONMENTAL ENGINEERING	LO	CATION	Cell 1			
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Saprolite, silty SAND (SM); tan and black; medium dense; damp; with mica (remnant gneiss texture) (Con't)	389.8					
25		Saprolite, poorly graded SAND with SILT (SP-SM); tan, white and black; medium dense; damp; with iron oxide stain (remnant gneiss texture)		SS -2	24.5- 26.0	6-8-16 (24)		
			384.8					
30		Saprolite, silty SAND (SM); white and tan; medium dense; moist	304.0	SS -3	29.5- 31.0	6-6-8 (14)		
35				ss	34.5-	3-5-6		
				-4	36.0	(11)		
		<u> </u>	374.8					
40		Saprolite, poorly graded SAND (SP); white, black, and tan; medium dense to dense; moist; trace mica		SS -5	39.5- 41.0	5-8-10 (18)		
45				SS -6	44.5-	5-11-15		
				-b	46.0	(26)		
					40.5	47.00.00		
50				SS -7	49.5- 51.0	17-23-28 (51)		





LOG OF TEST BORING

PROJECT Plant Scherer CCB Storage Facility SOUTHERN COMPANY SERVICES, INC. EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING **LOCATION** Cell 1 SAMPLE DEPTH (ft.) SAMPLE TYPE NUMBER % ELEVATION RECOVERY 9 (RQD) GRAPHIC LOG BLOW COUNTS (N VALUE) DEPTH (ft) MATERIAL DESCRIPTION COMMENTS Saprolite, poorly graded SAND (SP); white, black, and tan; medium dense to dense; moist; trace mica (Con't) 359.7 √ 54.5-50/1" 55 SS Bottom of borehole at 54.5 feet. -8 54.6 (100+)60 65 70 75

WELL CONSTRUCTION LOG	Southern Company Gene	ration	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc. DRILLER: P. Smith		WELL NAME
CCB Storage Facility LOCATION: Cell 1	RIG TYPE: CME 550		INAIVIE
LOGGER: Ben Gallagher	DRILLING METHODS: HSA		GWC-7
DATE CONSTRUCT 10/20/200			GVVC-1
DATE CONSTRUCT 10/20/200	9	DEDTU	ELEVATION.
		DEPTH	ELEVATION
Landon I Pour d'Erm		FEET	FT, MSL
Locking Hinged Top			
1/4-inch Vent	TOP OF RISE	r -3.78	418.07
1/4-inch Weep Hole	2" Threaded Riser Cap		
0.6. 0.6. 411	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
	GROUND SURFAC	E 0.00	414.29
` ``;			
/:	PROTECTIVE CASING		
	SIZE: 4x4-inch		
	TYPE: Anodized Aluminum		
Ę			
	BOTTOM OF PROTECTIVE CASIN	<u>3</u>	
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 18 cubic feet		
	RISER CASING		
	DIA: 2-inch		
▼ El. 377.90	TYPE: Schedule 40 PVC		
12/3/2009	JOINT TYPE: Flush Threaded		
		. 00.00	074.00
	TOP OF SEA	⊥ 39.90	374.39
	ANNULAR SEAL		
	TYPE: 1/4-inch coated bentonite pellets 5-gal buckets		
	5-gal buckets AMOUNT: 1 bucket		
	PLACEMENT: Tremie		
	TOP OF FILTER PACE	к 41.70	372.59
	FILTER PACK	41.70	312.39
	TYPE: DSI Sand - 1A (20/30)		
	Drillers Services, Inc.		
	AMOUNT: 5 bags		
	PLACEMENT: Tremie; wash with water		
	i LAGEMENT. Home, wash with water		
	BOTTOM OF RISER / TOP OF SCREE	N 44.57	369.72
	SCREEN	11.07	300.12
	DIA: 2-inch		
	TYPE: Schedule 40 PVC Prepack		
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREE	N 54.57	359.72
	# U	1	300.12
	BOTTOM OF CASIN	G 54.87	359.42
	+ + + +	1	
I	IOLE DIA: 9"		
			1

PROJECT: SCS-Plant Scherer PROJECT NUMBER: 1662350A-01 DRILLED DEPTH: 45.00 ft LOCATION: Juliette, GA

DRILL RIG: CME 550 DATE STARTED: 3/29/17 DATE COMPLETED: 3/29/17

RECORD OF BOREHOLE GWC-8A
L RIG: CME 550
E STARTED: 3/29/17
E COMPLETED: 3/29/17
G COMPLETED: 3/29/17
C COMPLETED: 3/29/17
C COMPLETED: 3/29/17
C C ELEVATION: 401.47 ft

SHEET 1 of 1 DEPTH W.L.:22.4' DATE W.L.:3/30/2017 TIME W.L.:9:00

	z	SOIL PROFILE						SAMPLES				
DEPTH (ff)	ELEVATION (ft)	DESCRIPTION	nscs	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLE NO.	TYPE	BLOWS per 6 in 140 lb hammer 30 inch drop	N-VALUE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0 —	-	0.00 - 8.50 SM, SILTY SAND, non-plastic; dark brown; non-cohesive, dry, w <pl, loose.<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Protective Alumnium —</td><td>WELL CASING Interval: 0' - 44.7' Material: Schedule 40 PVC Diameter: 2" Joint Type: Flush/Screw</td></pl,>									Protective Alumnium —	WELL CASING Interval: 0' - 44.7' Material: Schedule 40 PVC Diameter: 2" Joint Type: Flush/Screw
5 — -	— 395 - - -		SM			S1	DO	2-2-2	4	<u>0.00</u> 1.50	- - -	WELL SCREEN Interval: 34.3' - 44.3' Material: Schedule 40 PVC Diameter: 2" Slot Size: 0.010 End Cap: 44.3' - 44.7"
-	- 390 	8.50 - 18.50 CL, CLAY with trace organics, moderate plasticity; dark brown to red brown;			389.7 8.50	S2	DO	1-2-1	3	0.16 1.50		FILTER PACK Interval: 27.8' - 45' Type: FilterSil FILTER PACK SEAL Interval: 24.7' - 27.8'
10 —	-	cohesive, moist, w~PL very soft.										Type: Pel-Plug Bentonite Pellets ANNULUS SEAL Interval: 0' - 24.7' Type: CETCO Pure Gold
15 —	— 385 –		CL			S3	DO	1-1-3	4	0.66 1.50	CETCO Pure Gold Grout —	Grout (70:30) WELL COMPLETION Pad: 6'x6'x6" Protective Casing: Aluminu
-	-										(70:30)	4" x 4" x 5' Bollards: 5' Round Steel DRILLING METHODS Soil Drill: 4.25 inch HSA
-	— 380 –	18.50 - 19.50 ML, SILT with trace fine sand, non to low	ML	<i>Y/////</i>	379.7 18.50 378.7	S4	DO	3-4-6	10	1.50 1.50		Rock Drill: N/A
20 —	-	plasticity; red brown to black; cohesive, moist, w <pl, -="" 19.50="" 23.50="" black;="" coarse,="" fine="" loose.<="" moist,="" non="" non-cohesive,="" plastic;="" poorly-graded="" sand,="" soft.="" sp,="" td="" to="" w<pl,="" white=""><td>SP</td><td></td><td>19.50</td><td></td><td></td><td></td><td></td><td></td><td>CETCO Pure Gold Grout — (70:30) Pel-Plug Bentonite</td><td></td></pl,>	SP		19.50						CETCO Pure Gold Grout — (70:30) Pel-Plug Bentonite	
- 25 —	— 375 - -	23.50 - 33.50 SM, SILTY SAND, fine to coarse, non to low plasticity; white to black to bronze, saprolite,			374.7 23.50	S5	DO	2-7-10	17	1.50 1.50	-	-
	- - - 370	biolite gneiss; non-cohesive, moist, w <pl, loose<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Pel-Plug _ Bentonite -</td><td></td></pl,>									Pel-Plug _ Bentonite -	
30 —	- -		SM			S6	DO	10-25-42	67	1.16 1.50	FilterSil –	
-	- 365				364.7							-
- 35 —	-	33.50 - 45.00 SC, CLAYEY SAND, fine to coarse, non-plastic; gray to olive; non-cohesive, wet, w <pl, dense.<="" td="" very=""><td></td><td></td><td>33.50</td><td>S7</td><td>DO</td><td>20-50/5</td><td>50/5</td><td>0.75 1.50</td><td></td><td>-</td></pl,>			33.50	S7	DO	20-50/5	50/5	0.75 1.50		-
-	_ _ 360	wite, voly delise.									0.010" Slotte Schedule 40 –	
40 —	_		sc			S8	DO	50/4	50/4	0.16 1.50	PVC	-
=	-											-
-	— 355 –				252.0	 S9	DO	50/5	50/5	0.33 1.50		-
45 —		Boring completed at 45.00 ft		1117	353.2							1

LOG SCALE: 1 in = 5.5 ft

DRILLING COMPANY: Southern Company Services

DRILLER: Sean Denty

GA INSPECTOR: Michael Boatman, P.G. CHECKED BY: Rachel Kirkman, PG

DATE: 4/21/17





SOI	JTHERN	COMPANY	SERVICES, INC.		PR	OJECT _	Plant Sc	herer CCB S	torage	Facility
			ENVIRONMENTAL	ENGINEERING	LO	CATION	Cell 1			
DATE	STARTE	D 11/4/2009	COMPLETED	11/4/2009 SI	JRF. EL	EV . 383	0	COORDIN	ATES:	N 1,117,955.52 E 2,410,167.44
		_							-	LE BEARING
										AYED
			er to well data sheet							
		motanou. Tron	or to won data onco.	•						
							_			
_	ပ				N O	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	s (ii	% ≿.	
DEPTH (ft)	GRAPHIC LOG	MA	TERIAL DESCRIPT	ION	ELEVATION	HET	E Di	BLOW COUNTS (N VALUE)	RECOVERY (RQD)	COMMENTS
	3R/ L				LEV	MPI	APL)	BL COI	SE	
					Ш	SA	SAN)	H	
		Sandy SILT	(MLS) to silty SAND	(SM)						
5										
· · · · · · · · · · · · · · · · · · ·										
10										
					368.5					
15		Damp, silty S	SAND (SM); dark greater single	eenish gray with		ss	14.5-	8-8-33		
		micaceous;	gneissic saprolite	ie grained,		-1	16.0	(41)		
										auger refusal.
		Bot	tom of borehole at 1	6.5 feet.						
20										

WELL CONSTRUCTION LOG PROJECT: Plant Scherer DRILLING CO.: SCS, Inc.

WELL CONSTRUCTION LOG	Southern Company Genera	ition	\\/\ <u>\</u>
PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.		WELL NAME
CCB Storage Facility LOCATION: Cell 1	DRILLER: Ranger RIG TYPE: CME 550		INAIVIE
LOGGER: Clanton	DRILLING METHODS: HSA		GWC-9
DATE CONSTRUCTED: 11/4/2009	DIVIDENING METHODS: HOA		GVVC-9
DATE CONCINCOTED. 1174/2003		DEPTH	ELEVATION
		FEET	FT, MSL
Locking Hinged Top	7		11,11102
1/4-inch Vent	TOP OF RISER	-2.99	386.01
1/4-inch Weep Hole	2" Threaded Riser Cap	-2.99	300.01
1/4-ITICIT Weep ITICIE	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad	T da Graver in annual space		
	GROUND SURFACE	0.00	383.02
	OKOOND SOKI ACE	0.00	000.02
	PROTECTIVE CASING		
	SIZE: 4x4-inch		
	TYPE: Anodized Aluminum		
	13/		
	BOTTOM OF PROTECTIVE CASING		
	Y		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 0.8		
	N		
Ø :	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
2	JOINT TYPE: Flush Threaded		
		0.40	000 50
[2]	TOP OF SEAL	2.49	380.53
▼ FL 070.00	ANNULAR SEAL		
▼ El. 379.82	TYPE: 1/4-inch coated bentonite pellets 5-gal buckets		
12/6/2009	5-gal buckets AMOUNT:		
D4 1	PLACEMENT: Tremie		
18 1	7 - 7	4.79	378.23
5	TOP OF FILTER PACK FILTER PACK	4.79	370.23
E	TYPE: DSI Sand - 1A (20/30)		
19	Drillers Services, Inc.		
	AMOUNT:		
3	PLACEMENT: Tremie; wash with water		
X			
X	BOTTOM OF RISER / TOP OF SCREEN	6.79	376.23
ĕ =	SCREEN		
X□	DIA: 2-inch		
101- 3	TYPE: Schedule 40 PVC Prepack		
© —	OPENING WIDTH: 0.01-inch		
X	OPENING TYPE: Slotted		
169	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch		
?⊏	BOTTOM OF SCREEN	16.79	366.23
X	2		
₫	BOTTOM OF CASING	17.09	365.93
100	<u> </u>		
HOLE D	IA: 9"		



			0.155	DI : -			- w
	RN COMPANY SERVICES, INC.						Facility
EAKIH S	CIENCE AND ENVIRONMENTAL ENGINEERING	LO	CATION	Cell 1			
DATE STAR	TED _11/3/2009	URF. EL	EV . 389	.3	COORDINA	ATES:	N 1,118,306.84 E 2,410,018.16
	OR SCS Field Services EQUIPMENT						
	S. Denty LOGGED BY W. Clanton						
	PTH 35.5 ft. GROUND WATER DEPTH: DURI						
NOTES W	ell installed. Refer to well data sheet.						
DEPTH (ft) GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
	Condu CILT (MLC) to city CAND (CM)		0)	ν)		ь.	
	Sandy SILT (MLS) to silty SAND (SM)						
_5							
_10							
45							
15							
		369.8					
20	Damp, silty SAND (SM); mottled green, orange, reddish brown, black, and light brownish yellow	<u> </u>	ss	19.5-	7-8-16		
	with laminations of pink SAND; fine grained; very micaceous		-1	21.0	(24)		



LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC. EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING PROJECT Plant Scherer CCB Storage Facility

LOCATION Cell 1 SAMPLE TYPE NUMBER SAMPLE DEPTH (ft.) ELEVATION RECOVERY 9 (RQD) GRAPHIC LOG DEPTH (ft) MATERIAL DESCRIPTION COMMENTS Damp, silty SAND (SM); mottled green, orange, reddish brown, black, and light brownish yellow with laminations of pink SAND; fine grained; very micaceous (Con't) 25 SS -2 24.5-7-12-21 26.0 (33)Damp, silty SAND (SM); mottled reddish brown, 30 SS 29.5-10-13-20 dark brown, reddish orange, white, and tan; fine -3 31.0 (33)grained; micaceous GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GP. Damp, silty SAND (SM); mottled green, reddish 35 SS 11-20-24 yellow, reddish brown, white, yellowish brown, 34.5-36.0 (44)and dark brown with shards of pink silica; fine

Bottom of borehole at 35.5 feet.

grained; micaceous

40

45

50

CB Storage Facility DRILLER: S. Denty DCATION: Cell 1 PIGCATION: Cell 1 PEPTH ELEVA FEET FT. FT. JOPOF FISER -3.38 JOYA -3.38 JOYA -4-Inch Weep Hole PROTECTIVE CASING SIZE: 4N4-Inch TYPE: Anodized Aluminum PROTECTIVE CASING SIZE: 4N4-Inch TYPE: Portland Cement Grout AMOUNT: 10 cubic feet PLACEMENT: Tremie TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded ANNULAR SEAL TYPE: 1/4-Inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand -1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF PROSEREN 21.39 JOYA SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WITH: 0.01-inch OPENING TYPE: Schedule 40 PVC Prepack OPENING WITH: 0.01-inch OPENING TYPE: Schedule 5 Solting Sciences 31.39 JOYA BOTTOM OF SCREEN	PROJECT: Plant Scherer	Southern Company Genera DRILLING CO.: SCS, Inc.	llion	WELL
DGGER: W. Clanton DRILLING METHODS: HSA ATE CONSTRUCTED: 11/3/09 DEPTH FEET FEET FACK Pea Gravel in annular space Pea Gravel in annular space Pea Gravel in annular space PROTECTIVE CASING SIZE: 434-inch TYPE: Anodized Aluminum BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASINO DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Schedule 40 PVC JOINT TYPE: Hish Threaded AMOUNT: 10 bucket AMOUN		·		NAME
DRILLING METHODS: HSA ATE CONSTRUCTED: 11/3/09 DEPTH FEET FT. TOP OF RISER -3.38 392 Alinch Weep Hole Pea Gravel in annular space FROUND SURFACE 0.00 386 PROTECTIVE CASING SIZE: 434-4inch TYPE: Anodized Aluminum BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 17.19 372 ANNULAR SEAL TYPE: IN-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: SIS Isand - 1A (20/30) Drillers Services, Inc. AMOUNT: 1 bugket PLACEMENT: Tremie: wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING WIDTH: 0.01-inch OPENING TYPE: Solted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357				INAIVIL
ATE CONSTRUCTED: 11/3/09 DEPTH ELEVA FEET FT.				GWC-10
DEPTH FEET FIX 14-Inch Vent. 4-Inch Went Hole TOP OF RISER -3-3.88 392 2" Threaded Riser Cap Pea Gravel in annular space RROUND SURFACE 0.00 385 PROTECTIVE CASING SIZE: 434-Inch TYPE: Anodized Aluminum BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 24-Inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 17.19 372 ANNULAR SEAL TYPE: 1/4-Inch coated bentonite pellets S-gal buckets PLACEMENT: Tremie TOP OF FILTER PACK 19.19 370 FILTER PACK TYPE: SIS Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-Inch DIA: 2-Inch DIA: 2-Inch DIA: 2-Inch DIA: 2-Inch DIA: 2-Inch SCREEN DIA: 2-Inch SCREEN DIA: 2-Inch DIA: 2-Inch SCREEN DIA: 2-I		DRIELING METHODO. HOA		000-10
peking Hinged Top 4-inch Vent 4-inch Weit 4-inch Weep Hole Pea Gravel in annular space GROUND SURFACE GROUND SURFACE O.00 385 PROTECTIVE CASING SIZE: 434-inch TYPE: Anodized Aluminum BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: Schedule 40 PVC FILTER PACK TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: SIS Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357	BITTE GOTTOTTEB. TITOTO		DEDTU	ELEVATION
Annular seal Type: Schedule 40 PVC Joint Type: Sland -14 (20/30) Drillers Services, inc. AMOUNT: 10 buckts PLACEMENT: Tremie Top of Filter Pack Type: DSI Sand -14 (20/30) Drillers Services, inc. AMOUNT: 10 buckt PLACEMENT: Tremie; wash with water BOTTOM OF RISER / Top OF SCREEN Type: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING WIDTH: 0.01-inch OPENING WIDTH: 0.01-inch OPENING WIDTH: 0.15-inch BOTTOM OF SCREEN 336 337 337 338 339 339 341 342 343 344 345 346 346 347 347 348 348 349 349 340 340 340 340 340 340				FT, MSL
4-inch Went. 4-inch Weep Hole Pea Gravel in annular space fit x 6-fit x 4" concrete pad 7 Threaded Riser Cap Pea Gravel in annular space FROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BACKFILL MATERIAL TYPE: Porland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Sheddule 40 PVC JOINT TYPE: Flush Threaded 7 TOP OF SEAL 7 TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie FILTER PACK TYPE: DSI Sand -1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie, wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING WIDTH: 0.01-inch OPENING TYPE: Solted SLOT SPACING: 0.25-inch SLOT LENGTH: 15-inch BOTTOM OF CASING 31.69 357	Locking Hinged Top			11,1102
4-inch Weep Hole fit x 6-fit x 4" concrete pad 2" Threaded Riser Cap Pea Gravel in annular space GROUND SURFACE 0.00 386 PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING DIA: 2-inch TYPE: Al-inch Coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DIS Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 1 formation TOP OF FILTER PACK TYPE: SIS Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357		TOP OF RISER	-3 38	392.68
Pea Gravel in annular space Pea Gravel in annular space GROUND SURFACE 0.00 388 PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 17.19 372 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357			-0.00	332.00
### A - Fix x 4" concrete pad PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum	174-ITIOT VVCCP TIOIC			
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 1 bucket PLACEMENT: Tremie; wash with water BOTTOM OF RISER/TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357	6-ft x 6-ft x 4" concrete pad	Tod Graver in difficulti opass		
PROTECTIVE CASING SIZE: 4X4-inch TYPE: Anodized Aluminum BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357		GROUND SURFACE	0.00	389.30
SIZE: 4x4-inch TYPE: Anodized Aluminum BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING TYPE: Slotted SLOT SPAGING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357	No.	GROSINE SCHI ZOZ	0.00	000.00
SIZE: 4x4-inch TYPE: Anodized Aluminum BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING TYPE: Slotted SLOT SPAGING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357		PROTECTIVE CASING		
TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING WIDTH: 0.01-inch OPENING TYPE: Stotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	\} \	Marine 1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (
BOTTOM OF PROTECTIVE CASING BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357		Market Strategies (1997)		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING TYPE: Schedule SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	▼ El. 386.36	- N 3/		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	12/6/2009	BOTTOM OF PROTECTIVE CASING		
TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357		N		
TYPE: Portland Cement Grout AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357				
AMOUNT: 10 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 17.19 372 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357		BACKFILL MATERIAL		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 17.19 372 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357		TYPE: Portland Cement Grout		
DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 17.19 372 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 19.19 370 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357		AMOUNT: 10 cubic feet		
DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 17.19 372 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 19.19 370 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357		N		
TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 17.19 372 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 19.19 370 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	2	RISER CASING		
JOINT TYPE: Flush Threaded TOP OF SEAL 17.19 372 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 19.19 370 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357		DIA: 2-inch		
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357		TYPE: Schedule 40 PVC		
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357		JOINT TYPE: Flush Threaded		
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357				
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357		N		
TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 19.19 370 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	2		17.19	372.11
5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 19.19 370 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357				
AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	104			
PLACEMENT: Tremie TOP OF FILTER PACK FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	R 3			
FILTER PACK FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF CASING 31.69 357	<u> </u>			
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	(24)		40.40	070 44
TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357			19.19	370.11
Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	:			
AMOUNT: 6 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	E			
PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357				
BOTTOM OF RISER / TOP OF SCREEN 21.39 367 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	*			
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	E	PLACEINEINT. Heilile, Wash with water		
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357		POTTOM OF DISEB / TOD OF SOREM	21 30	367.91
DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	2		۷1.33	307.81
TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357				
OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357				
OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357	*			
SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357 BOTTOM OF CASING 31.69 357				
SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 31.39 357				
BOTTOM OF SCREEN 31.39 357 BOTTOM OF CASING 31.69 357				
BOTTOM OF CASING 31.69 357	₩.		31.39	357.91
	S	BOTTOM OF SOILER	51.50	3001
	×	BOTTOM OF CASING	31.69	357.61
HOLE DIA: 9"	3	25115M 51 0/16M 6	2 30	33.101
HOLE DIA: 9"				
· · · · · · · · · · · · · · · · · · ·	HOI F	: DIA: 9"		
1 1	. 1022	•		

BORING GWC-11 PAGE 1 OF 2



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

SOI EAF	UTHERN RTH SCI	N COMPANY SI ENCE AND EN	ERVICES, INC. IVIRONMENTAL ENGINEERI		OJECT _			_	Facility
									_N 1,118,649.13 E 2,409,778.45
		_						_	LE BEARING
									AYED
NOIL	.o <u>wen</u>	mstalled. Neier	to well data sileet.						
					1			ı	<u> </u>
DEPTH (ft)	GRAPHIC LOG	MAT	ERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (N	MLS) to silty SAND (SM)			0)			
		Juliay OILT (N	ines, to only of the (own)						
5									
10									
15									
		Moiet eilty SA	ND (SM); mottled white, light	380.6					
		brown, orange	e, and black; fine grained;		SS -1	18.5-	6-7-10		
20		micaceous			-1	20.0	(17)		
	1111								



saprolite

LOG OF TEST BORING

LOCATION Cell 1

SOUTHERN COMPANY SERVICES, INC. EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility

6-14-18

(32)

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS		
25		Moist, silty SAND (SM); mottled white, light brown, orange, and black; fine grained; micaceous (Con't) Moist, silty SAND (SM); light brown with orange, green and black mottles; fine grained; micaceous; some gneissic saprolite		SS -2	23.5- 25.0	5-9-11 (20)				

SS

-3

369.

28.5-

30.0

Bottom of borehole at 30.0 feet.

Moist, silty SAND (SM); mottled white, black, and blackish green; fine grained; micaceous; gneissic

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

40

45

50

35

WELL CONSTRUCTION LOG

PROJECT: Plant Scherer

DRILLING CO.: SCS, Inc.

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.		WELL
CCB Storage Facility	DRILLER: Ranger		NAME
LOCATION: Cell 1	RIG TYPE: CME 550		
LOGGER: W. Clanton	DRILLING METHODS: HSA		GWC-11
DATE CONSTRUCTED: 11/3/09			
		DEPTH	ELEVATION
	_	FEET	FT, MSL
Locking Hinged Top			
1/4-inch Vent	TOP OF RISER	-3.13	402.19
1/4-inch Weep Hole	2" Threaded Riser Cap		
6 ft v 6 ft v 4" concrete pad	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad	CROUND CUREACE	0.00	399.06
	GROUND SURFACE	0.00	399.00
	PROTECTIVE CASING		
	SIZE: 4x4-inch		
	TYPE: Anodized Aluminum		
	N 3/		
	BOTTOM OF PROTECTIVE CASING		
	N		
l 2	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
▼ El. 387.70	AMOUNT: 7 cubic feet		
12/14/2009	RISER CASING		
12/14/2009	DIA: 2-inch		
0	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	TOP OF SEAL	16.50	382.56
1 10	ANNULAR SEAL		
l 🖼	TYPE: 1/4-inch coated bentonite pellets		
l Ma	5-gal buckets		
I (54)	AMOUNT: 1 bucket PLACEMENT: Tremie		
l 🔞	TOP OF FILTER PACK	19.00	380.06
16	FILTER PACK	10.00	000.00
120	TYPE: DSI Sand - 1A (20/30)		
🔀	Drillers Services, Inc.		
©	AMOUNT: 5 bags		
l 🔉	PLACEMENT: Tremie; wash with water		
l ⊠	8	04.00	070.00
🔼	BOTTOM OF RISER / TOP OF SCREEN	21.00	378.06
185 -	SCREEN DIA: 2-inch		
192	TYPE: Schedule 40 PVC Prepack		
18 -	OPENING WIDTH: 0.01-inch		
 <u>Q</u>-	OPENING TYPE: Slotted		
🔀	SLOT SPACING: 0.25-inch		
 	SLOT LENGTH: 1.5-inch		
X	BOTTOM OF SCREEN	31.00	368.06
18		04.55	007 ==
192.	BOTTOM OF CASING	31.30	367.76
	20		
HOLE	DIA · 0"		
HOLE	uin. a		
]



		MATE WINE							
SOI	UTHERN	COMPANY SE	ERVICES, INC.						Facility
EAI	KIH SCIE	NCE AND EN	VIRONMENTAL ENGINE	EKING L(CATION	Cell 1			
DATE	STARTE	11/3/2009	COMPLETED 11/3/200	9 SURF. EL	.EV . 409	.5	COORDINA	ATES:	N 1,118,978.20 E 2,409,554.10
			EQUI						
		_							ILE BEARING
									AYED
			to well data sheet.					_	
DEPTH (ft)	GRAPHIC LOG	MATI	ERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
	/////		AV (01)		0,	Ś		<u> </u>	
		and light brown	AY (CL); mottled orange, bl n; micaceous	аск					
5									
10									
15									
									-
					SS -1	18.5- 20.0	17-11-3 (14)		
20							(/		
	<i>V////</i>				1	ĺ		1	1



LOG OF TEST BORING

SOU	SOUTHERN COMPANY SERVICES, INC.			PROJECT Plant Scherer CCB Storage Facility							
EAF	RTH SC	ZIENCE AND ENVIRONMENTAL ENGINEERING	G LOCATION Cell 1								
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS			
25		Wet, clayey SAND (SC); mottled ornge, white, tan and black; fine grained; micaceous	386.0	SS -2	23.5- 25.0	5-6-7 (13)					
30		Wet, clayey SAND (SC); mottled ornge, white and tan with sparse black organics; fine grained; micaceous		SS -3	28.5- 30.0	7-11-15 (26)					
40		Bottom of borehole at 33.5 feet.	376.0								
35				SS -4	33.5- 35.0	6-11-8 (19)					
40	_										
45	-										
50											

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.		WELL
CCB Storage Facility LOCATION: Cell 1	DRILLER: Ranger RIG TYPE: CME 550		NAME
LOGGER: W. Clanton	DRILLING METHODS: HSA		GWC-12
DATE CONSTRUCTED: 11/3/09	DIVIDENTIONS TION		000-12
27112 00110111001231 1170700		DEPTH FEET	ELEVATION FT, MSL
Locking Hinged Top	TOP OF RISER	-3.21	412.75
1/4-inch Weep Hole	2" Threaded Riser Cap	-	
6-ft x 6-ft x 4" concrete pad	Pea Gravel in annular space	0.00	400.54
	GROUND SURFACE	0.00	409.54
	PROTECTIVE CASING		
	SIZE: 4x4-inch		
	TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	BACKFILL MATERIAL		
8	TYPE: Portland Cement Grout		
	AMOUNT: 8.5 cubic feet		
▼ El. 392.88	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
2	TOP OF SEAL	20.12	389.42
19	ANNULAR SEAL TYPE: 1/4 inch costed bentonite pollete		
8	TYPE: 1/4-inch coated bentonite pellets 5-gal buckets		
18	AMOUNT: 1 bucket		
150	PLACEMENT: Tremie		
2	TOP OF FILTER PACK	22.22	387.32
8	FILTER PACK TYPE: DSI Sand - 1A (20/30)		
12	Drillers Services, Inc.		
8	AMOUNT: 5 bags		
2	PLACEMENT: Tremie; wash with water		
:	BOTTOM OF RISER / TOP OF SCREEN	24.22	385.32
∑	SCREEN	21.22	000.02
₩.	DIA: 2-inch		
	TYPE: Schedule 40 PVC Prepack		
X	OPENING WIDTH: 0.01-inch		
15 6	OPENING TYPE: Slotted SLOT SPACING: 0.25-inch		
X	SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
₩.	BOTTOM OF SCREEN	34.22	375.32
ž.	BOTTOM OF CASING	34.52	375.02
		- · · · · · ·	
H∩I F	DIA: 9"		
. IOLE			



COLUM	HEDNI GOV	AANV CEDVICES INS	PR	OJECT	Plant So	cherer CCB St	orage	Facility
EART	HERN COMI H SCIENCE A	PANY SERVICES, INC. AND ENVIRONMENTAL ENC		CATION				1 domey
DATE 6-	ADTED 445	00000	2/2020	- 1	_	000000		N.4.440.000.00 F.0.400.000.74
	-							N 1,119,338.88 E 2,409,390.71
								LE BEARING
								AYED
							-	
DEPTH (ft) GRAPHIC	907	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
	Sandy	SILT (MLS) to silty SAND (SM)					
_								
5								
10								
15								
			398.0					
	SILT (I	ML); brownish yellow with black eous with large flakes of mica		ss	18.5-	7-5-6		
20		Total Maria go nanoo oi iilloa		-1	20.0	(11)		
1 1	1 1 1				1		i	1



LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility

LOCATION Cell 1

EAI	EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING		G LOCATION					
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
25	-	SILT (ML); brownish yellow with black mottles; micaceous with large flakes of mica (Con't) Damp, SILT (ML) and silty SAND (SM); mottled light brown, black, orange and white; micaceous		SS -2	23.5- 25.0	4-7-11 (18)		
30		Very damp, SILT (ML) with very fine grain silty SAND (SM); mottled black and dark brown; micaceous Damp, SILT (ML) with very fine grain silty SAND (SM); mottled light brown, black, orange and	386.5	SS -3	29.5- 31.0	6-8-11 (19)		
RE\SCHERER GYP.G		white; micaceous Very damp, silty SAND (SM); mottled white, tan, orange, and black; fine grained; micaceous		SS -4	33.5- 35.0	12-16-20 (36)		
ESSEE MAJOR PROJECTSIGINT SOFTWAREISCHERER GYP.GPJ								
E MAJOR PRO		Very damp, silty SAND (SM); mottled white, tan, and black; fine grained; micaceous Bottom of borehole at 39.5 feet.	377.0	SS -5	38.5- 40.0	5-9-12 (21)		
#S 40	1	bottom of borefiole at 59.5 feet.					-	
95:1								
1/10 1/2								
Т - 4/2								
\SE.GL								
vg 45 45								
GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T.\ O								
LOGS								
EERING								
ENGIN								
50								
ĕ								

WELL CONSTRUCTION LOG	1 2	ition	\//=LI
PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.		WELL
CCB Storage Facility	DRILLER: Ranger		NAME
LOCATION: Cell 1	RIG TYPE: CME 550		0)4/0,40
LOGGER: W. Clanton	DRILLING METHODS: HSA		GWC-13
DATE CONSTRUCTED: 11/2/09			
		DEPTH	ELEVATION
		FEET	FT, MSL
Locking Hinged Top			
1/4-inch Vent	TOP OF RISER	-3.04	419.58
1/4-inch Weep Hole	2" Threaded Riser Cap		
	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
	GROUND SURFACE	0.00	416.54
	GROUND SURFACE	0.00	410.54
<i>i</i> ;	PROTECTIVE CASING		
`	2. 利能には - 10. 10. 10. 10. 10. 11. 11. 11. 11. 11.		
	SIZE: 4x4-inch		
	TYPE: Anodized Aluminum		
	& / N3/		
	BOTTOM OF PROTECTIVE CASING		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 11.25 cubic feet		
	RISER CASING		
	DIA: 2-inch		
▼ El. 392.38	TYPE: Schedule 40 PVC		
12/14/2009	JOINT TYPE: Flush Threaded		
12/14/2000	JOINT TITE. Flash Micaded		
	TOP OF SEAL	25.69	390.85
		25.05	390.03
	ANNULAR SEAL		
	TYPE: 1/4-inch coated bentonite pellets 5-gal buckets		
	AMOUNT: 1 bucket		
	PLACEMENT: Tremie		
	TOP OF FILTER PACK	27.69	388.85
	FILTER PACK		
	TYPE: DSI Sand - 1A (20/30)		
	Drillers Services, Inc.		
	+ + AMOUNT: 5 bags		
	PLACEMENT: Tremie; wash with water		
	X 2		
	BOTTOM OF RISER / TOP OF SCREEN	29.99	386.55
	SCREEN		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC Prepack		
	+ + OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch		
		30 00	376.55
	BOTTOM OF SCREEN	39.99	370.55
		40.00	276.05
	BOTTOM OF CASING	40.29	376.25
	HOLE DIA: 9"		

BORING GWC-14 PAGE 1 OF 2



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

SO EAI	UTHE RTH S	ERN COMPANY SE SCIENCE AND EN	ERVICES, INC. VIRONMENTAL ENGINEERIN		OJECT _		cherer CCB St	orage	Facility
DATE	STAF	RTED 11/4/2009	COMPLETED 11/4/2009				COORDINA	ATES:	N 1,119,655.06 E 2,409,111.27
									14 1,110,000.00 E 2,700,111.27
									LE BEARING
									AYED
		Vell installed. Refer						_ DLL/	
NOIL	.5 <u>v</u>	veli iristalied. Nelei	to well data sheet.						
		T							T
DEPTH (ft)	GRAPHIC LOG	МАТІ	ERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (M	ILS) to silty SAND (SM)			0)			
		Januy Sili (IV	ILO, IO SIILY OMIND (OIVI)						
5									
		1							
		<u>\frac{1}{2}</u>							
10]							
15									
. 10									
		:							
				381.8					
		Moist, silty SAI	ND (SM); greenish black, white, bwn; fine grained; micaceous		ss	18.5-	5-8-13		
20		yenow, and bic	wii, iilie grailieu, micaceous		-1	20.0	(21)		
. = 7									
		:]							
]							





LOG OF TEST BORING

PROJECT Plant Scherer CCB Storage Facility SOUTHERN COMPANY SERVICES, INC. EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING **LOCATION** Cell 1 SAMPLE DEPTH (ft.) SAMPLE TYPE NUMBER % ELEVATION RECOVERY 9 (RQD) GRAPHIC LOG BLOW COUNTS (N VALUE) DEPTH (ft) MATERIAL DESCRIPTION COMMENTS Moist, silty SAND (SM); greenish black, white, yellow, and brown; fine grained; micaceous (Con't) 375.3 25 Bottom of borehole at 25.0 feet. 30 GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ 35 40 45 50

PROJECT: Plant Scherer	Southern Company Genera DRILLING CO.: SCS, Inc.	111011	WELL
CCB Storage Facility	DRILLER: Ranger		NAME
LOCATION: Cell 1	RIG TYPE: CME 550		TV WIL
LOGGER: W. Clanton	DRILLING METHODS: HSA		GWC-14
DATE CONSTRUCTED: 11/4/09			
		DEPTH	ELEVATION
		FEET	FT, MSL
Locking Hinged Top			
1/4-inch Vent	TOP OF RISER	-3.16	403.41
1/4-inch Weep Hole	2" Threaded Riser Cap		
	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
	GROUND SURFACE	0.00	400.25
	PROTECTIVE CASING		
	SIZE: 4x4-inch		
	TYPE: Anodized Aluminum		
	N3/		
	BOTTOM OF PROTECTIVE CASING		
Ø	DACKEN I MATERIAL		
2	BACKFILL MATERIAL		
9	TYPE: Portland Cement Grout		
	AMOUNT: 4.05 cubic feet		
	RISER CASING		
	DIA: 2-inch		
▼ El. 392.47	TYPE: Schedule 40 PVC		
<u>v</u> Li. 332.47 1/6/2010	JOINT TYPE: Flush Threaded		
170/2010	JOHN THE HUSH HIICAGG		
8	TOP OF SEAL	10.07	390.18
Na in the second second second second second second second second second second second second second second se	/ANNULAR SEAL		
S	TYPE: 1/4-inch coated bentonite pellets		
(M)	5-gal buckets		
R	AMOUNT: 1 bucket		
199	PLACEMENT: Tremie		
Q l	TOP OF FILTER PACK	12.17	388.08
X	FILTER PACK		
8	TYPE: DSI Sand - 1A (20/30)		
⊠	Drillers Services, Inc.		
×	AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
i i i	PLACEMENT: Tremie; wash with water		
12	POTTOM OF DISER / TOD OF SOREIN	14.07	386.18
₩-	BOTTOM OF RISER / TOP OF SCREEN SCREEN	14.01	300.10
⊠ -	DIA: 2-inch		
R⊡	TYPE: Schedule 40 PVC Prepack		
8-	OPENING WIDTH: 0.01-inch		
i © ⊢	OPENING TYPE: Slotted		
5 2⊏	SLOT SPACING: 0.25-inch		
8—	SLOT LENGTH: 1.5-inch		
⊠ -	BOTTOM OF SCREEN	24.07	376.18
197	3		1 30
×	BOTTOM OF CASING	24.37	375.88
<u>Go</u>			
HOLE D	DIA: 9"		

BORING GWA-15 PAGE 1 OF 2



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

	RN COMPANY SI CIENCE AND EN	ERVICES, INC. IVIRONMENTAL ENGINEERIN		OJECT _		cherer CCB S	torage	Facility
						COORDIN	ATES:	N 1,120,009.78 E 2,409,282.00
	-							LE BEARING
								AYED
NOIES W	eli iristalled. Refer	to well data sheet.						
<u> </u>				1				
DEPTH (ft) GRAPHIC LOG	MAT	ERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
	Sandy SILT /	MLS) to silty SAND (SM)			0)			
	Salidy SILT (II	ILS) to sitty SAND (SIVI)						
5								
[]]]]								
_10								
15								
	Moist, SILT (M	ML) with silty SAND (SM); yellowish	า		10.5	40.40.45		
	orange with bla	ack mottles; fine grained;		SS -1	18.5- 20.0	10-10-15 (25)		
20	modocous					` '		
	Moist silty CA	ND (SM): mottled light brown	389.8	-				
		ND (SM); mottled light brown,						





LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility

LOCATION Cell 1

DEPTH (ft) GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS	
25	Moist, silty SAND (SM); mottled light brown, orange, and black; fine grained; micaceous (Con't)	386.8	SS -2	23.5- 25.0	6-9-18 (27)			
	Pottom of harabala at 25 0 foot							

Bottom of borehole at 25.0 feet.

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT -4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

40

45

50

30

35

DATE CONSTRUCT 11/4/2009 DEPTH FEET FEET FEET FEET FEET	WELL
LOCATION: Cell 1 RIG TYPE: CME 550 LOGGER W. Clanton DATE CONSTRUCT 11/4/2009 DEPTH FEET	NAME
DATE CONSTRUCT 11/4/2009 DEPTH FEET	
DEPTH FEET 1/4-inch Vent 1/4-inch Weep Hole 2" Threaded Riser Cap Pea Gravel in annular space 6-ft x 6-ft x 4" concrete pad PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING PROTECTIVE CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded ANNULAR SEAL TYPE: Flush Threaded TOP OF SEAL 11.69 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	GWA-15
Locking Hinged Top 1/4-inch Vent 1/4-inch Weep Hole. 6-ft x 6-ft x 4" concrete pad Pea Gravel in annular space Pea Gravel in annular space Protective Casing Size: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING Size: 4x4-inch TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 11.69 ANNULAR SEAL TYPE: I/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
Locking Hinged Top 1/4-inch Vent 1/4-inch Weep Hole 6-ft x 6-ft x 4" concrete pad PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING PROTECTIVE CASING BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 11.69 ANNULAR SEAL TYPE: JOINT TYPE: In Joint Coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	LEVATION
1/4-inch Vent 1/4-inch Weep Hole Pea Gravel in annular space 3.00 PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING PROTECTIVE CASING SIZE: 4x4-inch TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	FT, MSL
2" Threaded Riser Cap Pea Gravel in annular space Ground Surface 0.00 PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 7 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
Pea Gravel in annular space Ground Surface 0.00 PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	414.82
GROUND SURFACE O.00 PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING BACKFILL MATERIAL TYPE: Porland Cement Grout AMOUNT: 4.5 cubic feet PISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	411.82
SIZE: 4x4-inch TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: Il-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	411.02
TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 11.69 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DIS Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
AMOUNT: 4.5 cubic feet RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN BOTTOM OF RISER / TOP OF SCREEN BOTTOM OF RISER / TOP OF SCREEN TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 11.69 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
JOINT TYPE: Flush Threaded TOP OF SEAL 11.69 ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 13.94 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 13.94 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 13.94 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	400.13
TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 13.94 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
AMOUNT: 1 bucket PLACEMENT: Tremie TOP OF FILTER PACK 13.94 FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
PLACEMENT: Tremie TOP OF FILTER PACK FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
FILTER PACK FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	397.88
Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
AMOUNT: 5 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
BOTTOM OF RISER / TOP OF SCREEN 16.19 SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	395.63
TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch	
OPENING WIDTH: 0.01-inch	
OPENING TYPE: Slotted	
SLOT SPACING: 0.25-inch	
SLOT LENGTH: 1.5-inch	
BOTTOM OF SCREEN 26.19	385.63
BOTTOM OF CASING 26.49	385.33
HOLE DIA: 9"	

BORING GWA-16 PAGE 1 OF 3



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

SO EAL	UTHERI RTH SCI	N COMPANY SEI ENCE AND ENV	RVICES, INC. /IRONMENTAL	ENGINEERING						Facility
DATE	STARTI	ED 10/13/2009	COMPLETED	10/13/2009	SURF. ELI	EV . 440	.7	COORDIN	ATES:	N 1,120,248.79 E 2,409,579.59
										LE BEARING
										AYED
			o well data sheet.							
DEPTH (ft)	GRAPHIC LOG	MATE	RIAL DESCRIPT	ION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MI	S) to silty SAND	(SM)						
5										
10										
15										
		Cilty CAND (CA	1), mattled	and blast fin	421.2					
20		grained; micace	l); mottled orange eous	and black; fine		SS -1	19.5- 21.0	3-3-4		
							∠1.0	(7)		



LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.

EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

LOCATION Cell 1

"	EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING			CATION	Cell 1			
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Silty SAND (SM); mottled orange and black; fine grained; micaceous (Con't)						
		g						
25				SS -2	24.5- 26.0	3-3-6 (9)		
				-2	20.0	(9)		
30		Silty SAND (SM) with trace amounts of light						
		brown CLAY (CL); mottled orange, light yellowish brown and black; fine grained; micaceous		SS -3	29.5- 31.0	2-3-4 (7)		
_		•						
ΥΡ. Θ.								
ΑΉ (Σ								
			400.0					
NESEE MAJOR PROJECTS/GINT SOF TWARE/SCHERER GYP/GPJ		☐ Clayey silty SAND (SC-SM); mottled light brown, black and white; fine grained; micaceous; pyrite	406.2	ss	34.5-	3-3-4		
SOFT		present; gneissic saprolite		-4	36.0	(7)		
LNIS)(GINT								
SECTS								
ж РКО 								
MAJ0			401.2					
40		SAND (SP); mottled black, white and orange; saprolite		SS	39.5-	6-9-11		
				-5	41.0	(20)		
4/2								
SE.GL								
45 45								
SEED				SS -6	44.5- 46.0	12-15-19 (34)		
9 8 8 8								
<u>ๆ</u> ย								
Ä								
ENG 								
GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT -4/27/10 11:56		SAND (SP); mottled black, white and orange; saprolite; harder than above		SS -7	49.5- 51.0	23-36-43 (79)		



LOG OF TEST BORING PROJECT Plant Scherer CCB Storage Facility SOUTHERN COMPANY SERVICES, INC. EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING **LOCATION** Cell 1 SAMPLE DEPTH (ft.) SAMPLE TYPE NUMBER ELEVATION RECOVERY 9 (RQD) GRAPHIC LOG DEPTH (ft) MATERIAL DESCRIPTION COMMENTS SAND (SP); mottled black, white and orange; saprolite (Con't) SS 54.5-50/4" 55 385.7 auger refusal. 54.8 (100+)Bottom of borehole at 55.0 feet. GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ 60 65 70 75

WELL CONSTRUCTION LOG	Southern Company Genera	ition	T
PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.		WELL
CCB Storage Facility	DRILLER: Phillip Smith		NAME
LOCATION: Cell 1	RIG TYPE: CME 550		
LOGGER: D. Brooks	DRILLING METHODS: HSA		GWA-16
DATE CONSTRUCTED: 10/13/09			
		DEPTH	ELEVATION
		FEET	FT, MSL
Locking Hinged Top			
1/4-inch Vent	TOP OF RISER	-3.32	444.06
1/4-inch Weep Hole	2" Threaded Riser Cap	0.02	444.00
1/4 mon vecp hold	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad	Tod Graver in difficult opuse		
To the A to the A to the factor of the A to the	GROUND SURFACE	0.00	440.74
	GROUND SURFACE	0.00	440.74
	PROTECTIVE CASING		
	Max (1984) 1 (1974)		
	SIZE: 4x4-inch		
	TYPE: Anodized Aluminum		
	N9		
	BOTTOM OF PROTECTIVE CASING		
	N		
	N		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 18 cubic feet		
1	RISER CASING		
▼ El. 410.16	DIA: 2-inch		
12/1/2009	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	N		
	TOP OF SEAL	39.70	401.04
1 🔞	ANNULAR SEAL		
1 10	TYPE: 1/4-inch coated bentonite pellets		
 	5-gal buckets		
	AMOUNT: 1 bucket		
l M	PLACEMENT: Tremie		
1 19	TOP OF FILTER PACK	42.20	398.54
j koj	FILTER PACK		
128	TYPE: DSI Sand - 1A (20/30)		
₩	Drillers Services, Inc.		
851	AMOUNT: 5 bags		
12	PLACEMENT: Tremie; wash with water		
🔀			
🔀	BOTTOM OF RISER / TOP OF SCREEN	44.20	396.54
j k o t	SCREEN		
1921	DIA: 2-inch		
24	TYPE: Schedule 40 PVC Prepack		
 125 -	OPENING WIDTH: 0.01-inch		
j k o t	OPENING TYPE: Slotted		
52	SLOT SPACING: 0.25-inch		
25	SLOT LENGTH: 1.5-inch		
K S I	BOTTOM OF SCREEN	54.20	386.54
IS	BOTTOM OF SOREEN	01.20	300.04
🔀	BOTTOM OF CASING	54.50	386.24
24	DOTTOWICE CASING	U T. UU	555.24
	500		
ЦОГЕ	DIA: 9"		
HOLE	DIA. 3		
			1

BORING GWA-17 PAGE 1 OF 2



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

			_					
SOU EAR	JTH TH	HERN COMPANY SERVICES, INC. I SCIENCE AND ENVIRONMENTAL ENGINEERING		OJECT _ CATION __				Facility
		ARTED 9/28/2009 COMPLETED 9/28/2009 SUR						N 1,120,211.10 E 2,409,946.33
CONT	RAC	CTOR SCS Field Services EQUIPMENT CI	ME-55	<u>50X</u> MET	HOD _	Hollow Stem A	uger	
DRILL	ED I	BY S. Denty LOGGED BY J. Jordan	CHE	CKED BY	R. Tin	sley	ANG	LE BEARING
BORIN	IG D	DEPTH 43.3 ft. GROUND WATER DEPTH: DURING			COMP.		DEL/	AYED
NOTE	s _	Well installed. Refer to well data sheet.						
DEPTH (ft)	GRAPHIC	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Dark red, sandy LEAN CLAY (CL)						Auger cuttings used for soil classifications from 0-20 ft
5		SILT (ML), yellowish red, micaceous, trace of fine sand	139.2					
10								
15								
20		Sandy, dry, yellowish brown, with black stringers		SS -1	19.5- 21.0	2-3-4 (7)		
						(-,		



50

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.

PROJECT Plant Scherer CCB Storage Facility

EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING **LOCATION** Cell 1 SAMPLE TYPE NUMBER SAMPLE DEPTH (ft.) ELEVATION RECOVERY 9 (RQD) GRAPHIC LOG DEPTH (ft) MATERIAL DESCRIPTION COMMENTS SILT (ML), yellowish red, micaceous, trace of fine sand (Con't)418.2 White to light olive brown, medium dense, SILTY 25 SS -2 24.5-7-11-10 SAND (SM), with relict structure and reddish black stringers 26.0 (21)30 SS 29.5-17-28-34 Very dense, moist 31.0 (62)GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT -4/27/10 11:56 - T\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ SS 34.5-50/4" 35 34.8 (100+)**SAPROLITE** SS -5 39.5**-**39.8 50/4" 40 (100+)Saturated Auger refusal at 43.3 feet. 399.4 Bottom of borehole at 43.3 feet. 45

DDO IFOT: Dignt Schorer		lion	\\/\\
PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.		WELL
CCB Storage Facility	DRILLER: Denty		NAME
LOCATION: Cell 1	RIG TYPE: CME 550		0)4/4 47
LOGGER: Jordan	DRILLING METHODS: HSA		GWA-17
DATE CONSTRUCTED: 9/28/09	,		
		DEPTH	ELEVATION
		FEET	FT, MSL
Locking Hinged Top	→ □		
1/4-inch Vent	TOP OF RISER	-2.91	445.63
1/4-inch Weep Hole	2" Threaded Riser Cap		
	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad	\		
	GROUND SURFACE	0.00	442.72
	GROUND SURFACE	0.00	772.72
	PROTECTIVE CASING		
	SIZE: 4x4-inch		
	TYPE: Anodized Aluminum		
	TTPE. Allouized Aluminum		
	SI NY		
	BOTTOM OF PROTECTIVE CASING		
	N PAGNETT MATERIAL		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 13.25 cubic feet		
	0 N		
	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	TOP OF SEAL	28.55	414.17
	ANNULAR SEAL		
	TYPE: 1/4-inch coated bentonite pellets		
	5-gal buckets		
	AMOUNT: 1 bucket		
▼ El. 412.35	PLACEMENT: Tremie		
12/10/2009	TOP OF FILTER PACK	30.55	412.17
	FILTER PACK	<u></u>	
	TYPE: DSI Sand - 1A (20/30)		
	Drillers Services, Inc.		
	+ AMOUNT: 5 bags		
	PLACEMENT: Tremie; wash with water		
	25 121 I		
	BOTTOM OF RISER / TOP OF SCREEN	33.55	409.17
	SCREEN		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC Prepack		
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	43.55	399.17
	X O		
	BOTTOM OF CASING	43.85	398.87
			1
	HOLE DIA: 9"		



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

COT	ייין ודין	N COMPANY SERVICES, INC.	PR	OJECT	Plant So	cherer CCB St	orage	Facility
		N COMPANY SERVICES, INC. IENCE AND ENVIRONMENTAL ENGINEERI						
		ED 9/29/2009 COMPLETED 9/29/2009						
		R SCS Field Services EQUIPME						
		S. Denty LOGGED BY J. Jordan						
		TH 59.5 ft. GROUND WATER DEPTH: DI					_ DELA	AYED
NOTE	S <u>We</u>	ll installed. Refer to well data sheet.						
						T		
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		LEAN CLAY (CL), silty, red, trace fine sand						
								Auger cuttings used for classifications from 0 -19.5 feet.
		One die er eilder wegind verlaggisch und						
5		Grading silty, moist, yellowish red						
10								
		Strong brown						
15								
			408.8					
20		Firm, strong brown SILT (ML), with yellowish re	400. 0	ss	19.5-	2-3-2		
		layers, moist		-1	21.0	(5)		



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility

LOCATION Cell 1

2211			SIEI GE MID EIVIROIMEITHE ENGINEERING	G LOCATION C		Cell I			
DEPTH (ft)	GRAPHIC	FOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
			Firm, strong brown SILT (ML), with yellowish red layers, moist (Con't)						
25			Medium dense, reddish yellow SILTY SAND (SM), with weathered rock	<u>403.</u> 8		04.5	2.5.0		
			(SM), with weathered rock		SS -2	24.5- 26.0	3-5-8 (13)		
30			Dark olive, white, and orange speckled SAPROLITE		SS -3	29.5- 31.0	4-5-8 (13)		"Salt and pepper" appearance.
			SAPROLITE				(10)		
35			Dark olive and white		SS -4	34.5- 36.0	5-6-5 (11)		
40					99	39.5-	7-8-10		
					SS -5	41.0	(18)		
				383.8					
45		1	Alternating zones of olive, black, and white and zones of micaceous, strong brown SANDY SILT (ML) SAPROLITE, very moist	_000.0	SS -6	44.5-	3-5-9		
			(ML) SAPROLITE, very moist		-o	46.0	(14)		
50			Gold, yellowish red, and dark olive, thinly layered		SS -7	49.5- 51.0	6-16-9 (25)		Free water in rods.



70

75

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.

PROJECT Plant Scherer CCB Storage Facility

EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING **LOCATION** Cell 1 SAMPLE TYPE NUMBER SAMPLE DEPTH (ft.) ELEVATION RECOVERY 9 (RQD) GRAPHIC LOG DEPTH (ft) MATERIAL DESCRIPTION COMMENTS with white nodules of weathered calcite Alternating zones of olive, black, and white and zones of micaceous, strong brown SANDY SILT (ML) SAPROLITE, very moist (Con't) 55 SS -8 54.5-12-17-21 56.0 (38)Boring terminated at 61 feet. GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GP. 60 SS 19-30-48 59.5--9 61.0 (78)367.3 Bottom of borehole at 59.5 feet. 65

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	ition	WELL
CCB Storage Facility	DRILLER: Denty		NAME
LOCATION: Cell 1	RIG TYPE: CME 550		INAIVIL
LOGGER: Jordan	DRILLING METHODS: HSA		GWC-18
DATE CONSTRUCTED: 9/29/09	Britzenio Merriobo. Hori		0110 10
		DEPTH	ELEVATION
		FEET	FT, MSL
Locking Hinged Top			,
1/4-inch Vent	TOP OF RISER	-3.28	439.64
1/4-inch Weep Hole	2" Threaded Riser Cap	0.20	100.01
*	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
	GROUND SURFACE	0.00	436.36
No.	<u> </u>		
Y. J	PROTECTIVE CASING		
	SIZE: 4x4-inch		
	TYPE: Anodized Aluminum		
	N /		
	BOTTOM OF PROTECTIVE CASING		
12	N		
	DACKELL MATERIAL		
	TYPE: Portland Cement Grout		
▼ El. N/A	AMOUNT: 20 cubic feet		
1/12/2010	ANIOUNT. 20 cubic leet		
	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	N		
2	TOP OF SEAL	42.89	393.47
19	ANNULAR SEAL		
(2 <u>4</u>	TYPE: 1/4-inch coated bentonite pellets		
M	5-gal buckets		
[5]	AMOUNT: 1 bucket PLACEMENT: Tremie		
8	TOP OF FILTER PACK	44.89	391.47
	FILTER PACK	44.03	391.47
E	TYPE: DSI Sand - 1A (20/30)		
.	Drillers Services, Inc.		
	AMOUNT: 5 bags		
	PLACEMENT: Tremie; wash with water		
X			
1	BOTTOM OF RISER / TOP OF SCREEN	46.81	389.55
•	SCREEN		
	DIA: 2-inch		
.	TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch		
E	OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted		
(2)	SLOT SPACING: 0.25-inch		
Ţ.	SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	56.81	379.55
X	•		1 3.30
X	BOTTOM OF CASING	57.11	379.25
	• • •		
-			
HOLE	E DIA: 9"		



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

		D-	O IECT	Dloot C	shorer CCD O	toroa- 5	Socility
	ERN COMPANY SERVICES, INC. SCIENCE AND ENVIRONMENTAL ENGINEERIN						Facility
		- LO	CALION				
	RTED 10/2/2009 COMPLETED 10/2/2009						
	FOR SCS Field Services EQUIPMEN						
	Y S. Denty LOGGED BY L. Millet						
	EPTH 70 ft. GROUND WATER DEPTH: DUI					_ DELA	YED
NOTESW	Vell installed. Refer to well data sheet.						
	I			_			
DEPTH (ft) GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Sandy SILT (MLS) to silty SAND (SM)		0,	σ,			
	Samuy SILT (WILS) to SIRLY SAIND (SIVI)						
5							
10							
-10 -							
15							
		406.0					
20	Dry, silty SAND (SM); red with occassional white	406.6	ss	19.5-	2-3-2		
	lenses and black mottles; very fine to fine grained; micaceous; friable		-1	21.0	(5)		
1144						1 1	



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility

LOCATION Cell 1

l	EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING				CATION	Cell 1			
	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
[Dry, silty SAND (SM); red with occassional white lenses and black mottles; very fine to fine grained; micaceous; friable (Con't)						
-	25				SS -2	24.5- 26.0	3-2-3 (5)		
-									
-									
-	30				SS -3	29.5- 31.0	4-4-6 (10)		
7	35		Dry, clayey SAND (SC); mottled green, black and light orangish brown; very fine to fine grained; micaceous; soft; gneissic saprolite	391.6	SS -4	34.5- 36.0	4-5-7 (12)		
			micaccas, son, griciosio saprono				. ,		
	• • • • • •								
	40		Dry, clayey SAND (SC); green, black and white with occassional dark orange mottling; very fine		V ss	39.5-	4-6-8		
			to fine grained; micaceous; soft; gneissic saprolite		-5	41.0	(14)		
. ISSECT L	45								
. ESEE L					SS -6	44.5- 46.0	8-8-16 (24)		
	50		Dry, clayey SAND (SC); white and dark tan; very fine to medium grained; micaceous; soft;		SS -7	49.5- 51.0	18-25-25 (50)		



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GP.

LOG OF TEST BORING

PROJECT Plant Scherer CCB Storage Facility SOUTHERN COMPANY SERVICES, INC. EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING **LOCATION** Cell 1 SAMPLE TYPE NUMBER SAMPLE DEPTH (ft.) % ELEVATION RECOVERY 9 (RQD) GRAPHIC LOG DEPTH (ft) MATERIAL DESCRIPTION COMMENTS gneissic saprolite Dry, clayey SAND (SC); mottled green, black and light orangish brown; very fine to fine grained; micaceous; soft; gneissic saprolite (Con't) 55 Dry, clayey SAND (SC); white and black with SS -8 21-35-49 dark orange mottling; very fine to medium grained; micaceous 54.5-56.0 (84)SS 59.5-50/4" 60 -9 59.8 (100+)361.6 64.5-50/1" Moist, sandy CLAY (CS); black and grey; sparse SS 65 64.6 (100+)mica; soft 356.6 69.5-69.7 Clayey SAND (SC); light brown and black with SS 50/2" 70 356.1 <u>(10</u>0+) orange mottling; very fine to medium grained; micaceous Bottom of borehole at 70.0 feet. 75

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.		WELL
CCB Storage Facility	DRILLER: Denty		NAME
LOCATION: Cell 1	RIG TYPE: CME 550		011/0 /0
LOGGER: Millet	DRILLING METHODS: HSA		GWC-19
DATE CONSTRUCTED: 10/2/09			
		DEPTH FEET	ELEVATION FT, MSL
Locking Hinged Top		FEET	F1, MOL
1/4-inch Vent	TOP OF RISER	-3.86	429.98
1/4-inch Weep Hole	2" Threaded Riser Cap	0.00	420.00
*	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
	GROUND SURFACE	0.00	426.12
	1889		
\{\bar{\cappa}\}	PROTECTIVE CASING		
	SIZE: 4x4-inch TYPE: Anodized Aluminum		
	TTPE. Allouized Aldillillidill		
	BOTTOM OF PROTECTIVE CASING		
*	N		
8			
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
▼ El. 398.48	AMOUNT: 20.25 cubic feet		
1/6/2010	RISER CASING		
	DIA: 2-inch		
Ø	TYPE: Schedule 40 PVC		
2	JOINT TYPE: Flush Threaded		
	00 1 2 1		
8			
2	TOP OF SEAL	39.74	386.38
- B	ANNULAR SEAL		
1	TYPE: 1/4-inch coated bentonite pellets		
Na .	5-gal buckets AMOUNT: 1 bucket		
- M	AMOUNT: 1 bucket PLACEMENT: Tremie		
R	TOP OF FILTER PACK	41.74	384.38
101	FILTER PACK		
₩ 🛱	TYPE: DSI Sand - 1A (20/30)		
8	Drillers Services, Inc.		
₩.	AMOUNT: 5 bags		
8	PLACEMENT: Tremie; wash with water		
2	POTTOM OF DISER / TOD OF SORES	12 01	202.20
₩.	BOTTOM OF RISER / TOP OF SCREEN SCREEN	43.84	382.28
⊠	DIA: 2-inch		
×	TYPE: Schedule 40 PVC Prepack		
8	OPENING WIDTH: 0.01-inch		
192	OPENING TYPE: Slotted		
8-	SLOT SPACING: 0.25-inch		
1921	SLOT LENGTH: 1.5-inch		
8	BOTTOM OF SCREEN	53.84	372.28
₩.	POTTOM OF GABINO	54.14	371.98
&	BOTTOM OF CASING	54.14	37 1.98
<u> </u>			
HOLE	DIA: 9"		



GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

LOG OF TEST BORING

	RN COMPANY SERVICES, INC.	PR	OJECT	Plant Sc	cherer CCR St	orage	Facility
	RN COMPANY SERVICES, INC. CIENCE AND ENVIRONMENTAL ENGINEERIN						- dollity
DATE STAP	TED 10/6/2009 COMPLETED 10/6/2009	GIIDE E	EV 400	Ω	COOPDING	ATEO.	N 1 110 050 62 E 2 414 405 26
	OR SCS Field Services EQUIPMEN						
	Y S. Denty LOGGED BY L. Millet						
	PTH 69.6 ft. GROUND WATER DEPTH: DUF						
	ell installed. Refer to well data sheet.						
DEPTH (ft) GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
	Sandy SILT (MLS) and silty SAND (SM)						
_							
5							
10							
15							
20	Dry, sandy SILT (MLS); orange with light brown		ss	19.5-	4-5-6		
	and black mottles; friable		-1	21.0	(11)		
1 1 1 1 1					1	1 1	



LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility

LOCATION Cell 1

DEPTH (ft)								
 	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
.:		Sandy SILT (MLS) and silty SAND (SM) (Con't)						
25		Dry, sandy SILT (MLS); orange and light brown with black organics; friable; micaceous		SS -2	24.5- 26.0	4-4-6 (10)		
			393.3					
30		Dry, silty SAND (SM); light orange and tan with occassional black mottles; friable; micaceous		SS -3	29.5- 31.0	4-5-7 (12)		
			388.3					
35		Dry, clayey SAND (SC); black, green and light tan with occassional light orange mottling; very	300.0	ss	34.5-	6-5-6		
		fine to fine grained; micaceous		-4	36.0	(11)		
40		Moist, clayey SAND (SC); black and white with black and orange mottling; very fine to fine grained; micaceous; gneissic saprolite		SS -5	39.5- 41.0	6-7-9 (16)		
		, , , , , , , , , , , , , , , , , , , ,						
45		Moist, clayey SAND (SC); black and white with black and orange mottling; very fine to fine grained; micaceous; soft		SS -6	44.5- 46.0	8-10-16 (26)		
			373.3					
50			313.3	SS -7	49.5- 51.0	11-19-24 (43)		



LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.

PROJECT Plant Scherer CCB Storage Facility

EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING **LOCATION** Cell 1 SAMPLE TYPE NUMBER SAMPLE DEPTH (ft.) % ELEVATION GRAPHIC LOG RECOVERY 9 (RQD) DEPTH (ft) MATERIAL DESCRIPTION COMMENTS Moist, silty SAND (SM); brown and white striated with orange mottling; very fine to fine grained; micaceous (Con't) 55 Wet, silty SAND (SM); black and white with dark 19-18-20 SS brown mottling; very fine to fine grained; 54.5micaceous; gneissic saprolite -8 56.0 (38)363.3 GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GP. Wet, sandy SILT (MLS); black with light and dark 60 SS 59.5-34-45-48 orange mottling; micaceous -9 61.0 (93)Wet, sandy SILT (MLS); black and white with 65 64.5-15-20-19 occassional orange mottling; micaceous; -10 66.0 (39)garnets; gneissic saprolite SS 69.5-50/2" SLATE; gray 70 (100+)69.7 Bottom of borehole at 69.6 feet. 75

SOU	THERN 4	<u> </u>			DRILLI	NG L	.OG				Hole No.	(GWA-21	
Energy 1	o Serve Your				GEOLOGIC						Sheet		of	1
SITE		Georgia	a Power Comp	any Plan	t Scherer				HOLE DEPTH	1	7 sur	SURF.ELEV.		9.56
	LOCATION	PAC/Ash Cell							112067	75.77	E	240	9462.77	
ANGLE		0	BEARING	C)	CONTR	ACTOR		Boart Longy	ear	DRILL NO.	Bl	_100C	
DRILLIN	IG METHOD		Sonic		NO. SAMPLES		Contin	uous	s 1	NO. U.D. SA	MPLES		0	
		ABLE DEPTH												
	TYPE GROUT												9/2010	
	DRILLER	S. Gautney	RECORDER	D. Brooks	APPRO						OMP. DATE	6/2	9/2010	
Depth	Elev.	Mater	rial Description, Classification	on and Remarks		Sample No.			ard Penetration Tes Blows	l N	Commer	its	% Rec	RQD
0	419.56	Sandy CLAY												
1	418.56	Í												
2	417.56													
3	416.56													
4	415.56													
5	414.56	Clayey SAND												
6	413.56													
7	412.56													
8	411.56													
9	410.56													
10	409.56	Weathered rock												
11	408.56													
12	407.56													
13	406.56													
14	405.56													
15	404.56													
16	403.56													
17	402.56	17' - Bottom of bor	ring											
18	401.56		·											
19	400.56													
20	399.56													
21	398.56													
22	397.56													
23	396.56													
24	205 56													

Form GS9901 8-19-2008

Southern Company Generation WELL CONSTRUCTION LOG DRILLING CO.: Boart Longyear WELL PROJECT: Plant Scherer DRILLER: S. Gautney NAME LOCATION: PAC/Ash Cell RIG TYPE: BL100C LOGGER: D. Brooks DRILLING METHODS: Sonic GWA-21 DATE CONSTRUCTED: 6/29/2010 DEPTH ELEVATION FEET FT, MSL Locking Hinged Top _ 1/4-inch Vent-TOP OF RISER -2.74 422.30 1/4-inch Weep Hole 2" Threaded Riser Cap Pea Gravel in annular space 4-ft x 4-ft x 4" concrete pad **GROUND SURFACE** 0.00 419.56 PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING **BACKFILL MATERIAL** TYPE: Portland Cement Grout AMOUNT: 16 gal **RISER CASING** DIA: 2-inch ▼ El. 417.95 TYPE: Schedule 40 PVC 7/15/2010 JOINT TYPE: Flush Threaded 3.66 415.90 TOP OF SEAL ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie 413.90 TOP OF FILTER PACK 5.66 FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water 411.90 BOTTOM OF RISER / TOP OF SCREEN 7.66 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch **OPENING TYPE: Slotted** SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch 17.66 401.90 **BOTTOM OF SCREEN** 17.96 401.60 **BOTTOM OF CASING** HOLE DIA: 6"

sou	THERN	ANV			DRILLI	NG L	OG			Hole No.	GWA-2	22
Energy	to Serve Your				OLOGIC					Sheet 1	of	2
SITE		Georgia	Power Co	mpany Plant S	Scherer					0 SURF.E	ELEV. 4	41.75
		PAC/Ash Cell				_				E	2409473.4	18
ANGLE		0	BEARING	₃ 0		CONTR	ACTOR	Boart Longy	ear	DRILL NO.	BL100C	
DRILLI	NG METHOD		Sonic	N	NO. SAMPLES	·	Continuo	ous	NO. U.D. SAI	MPLES	0	
	WATER T	ABLE DEPTH	E	ELEV.	ТІ					TE TAKEN		
	TYPE GROUT	T					IX		ORILLING ST	ART DATE		
	DRILLER	S. Gautney	RECORDER	D. Brooks	APPRO'					OMP. DATE	6/30/2010)
Depth	Elev.	Materia	al Description, Classit	fication and Remarks		Sample No.	Sta From To	andard Penetration Tes Blows	st N	Comments	% Red	RQD
0	441.75	Reddish orange sa	ndy SILT, dry,	micaceous								
1	440.75											
2	439.75											
3	438.75											
4	437.75											
5	436.75											
6	435.75											
7	434.75											
8	433.75											
9	432.75											
10	431.75	-Same as above										
11	430.75											
12	429.75	Orange, tan, and w	hite clayey SIL	T, dry, micaceous	3							
13	428.75											
14	427.75	-										
15	426.75											
16	425.75	1										
17	424.75	-										
18	423.75	-										
19	422.75	-										
20	421.75	-Same as above										
21	420.75	-										
22	419.75	4										
23	418.75	4										
24 Form GS	417.75 9901 8-19-20	08										

SOUTHERN COMPANY
Energy to Serve Your World

DRILLING LOG GEOLOGICAL SERVICES

Hole No. GWA-22
Sheet 2 of 2

Energy :	to Serve You		AL SE	KVICES			Sheet 2	of	2
SITE _		Georgia Power Company Plant Scherer			TOTAL DEPTH	4	SURF.ELEV	44	1.75
Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Stan From To	dard Penetration Test Blows	N	Comments	% Rec	RQD
25	416.75	SAPROLITIC GNEISS, moist							
26	415.75								
27	414.75								
28	413.75								
29	412.75								
30	411.75								
31	410.75								
32	409.75								
33		Intact GNEISS, fractured with iron staining							
34	407.75	, · y							
35	406.75								
36	405.75								
37	404.75								
38	403.75								
39	402.75								
40	401.75								
41	400.75	40' - Bottom of boring							
42	399.75								
43	398.75								
44	397.75								
45	396.75								
46	395.75								
47	394.75								
48	393.75								
49	392.75								
50	391.75								
51	390.75								
52	389.75								
53	388.75								
54	387.75								
55	386.75								
	20001 8 10								

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear		WELL
THOUSET: Hank defined	DRILLER: S. Gautney		NAME
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C		
LOGGER: D. Brooks	DRILLING METHODS: Sonic		GWA-22
DATE CONSTRUCTED: 6/30/2010			
		DEPTH	ELEVATION
		FEET	FT, MSL
Locking Hinged Top			
1/4-inch Vent	TOP OF RISER	-2.48	444.23
1/4-inch Weep Hole	2" Threaded Riser Cap		
	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
	GROUND SURFACE	0.00	441.75
	PROTECTIVE CASING		
	SIZE: 4-inch round		
	TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 16 gal		
	RISER CASING		
_ = 1 404 = 0	DIA: 2-inch		
▼ El. 421.73	TYPE: Schedule 40 PVC		
7/15/2010	JOINT TYPE: Flush Threaded		
	TOP OF SEAL	25.97	415.78
	ANNULAR SEAL	20.01	410.70
	TYPE: 3/8-inch bentonite pellets		
	Enviroplug 50# bags		
	AMOUNT: 0.5 bag		
	PLACEMENT: Tremie		
	TOP OF FILTER PACK	27.97	413.78
	FILTER PACK		
	TYPE: DSI Sand - #2		
	Drillers Services, Inc. 0.5 cubic foot bags		
	AMOUNT: 4 bags		
	PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	29.72	412.03
	SCREEN		
	DIA: 2-inch		
	TYPE:ASTM-NSF Schedule 40 PVC Prepack		
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT LENGTH: 1.5 inch		
	SLOT LENGTH: 1.5-inch	39.72	402 02
	BOTTOM OF SCREEN	39.72	402.03
	BOTTOM OF CASING	40.02	401.73
	BOTTOW OF CASING	₹0.0Z	701.70
HOLE DI	A: 6"		
HOLL DI	· ·· · •		

March Marc	sou	COMPANY				DRILLI	NG L	.og		Hole No.	G'	WA-45	j
MOSCINE Solid So	Energy	to Serve Your								Sheet 1	C	of	2
MAGE Some	SITE			ia Power Co	mpany Plant						_		
MATER NUMER Sorie No. SAMPLES CONTINUES NO. U.D. SAMPLES NO.							_			E	24078	889.43	
MATER TABLE DEPTH													
Precision Prec	DRILLI												
DRILLE S. Gautney RECORDER L. Millet APPROVED Security No. Security Security No. Security Security No. Security Security No. No. Security Security No. No. Security Security No. No. Security No. Securi													
Companies Comp													
Depth Since Modernal perception, Classification and Remarks No From To Billows No Comments No Roc Rock		DRILLER	S. Gautney	RECORDER	L. Millet	APPROV			 ILLING COM	P. DATE	- T	72010	
1 446.98 2 445.98 3 444.98 4 443.98 6 441.98 7 440.98 8 439.98 9 439.98 10 437.98 11 436.98 12 435.98 12 435.98 13 434.98 14 433.98 15 432.98 16 431.98 17 430.98 18 429.98 19 428.98 20 427.98 Brown, tan, green, and orange silty SAND, saturated, with white mottling, high mica content 21 426.88 22 425.98 23 424.98 24 423.98	Depth	Elev.	Mate	erial Description, Classit	fication and Remarks		No.		N	Comments	\dashv	% Rec	RQD
1 446.98 2 445.98 3 444.98 4 443.98 5 442.98 6 441.98 7 440.98 8 439.98 9 438.98 10 437.98 11 436.98 12 435.98 13 434.98 14 433.98 15 432.98 16 431.98 17 430.98 18 429.98 19 428.98 20 427.98 21 426.98 22 425.98 23 424.98	0	447.98		AY, dry, hard, oc	casional black mo	ottling,							
3 444.98 4 443.98 5 442.98 6 441.98 7 440.98 8 439.98 9 438.98 10 437.98 Red, orange, and tan clayey SILT, black and white mottling, mica 11 436.98 12 435.98 13 434.98 14 433.98 15 432.98 16 431.98 17 430.98 18 429.98 19 428.98 20 427.98 21 426.98 22 425.98 23 424.98 24 423.98	1	446.98	mica										
4 443.98 6 441.98 7 440.98 8 439.98 9 438.98 10 437.98 11 436.99 12 435.98 13 434.98 14 433.98 15 432.98 16 431.98 17 430.98 18 429.98 19 428.98 20 427.98 Brown, tan, green, and orange silty SAND, saturated, with white mottling, high mica content with white mottling, high mica content 21 426.98 22 425.98 23 424.98	2	445.98											
5 442.98 6 441.98 7 440.98 8 439.98 9 436.98 10 437.98 Red, orange, and tan clayey SILT, black and white mottling, mica 11 436.98 12 435.98 13 434.98 14 433.98 15 432.98 16 431.98 17 430.98 18 429.98 19 426.98 20 427.98 Brown, tan, green, and orange silty SAND, saturated, with white mottling, high mica content 21 426.98 22 425.98 23 424.98	3	444.98											
6 441.98 7 440.98 8 439.98 9 438.98 10 437.98 Red, orange, and tan clayey SILT, black and white mottling, mica 11 436.98 12 435.98 13 434.98 14 433.98 15 432.98 16 431.98 17 430.98 18 429.98 19 428.98 20 427.98 Brown, tan, green, and orange silty SAND, saturated, with white mottling, high mica content 21 426.98 22 426.98 23 424.98	4	443.98											
7 440.98 8 439.98 9 438.98 10 437.98 Red, orange, and tan clayey SILT, black and white mottling, mica 11 436.98 12 435.98 13 434.98 14 433.98 15 432.98 16 431.98 17 430.98 18 429.98 19 428.98 20 427.98 Brown, tan, green, and orange silty SAND, saturated, with white mottling, high mica content 21 426.98 22 425.98 23 424.98	5	442.98											
8 439.98 9 438.98 10 437.98 Red, orange, and tan clayey SILT, black and white mottling, mica 11 436.98 12 435.98 13 434.98 14 433.98 15 432.98 16 431.98 17 430.98 18 429.98 19 428.98 20 427.98 Brown, tan, green, and orange silty SAND, saturated, with white mottling, high mica content 21 426.98 22 425.98 23 424.98	6	441.98											
9	7	440.98											
10	8	439.98											
11	9	438.98											
11	10	437.98		tan clayey SILT	, black and white	mottling,							
13	11	436.98	mica										
14 433.98 15 432.98 16 431.98 17 430.98 18 429.98 19 428.98 20 427.98 21 426.98 22 425.98 23 424.98 24 423.98	12	435.98											
15	13	434.98											
16 431.98 17 430.98 18 429.98 19 428.98 20 427.98 Brown, tan, green, and orange silty SAND, saturated, with white mottling, high mica content 21 426.98 22 425.98 23 424.98 24 423.98	14	433.98											
17 430.98 18 429.98 19 428.98 20 427.98 Brown, tan, green, and orange silty SAND, saturated, with white mottling, high mica content 21 426.98 22 425.98 23 424.98 24 423.98	15	432.98											
18	16	431.98											
19	17	430.98											
20 427.98 Brown, tan, green, and orange silty SAND, saturated, with white mottling, high mica content 21 426.98 22 425.98 23 424.98 24 423.98	18	429.98											
21 426.98 With white mottling, high mica content	19	428.98											
21 426.98 22 425.98 23 424.98 24 423.98	20	427.98	Brown, tan, greer	n, and orange sil	ty SAND, saturate	ed,							
23 424.98 24 423.98	21	426.98	with white mottling	g, high mica cor	ntent								
24 423.98	22	425.98											
	23	424.98											

DRILLING LOG Hole No. GWA-45 SOUTHERN COMPANY **GEOLOGICAL SERVICES** Sheet 2 of Energy to Serve Your World **Georgia Power Company Plant Scherer** 33 TOTAL DEPTH SURF.ELEV. 447.98 Standard Penetration Test RQD Depth Elev. Material Description, Classification and Remarks No. From To Ν Comments % Rec 422.98 25 26 421.98 27 420.98 419.98 28 29 418.98 30 417.98 Green and white SAND, wet, orange mottling, mica 416.98 415.98 32 33 414.98 33' - Bottom of boring 413.98 34 35 412.98 36 411.98 37 410.98 409.98 38 39 408.98 407.98 40 406.98 41 42 405.98 404.98 43 403.98 45 402.98 46 401.98 47 400.98 399.98 48 398.98 49 397.98 50 51 396.98 395.98 52 394.98 53

393.98 392.98

54

55

PROJECT: Plant Scherer	DBILLING CO : Boot Language	alion	WELL
PROJECT: Plant Scherer	DRILLER: S. Coutnoy		NAME
LOCATION: PAC/Ash Cell	DRILLER: S. Gautney RIG TYPE: BL100C		INAIVIE
LOGGER: L. Millet	DRILLING METHODS: Sonic		GWA-45
DATE CONSTRUCTED: 6/23/2010	DRILLING METHODS. Solic		GWA-45
DATE CONSTRUCTED. 0/23/2010		DEDTU	EL EL (ATION
		DEPTH	ELEVATION
	_	FEET	FT, MSL
Locking Hinged Top ——— ▶			
1/4-inch Vent—	TOP OF RISER	-2.91	450.89
1/4-inch Weep Hole	2" Threaded Riser Cap		
· · · · · ·			
	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad	rea Graver III ariilular space		
0-it x 0-it x 4 concrete pad	GROUND SURFACE	0.00	447.98
	GROUND SURFACE	0.00	447.90
	PROTECTIVE CASING		
	SIZE: 4-inch round		
	TYPE: Anodized Aluminum		
▼ El. 437.03	7 2. 7		
7/15/2010	BOTTOM OF PROTECTIVE CASING		
	2011011101120112011		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 16 gal		
	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
		40.00	400.00
	TOP OF SEAL	18.29	429.69
	ANNULAR SEAL		
	TYPE: 3/8-inch bentonite pellets		
	Enviroplug 50# bags AMOUNT: 0.5 bag		
	PLACEMENT: Tremie		
	TOP OF FILTER PACK	20.29	427.69
	FILTER PACK	_00	.250
	TYPE: DSI Sand - #2		
	Drillers Services, Inc. 0.5 cubic foot bags		
	AMOUNT: 4 bags		
	PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	22.29	425.69
	SCREEN		
	DIA: 2-inch		
	TYPE:ASTM-NSF Schedule 40 PVC Prepack		
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch	22.00	11E CO
	BOTTOM OF SCREEN	32.29	415.69
	BOTTOM OF CASING	32.59	415.39
	BOTTOM OF CASING	32.38	410.08
HOLE [λΙΑ· 6"		
HOLL L	>" · · ·		
			ļ

sou	SOUTHERN A COMPANY				DRILLI					Hole No.	G	WA-46	;
Energy	COMPA to Serve Your			GE	OLOGICA	AL SE	RVICES			Sheet 1	(of	2
SITE			ia Power Co	mpany Plant S						SURF.E	_		
		PAC/Ash Cell						1120783				235.72	
				₃ 0						RILL NO.			
DRILLII				N						<u>-</u>			
		· · · · · · · · · · · · · · · · · · ·		ELEV.			·			· · · · · · · · · · · · · · · · · · ·		/2010	
				QUANTITY					P. DATE		/2010		
	DRILLER	S. Gautney	RECORDER	L. Millet	APPROV	Sample		ndard Penetration Test	ILLING COM	P. DATE	0,20	72010	
Depth	Elev.	Mat	terial Description, Classif	fication and Remarks		No.	From To	Blows	N	Comments		% Rec	RQD
0	458.10		dry, hard, with oc	casional black mot	ttling,								
1	457.10	mica											
2	456.10												
3	455.10												
4	454.10												
5	453.10]											
6	452.10												
7	451.10	1											
8		1											
	450.10												
9	449.10	0	II Tatithi										
10		Orange clayey Sl	IL I , wet, with mid	ca									
11	447.10												
12	446.10	Orange and pink mottling, trace mi		with black and whit	te								
13	445.10												
14	444.10	-											
15	443.10	1											<u> </u>
16	442.10	-											
17	441.10	-											
18	440.10	<u> </u>											
19	439.10	_											
20	438.10	Tan sandy CLAY	, wet, with black	mottling, trace mic	a								<u> </u>
21	437.10	_											
22	436.10												
23	435.10												
24	434.10												
Form GS	9901 8-19-20	08											

SOUTHERN COMPANY
Energy to Serve Your World

DRILLING LOG GEOLOGICAL SERVICES

Hole No. GWA-46
Sheet 2 of 2

Georgia Power Company Plant Scherer 43.5 SITE TOTAL DEPTH SURF.ELEV. 458.1 Standard Penetration Test ampl RQD Depth Elev. Material Description, Classification and Remarks No. From To Blows Ν Comments % Rec 433.10 Tan silty CLAY, wet, with heavy black mottling, trace 25 26 432.10 27 431.10 430.10 28 29 429.10 428.10 Brown and orange silty SAND, wet, with black and 30 white mottling 427.10 31 426.10 32 425.10 33 424.10 34 35 423.10 36 422.10 37 421.10 Green and white SAND, wet, medium to coarse grained, with mica 420.10 38 39 419.10 40 418.10 Green and brown sandy SILT, wet, with mica, clay 417.10 41 42 416.10 43 415.10 414.10 43.5' - Bottom of boring 45 413.10 46 412.10 411.10 47 48 410.10 49 409.10 50 408.10 51 407.10 406.10 52 53 405.10 54 404.10 403.10 55

WELL CONSTRUCTION LOG Southern Company Generation PROJECT: Plant Scherer DRILLING CO.: Boart Longyear WELL DRILLER: S. Gautney NAME LOCATION: PAC/Ash Cell RIG TYPE: BL100C DRILLING METHODS: Sonic GWA-46 LOGGER: L. Millet DATE CONSTRUCTED: 6/23/2010 DEPTH **ELEVATION** FEET FT, MSL Locking Hinged Top 1/4-inch Vent ~ 460.86 TOP OF RISER -2.76 2" Threaded Riser Cap 1/4-inch Weep Hole Pea Gravel in annular space 4-ft x 4-ft x 4" concrete pad GROUND SURFACE 0.00 458.10 PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum ▼ El. 432.05 BOTTOM OF PROTECTIVE CASING 7/16/2010 **BACKFILL MATERIAL** TYPE: Portland Cement Grout AMOUNT: 36 gal RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 29.94 428.16 ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie 426.16 TOP OF FILTER PACK 31.94 FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 33.94 424.16 **SCREEN** DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch 43.94 BOTTOM OF SCREEN 414.16 BOTTOM OF CASING 44.24 413.86 HOLE DIA: 6"

sou	THERN	ANY	DRILLII	NG L	.OG			Hole No.	GWA-4	7
Energy	to Serve Your		GEOLOGICA					Sheet 1	of	2
SITE		Georgia Power Company P	Plant Scherer					SURF.EL	EV. 46	2.81
	LOCATION	PAC/Ash Cell		COORD	INATES N			E	2408585.25	5
ANGLE		0 BEARING	0	CONTR	ACTOR	Boart Longyea	r _{DR}	RILL NO.		
DRILLIN	NG METHOD	Sonic	NO. SAMPLES		Continuo	us _{NO.}	U.D. SAMP	LES	0	
	WATER T	ABLE DEPTH ELEV	TIN				='	TAKEN		
	TYPE GROUT	QUANTITY			ıx	DRII	LING STAR	RT DATE		
	DRILLER	S. Gautney RECORDER L. Mill					LING COMF	P. DATE	6/22/2010	
Depth	Elev.	Material Description, Classification and Ren		Sample No.	Star From To	ndard Penetration Test Blows	N	Comments	% Rec	RQD
0	462.81	Dark red silty CLAY, dry, hard, trace mica								
1	461.81									
2	460.81									
3	459.81									
4	458.81									
5	457.81									
6	456.81									
7	455.81									
8	454.81									
9	453.81									
10	452.81	Orange, tan, and pink sandy SILT, dry, with	clay, mica							
11	451.81									
12	450.81									
13	449.81	Orange and white sandy CLAY, dry, with mid black mottling	ca, pink and							
14	448.81	- Industrial state of the state								
15	447.81									
16	446.81	Orange and white sandy CLAY, dry, trace m and pink mottling	ica, dark brown							
17	445.81									
18	444.81									
19	443.81									
20	442.81									
21	441.81									
22	440.81									
23	439.81									
24 Form GS	438.81 9901 8-19-20	08								

SOUTHERN COMPANY
Energy to Serve Your World

DRILLING LOG GEOLOGICAL SERVICES

Hole No. GWA-47
Sheet 2 of 2

Georgia Power Company Plant Scherer 55 SITE TOTAL DEPTH SURF.ELEV. 462.81 Standard Penetration Test RQD Depth Elev. Material Description, Classification and Remarks No. From To Blows Ν Comments % Rec 437.81 -As above with black mottling, high mica content 25 26 436.81 27 435.81 434.81 28 29 433.81 30 432.81 Tan sandy SILT, wet, loose, with clay 431.81 31 430.81 32 429.81 Green and white SAPROLITIC GNEISS, with black and 33 orange mottling, mica 428.81 34 35 427.81 36 426.81 37 425.81 424.81 38 39 423.81 Gray and white SAPROLITIC GNEISS, wet, with 40 422.81 occasional orange mottling, mica 421.81 41 42 420.81 419.81 43 44 418.81 45 417.81 46 416.81 415.81 47 48 414.81 49 413.81 412.81 Weathered black and white GNEISS, dry 50 51 411.81 410.81 52 409.81 53 54 408.81 407.81 55 55' - Bottom of boring

WELL CONSTRUCTION LOG Southern Company Generation PROJECT: Plant Scherer DRILLING CO.: Boart Longyear WELL DRILLER: S. Gautney NAME LOCATION: PAC/Ash Cell RIG TYPE: BL100C DRILLING METHODS: Sonic GWA-47 LOGGER: L. Millet DATE CONSTRUCTED: 6/22/10 DEPTH **ELEVATION** FEET FT, MSL Locking Hinged Top 1/4-inch Vent ~ 465.55 TOP OF RISER -2.74 2" Threaded Riser Cap 1/4-inch Weep Hole Pea Gravel in annular space 4-ft x 4-ft x 4" concrete pad GROUND SURFACE 0.00 462.81 PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum ▼ El. 430.95 BOTTOM OF PROTECTIVE CASING 7/13/2010 **BACKFILL MATERIAL** TYPE: Portland Cement Grout AMOUNT: 60 gal RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded TOP OF SEAL 37.16 425.65 ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie TOP OF FILTER PACK 39.16 423.65 FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water 41.16 421.65 BOTTOM OF RISER / TOP OF SCREEN **SCREEN** DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch 411.65 BOTTOM OF SCREEN 51.16 BOTTOM OF CASING 51.46 411.35 HOLE DIA: 6"

sou	SOUTHERN				DRILLI					Hole No.	(3WA-48	3
Energy	to Serve Your				EOLOGIC					Sheet 1		of	3
SITE			a Power Co	mpany Plant	Scherer			HOLE DEPTH	72	SURF.E	LEV.	458	3.73
		PAC/Ash Cell						112095		E	2408	3939.90	1
		0								RILL NO.			
DRILLIN												0	
		ABLE DEPTH								TAKEN		1/2010	
												2/2010	
	DRILLER	S. Gautney	RECORDER	L. Millet	APPRO	VED Sample		DF ndard Penetration Test	RILLING COM	P. DATE	0/2	2/2010	
Depth	Elev.	Mate	erial Description, Classi	fication and Remarks		No.	From To	Blows	N	Comments		% Rec	RQD
0	458.73	Dark red silty CLA	XY, dry, hard, tra	ace mica									
1	457.73												
2	456.73												
3	455.73												
4	454.73												
5	453.73	Black and white G	SNEISS										
6	452.73												
7	451.73	Dark orange and ı	red silty CLAY,	dry, hard, black r	mottling								
8	450.73	trace mica											
9	449.73												
10	448.73												
11	447.73	Orange and black	silty CLAY, dry	, trace mica									
12	446.73												
13	445.73												
14	444.73												
15	443.73												
16	442.73												
17	441.73												
18	440.73	Gneiss boulder, a Orange sandy CL		trace mica									
19	439.73	- Orange sandy CE	AT, dry, 100se,	nace mica									
20	438.73												
21	437.73												
22	436.73												
23	435.73	4											
24	434.73 9901 8-19-20	08											

SOUTHERN COMPANY

DRILLING LOG GEOLOGICAL SERVICES

Hole No. GWA-48
Sheet 2 of 3

gy to Serve Your World **Georgia Power Company Plant Scherer** 72 SITE TOTAL DEPTH SURF.ELEV. 458.73 Standard Penetration Test Depth Elev. Material Description, Classification and Remarks No. From To Blows Ν Comments % Rec RQD Orange sandy SILT, dry, loose with black, pink and white 433.73 25 mottling, trace mica 26 432.73 27 431.73 430.73 28 29 429.73 428.73 30 Orange silty CLAY, moist, trace mica with black and 427.73 tan mottling 31 32 426.73 425.73 33 424.73 34 35 423.73 Green, black and white saprolitic GNEISS 36 422.73 37 421.73 420.73 38 39 419.73 40 418.73 417.73 Light green and white relict GNEISS, high clay content, m 41 42 416.73 43 415.73 44 414.73 -relict GNEISS 45 413.73 46 412.73 47 411.73 48 410.73 Dark green and white weathered GNEISS with orange mottling, dry 49 409.73 Black, white and green weathered GNEISS, dry 50 408.73 51 407.73 406.73 52 53 405.73 54 404.73 403.73 55 402.73

DRILLING LOG Hole No. **GWA-48** SOUTHERN ZOMPANY **GEOLOGICAL SERVICES** Sheet 3 of Energy to Serve Your World **Georgia Power Company Plant Scherer** 72 TOTAL DEPTH SURF.ELEV. 458.73 Standard Penetration Test Depth Elev. Material Description, Classification and Remarks No. From To Blows Ν Comments % Rec RQD 401.73 57 58 400.73 399.73 59 69 389.73 61 397.73 Dark gray green clayey SILT, dry, hard, with mica, trace sand 62 396.73 395.73 63 394.73 64 393.73 Dark green gray clayey SAND, wet, very fine to fine-grained 65 66 392.73 67 391.73 68 390.73 Intact black and white GNEISS 69 389.73 388.73 70 71 387.73 386.73 72 72' - Bottom of boring

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	311011	WELL
1 100201.1 lant concret	DRILLER: S. Gautney		NAME
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C		
LOGGER: L. Millet	DRILLING METHODS: Sonic		GWA-48
DATE CONSTRUCTED: 6/22/2010			
			ELEVATION
	-	FEET	FT, MSL
Locking Hinged Top	_		
1/4-inch Vent	TOP OF RISER	-2.74	461.47
1/4-inch Weep Hole	2" Threaded Riser Cap		
	Pea Gravel in annular space		
4-ft x 4-ft x 4" concrete pad	OPOUND OUDEAGE	0.00	458.73
	GROUND SURFACE	0.00	430.73
	PROTECTIVE CASING		
) :	SIZE: 4-inch round		
	TYPE: Anodized Aluminum		
1	BOTTOM OF PROTECTIVE CASING		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
▼ El. 427.94 7/16/2010	AMOUNT: 64 gal		
7/10/2010	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	TOP OF SEAL	47.11	411.62
	∠ANNULAR SEAL		
	TYPE: 3/8-inch bentonite pellets		
	Enviroplug 50# bags		
	AMOUNT: 0.5 bag PLACEMENT: Tremie		
	TOP OF FILTER PACK	49.11	409.62
	FILTER PACK		
	TYPE: DSI Sand - #2		
	Drillers Services, Inc. 0.5 cubic foot bags		
	AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
	. 2.02.WETT. Home, wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	51.11	407.62
	SCREEN		_
	DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack		
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch	64.44	207.00
	BOTTOM OF SCREEN	61.11	397.62
	BOTTOM OF CASING	61.41	397.32
			
HOLE D	IA: 6"		
			<u> </u>

sou [.]	THERN A	ANY	DRILL	ING I	_OG			Hole No.	GWA-49	9
Energy :	to Serve Your		GEOLOGIC					Sheet 1	of	2
SITE		Georgia Power Comp	any Plant Scherer					SURF.ELE	v. <u>42</u> 9	9.96
	LOCATION	PAC/Ash Cell		COOR	DINATES N			E2	2409288.70)
ANGLE		0 BEARING	0	CONTR	ACTOR	Boart Longyea	r DR	RILL NO.	BL100C	
DRILLIN	IG METHOD	Sonic	NO. SAMPLES	3	Continuou	IS NO.	U.D. SAMP	LES	0	
	WATER T	ABLE DEPTH ELEV.	1	IME AFT	ER COMP.		DATE	TAKEN		
	TYPE GROUT	QUA	NTITY	N	IIX	DRIL	LING STAR	RT DATE	6/21/2010	
	DRILLER	S. Gautney RECORDER	L. Millet APPRO	_		-	LING COMF	P. DATE	6/21/2010	
Depth	Elev.	Material Description, Classificatio	on and Remarks	Sample No.	Stan	dard Penetration Test Blows	N	Comments	% Rec	RQD
0	429.96	Orange and reddish orange silty CLA	Y, with mica, black							
1	428.96	organics								
2	427.96									
3	426.96									
4	425.96									
5	424.96									
6	423.96	-As above with black mottling and inc	reasing mica							
7	422.96									
8	421.96									
9	420.96	-As above with light green mottling ar	nd increasing mica							
10	419.96	Tan and black silty CLAY, high mica of dark orange mottling	content, with							
11	418.96	dark orange mouning								
12	417.96									
13	416.96									
14	415.96	-Pink, orange and white as above								
15	414.96									
16	413.96									
17	412.96	-As above with black mottling, moist								
18	411.96									
19	410.96	Orange and white sandy CLAY, moist black mottling	t, with pink and							
20	409.96	Dark orange and white sandy CLAY,	moist, with mica,							
21	408.96	black mottling								
22	407.96									
23	406.96									
24 Form GS	405.96 9901 8-19-20	18								

SOUTHERN COMPANY

DRILLING LOG GEOLOGICAL SERVICES

Hole No. GWA-49
Sheet 2 of 2

rgy 10 Serve Your World **Georgia Power Company Plant Scherer** 37 SITE TOTAL DEPTH SURF.ELEV. 429.96 Standard Penetration Test RQD Depth Elev. Material Description, Classification and Remarks No. From To Blows Ν Comments % Rec Dark green, black, and white SAPROLITIC GNEISS, 25 404.96 with orange mottling, some mice 26 403.96 27 402.96 401.96 28 29 400.96 399.96 30 Dark green, black, and white clayey SAND, saturated, 398.96 31 loose, medium to coarse grained 397.96 32 396.96 Dark green, black, and white SAPROLITIC GNEISS, 33 dry 395.96 34 35 394.96 36 393.96 37 392.96 37' - Bottom of boring 391.96 38 39 390.96 389.96 40 388.96 41 42 387.96 43 386.96 44 385.96 45 384.96 46 383.96 382.96 47 48 381.96 49 380.96 50 379.96 51 378.96 377.96 52 53 376.96 54 375.96 374.96 55

WELL CONSTRUCTION LOG Southern Company Generation PROJECT: Plant Scherer DRILLING CO.: Boart Longyear WELL DRILLER: S. Gautney NAME RIG TYPE: BL100C LOCATION: PAC/Ash Cell DRILLING METHODS: Sonic GWA-49 LOGGER: L. Millet DATE CONSTRUCTED: 6/21/2010 DEPTH **ELEVATION** FEET FT, MSL Locking Hinged Top _ 1/4-inch Vent-TOP OF RISER -2.65 432.61 2" Threaded Riser Cap 1/4-inch Weep Hole Pea Gravel in annular space 4-ft x 4-ft x 4" concrete pad 429.96 0.00 **GROUND SURFACE** PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum BOTTOM OF PROTECTIVE CASING **BACKFILL MATERIAL** TYPE: Portland Cement Grout AMOUNT: 10 gal **RISER CASING** DIA: 2-inch TYPE: Schedule 40 PVC ▼ El. 423.00 JOINT TYPE: Flush Threaded 7/13/2010 24.05 405.91 TOP OF SEAL ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.75 bag PLACEMENT: Tremie 403.91 26.05 TOP OF FILTER PACK FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 3.5 bags PLACEMENT: Tremie; wash with water 28.05 401.91 BOTTOM OF RISER / TOP OF SCREEN **SCREEN** DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch **OPENING TYPE: Slotted** SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch 38.05 391.91 BOTTOM OF SCREEN **BOTTOM OF CASING** 38.35 391.61 HOLE DIA: 6"

SOU	THERN A	DRILL						GWC-29)
	to Serve Your \	World [™] GEOLOGIC	AL SE	RVICES			Sheet 1		1
SITE		Georgia Power Company Plant Scherer			HOLE DEPTH	25	SURF.ELEV.	396	6.69
	LOCATION	PAC/Ash Cell		DINATES N	1119875.6	6	E 240	8717.92	
ANGLE		0 BEARING 0	CONTR	ACTOR	Boart Longyear	DR	RILL NO. B	L100C	
DRILLIN		Sonic NO. SAMPLE							
		ABLE DEPTH ELEV						28/2010	
		QUANTITY						28/2010	
	DRILLER	S. Gautney RECORDER D. Brooks APPRO	Sample	Stand	DRILL dard Penetration Test	ING COMP	P. DATE	1	
Depth	Elev.	Material Description, Classification and Remarks	No.	From To	Blows	N	Comments	% Rec	RQD
0	396.69	Orangish-red clayey SILT, dry, micaceous							
1	395.69								
2	394.69								
3	393.69								
4	392.69								
5	391.69								
6	390.69								
7	389.69								
8	388.69								
9	387.69								
10	386.69	-Same as above, tan and orange							
11	385.69								
12	384.69								
13	383.69								
14	382.69								
15	381.69								
16	380.69								
17	379.69								
18	378.69	Gray and white SAPROLITE, gneissic, wet, micaceous							
19	377.69								
20	376.69								
21	375.69								
22	374.69								
23	373.69								
24	372.69								
25	371.69 9901 8-19-200	25' - Bottom of boring							

DRILLING CO.: Boart Longyear DRILLER: S. Gautney NA OCATION: PAC/Ash Cell COGGER: D. Brooks DRILLING METHODS: Sonic DEPTH FEET FT. Cocking Hinged Top 1/4-inch Vent 1/4-inch Weep Hole Coff x 6-ft x 4" concrete pad PROJECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum WE NA DEPTH FEET FT. GROUND SURFACE 0.00 396
COCATION: PAC/Ash Cell RIG TYPE: BL100C LOGGER: D. Brooks DRILLING METHODS: Sonic GWG DATE CONSTRUCTED: 6/28/2010 DEPTH FEET FT, Locking Hinged Top 1/4-inch Vent 1/4-inch Weep Hole 3-ft x 6-ft x 4" concrete pad PROTECTIVE CASING SIZE: 4-inch round
DRILLING METHODS: Sonic DATE CONSTRUCTED: 6/28/2010 DEPTH FEET FT, Locking Hinged Top 1/4-inch Vent 1/4-inch Weep Hole 2" Threaded Riser Cap Pea Gravel in annular space GROUND SURFACE O.00 396 PROTECTIVE CASING SIZE: 4-inch round
DATE CONSTRUCTED: 6/28/2010 DEPTH FEET FT, Locking Hinged Top 1/4-inch Vent 1/4-inch Weep Hole 2" Threaded Riser Cap Pea Gravel in annular space GROUND SURFACE 0.00 396 PROTECTIVE CASING SIZE: 4-inch round
Locking Hinged Top 1/4-inch Vent 1/4-inch Weep Hole 2" Threaded Riser Cap Pea Gravel in annular space GROUND SURFACE 0.00 396 PROTECTIVE CASING SIZE: 4-inch round
Locking Hinged Top 1/4-inch Vent 1/4-inch Weep Hole 2" Threaded Riser Cap Pea Gravel in annular space GROUND SURFACE 0.00 396 PROTECTIVE CASING SIZE: 4-inch round
Locking Hinged Top 1/4-inch Vent 1/4-inch Weep Hole 2" Threaded Riser Cap Pea Gravel in annular space GROUND SURFACE 0.00 396 PROTECTIVE CASING SIZE: 4-inch round
1/4-inch Vent 1/4-inch Weep Hole 2" Threaded Riser Cap Pea Gravel in annular space G-ft x 6-ft x 4" concrete pad PROTECTIVE CASING SIZE: 4-inch round
1/4-inch Vent 1/4-inch Weep Hole 2" Threaded Riser Cap Pea Gravel in annular space G-ft x 6-ft x 4" concrete pad PROTECTIVE CASING SIZE: 4-inch round
2" Threaded Riser Cap Pea Gravel in annular space GROUND SURFACE 0.00 396 PROTECTIVE CASING SIZE: 4-inch round
Pea Gravel in annular space GROUND SURFACE 0.00 396 PROTECTIVE CASING SIZE: 4-inch round
GROUND SURFACE 0.00 396 PROTECTIVE CASING SIZE: 4-inch round
PROTECTIVE CASING SIZE: 4-inch round
PROTECTIVE CASING SIZE: 4-inch round
PROTECTIVE CASING SIZE: 4-inch round
SIZE: 4-inch round
TYPE: Anodized Aluminum
BOTTOM OF PROTECTIVE CASING
BOTTOWIOI TROTLETIVE CAGING
BACKFILL MATERIAL
TYPE: Portland Cement Grout
AMOUNT: 16 gal
▼ El. 394.69
7/15/2010 RISER CASING
DIA: 2-inch
TYPE: Schedule 40 PVC
JOINT TYPE: Flush Threaded
TOP OF SEAL 10.35 386
ANNULAR SEAL
TYPE: 3/8-inch bentonite pellets
Enviroplug 50# bags
AMOUNT: 0.5 bag
PLACEMENT: Tremie
TOP OF FILTER PACK 12.35 384
FILTER PACK
TYPE: DSI Sand - #2
Normal Normal Livillara Carriaga Ina O E aubia faat baga
Drillers Services, Inc. 0.5 cubic foot bags
AMOUNT: 4 bags
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 24.10 372
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 24.10 372
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 24.10 372
AMOUNT: 4 bags PLACEMENT: Tremie; wash with water BOTTOM OF RISER / TOP OF SCREEN 14.10 382 SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch BOTTOM OF SCREEN 24.10 372

sou	THERN	DRIL	LING	LOG			Hole No.	GWC-50)
Energy :	to Serve Your			RVICES			Sheet 1	of	2
SITE		Georgia Power Company Plant Schere	er		HOLE DEPTH	35	SURF.ELEV.	404	4.18
		PAC/Ash Cell	COOR	DINATES N			E 240	08955.89)
ANGLE		0 BEARING 0	CONT	RACTOR	Boart Longyear			L100C	
	NG METHOD	Sonic NO. SAMP	LES	Continuou	IS NO. U	J.D. SAMP	LES	0	
		ABLE DEPTH ELEV					TAKEN		
	TYPE GROUT	QUANTITY		1IX			T DATE	28/2010	
	DRILLER	S. Gautney RECORDER D. Brooks APP	ROVED	Ctan	DRILI dard Penetration Test	LING COM	P. DATE6/.	28/2010	1
Depth	Elev.	Material Description, Classification and Remarks	No.		Blows	N	Comments	% Rec	RQD
0	404.18	Red sandy CLAY, dry, micaceous							
1	403.18								
2	402.18								
3	401.18								
4	400.18								
5	399.18								
6	398.18								
7	397.18								
8	396.18								
9	395.18								
10	394.18	Pink, tan, and orange sandy SILT, with clay, dry, micaceou	s						
11	393.18								
12	392.18								
13	391.18								
14	390.18								
15	389.18								
16	388.18								
17	387.18	White, orange, and tan sandy SILT, dry, micaceous							
18	386.18								
19	385.18								
20	384.18								
21	383.18								
22	382.18								
23	381.18								
24 Form GS	380.18 9901 8-19-20	18							

SOUTHERN COMPANY
Energy to Serve Your World

DRILLING LOG GEOLOGICAL SERVICES

Hole No. GWC-50

Sheet 2 of 2 **Georgia Power Company Plant Scherer** 35 SITE TOTAL DEPTH SURF.ELEV. 404.18 Sampl Standard Penetration Test Depth Elev. Material Description, Classification and Remarks No. From To Ν Comments % Rec RQD 379.18 Gray and white gneissic SAPROLITE, wet, micaceous 25 26 378.18 377.18 27 376.18 28 29 375.18 30 374.18 Hard saprolite 373.18 372.18 32 33 371.18 370.18 34 35 369.18 35' - Bottom of boring 36 368.18 37 367.18 366.18 38 39 365.18 40 364.18 363.18 41 42 362.18 361.18 43 44 360.18 45 359.18 46 358.18 47 357.18 48 356.18 49 355.18 354.18 50 51 353.18 352.18 52 53 351.18 54 350.18 349.18 55

WELL CONSTRUCTION LOG	Southern Company Genera	luon	_
PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear		WELL
	DRILLER: S. Gautney		NAME
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C		
LOGGER: D. Brooks	DRILLING METHODS: Sonic		GWC-50
DATE CONSTRUCTED: 6/28/2010			
		DEPTH	ELEVATION
		FEET	FT, MSL
Locking Hinged Top			
1/4-inch Vent	TOD OF DISER	-2.74	406.92
1/4-inch Weep Hole	TOP OF RISER 2" Threaded Riser Cap	-2.14	400.92
1/4-Inch Weep Hole			
C ft v C ft v All concrete mad	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad		0.00	40440
	GROUND SURFACE	0.00	404.18
No.			
	PROTECTIVE CASING		
	SIZE: 4-inch round		
	TYPE: Anodized Aluminum		
	BOTTOM OF PROTECTIVE CASING		
			1
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 16 gal		
	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	TOP OF SEAL	19.71	384.47
	ANNULAR SEAL		+
▼ El. 399.01	TYPE: 3/8-inch bentonite pellets		
7/17/2010	Enviroplug 50# bags		
77 1772010	AMOUNT: 0.5 bag		
	PLACEMENT: Tremie		
	TOP OF FILTER PACK	21.71	382.47
	FILTER PACK	21.71	302.47
	TYPE: DSI Sand - #2		
	Drillers Services, Inc. 0.5 cubic foot bags		
			1
	AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
	FLAGEINIENT. THEITHE, WASH WITH WATER		1
	DOTTON OF DIOTE (TOD OF COLUMN	00.40	200.70
	BOTTOM OF RISER / TOP OF SCREEN	23.46	380.72
	SCREEN		
	DIA: 2-inch		1
	TYPE:ASTM-NSF Schedule 40 PVC Prepack		1
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		1
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch		1.
	BOTTOM OF SCREEN	33.46	370.72
	BOTTOM OF CASING	33.76	370.42
H	IOLE DIA: 6"		
			1

sou	THERN A	A		DRILLI					Hole No.	GWC-	·51
Energy	to Serve Your					RVICES			Sheet 1	of	1
SITE		Georgia Power Co	mpany Plant	Scherer			HOLE DEPTH	26.5	SURF.EL		
		PAC/Ash Cell					1119835.	85	E	2408437.	
		0 BEARIN					Ranger	DR	RILL NO.	0 CME55)
DRILLIN		HSA					NO.	_			
		ABLE DEPTH F						=	TAKEN	7/26/201	
	DRILLER		L. Garland						P. DATE	7/27/201	0
Depth	Elev.	Material Description, Classi			Sample No.	Stand From To	dard Penetration Test	N	Comments	% Re	c RQD
0	406.88	reddish brown slightly sandy SILT								70110	
1	405.88	reduction brown slightly surface of E	mododdo								
2	403.88										
3	403.88				4	255	4.5.0	44			
4	402.88	yellow brown slightly sandy SILT	micacous		1	3.5-5	4-5-6	11			
5	401.88										
6	400.88										
7	399.88										
8	398.88										
9	397.88	gary and orangish brown sandy S coarse to fine quartz	SILT with some		2	8.5-10	5-13-14	27			
10	396.88	Toodise to line quarte									
11	395.88										
12	394.88										
13	393.88										
14	392.88	saprolite medium to fine grained	sandy SILT		3	13.5-15	4-6-7	13			
15	391.88										
16	390.88										
17	389.88										
18	388.88										
19	387.88	Saprolite slightly clayey SILT			4	18.5-20	6-10-16	26			
20	386.88										
21	385.88										
22	384.88										
23	383.88										
24	382.88										
	9901 8-19-200	08					1				

WELL CONSTRUCTION LOG	Southern Company Genera	tion	
PROJECT: Plant Scherer	DRILLING CO.: Ranger		WELL
	DRILLER: J. Crowe		NAME
LOCATION: PAC/Ash Cell	RIG TYPE CME 550		
LOGGER: L. Garland	DRILLING METHODS: Sonic		GWC-51
DATE CONSTRUCTED: 7/27/2010			
		DEPTH	ELEVATION
		FEET	FT, MSL
Locking Hinged Top			
1/4-inch Vent	TOP OF RISER	-3.01	409.89
1/4-inch Weep Hole	2" Threaded Riser Cap		100.00
We will the separate of the se	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
	GROUND SURFACE	0.00	406.88
	ONCOND CONTROL	0.00	+00.00
V.	PROTECTIVE CASING		
Ţ	SIZE: 4-inch round		
	TYPE: Anodized Aluminum		
	TTPE. Allouized Aluminum		
Q	POTTOM OF PROTECTIVE CASING		
	BOTTOM OF PROTECTIVE CASING		
▼ FL 400.00	DACKELL MATERIAL		
▼ El. 400.99	BACKFILL MATERIAL		
7/29/2010	TYPE: Portland Cement Grout		
	AMOUNT: 16 gal		
	DIOED CAOING		
	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	TOP OF SEAL	9.94	396.94
	ANNULAR SEAL		
	TYPE: 3/8-inch bentonite pellets		
	Enviroplug 50# bags		
	AMOUNT: 0.5 bag		
	PLACEMENT: Tremie		
	TOP OF FILTER PACK	11.94	394.94
	FILTER PACK		
	TYPE: DSI Sand - #2		
	Drillers Services, Inc. 0.5 cubic foot bags		
	AMOUNT: 4 bags		
	PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	13.49	393.39
	SCREEN		
	DIA: 2-inch		
	TYPE:ASTM-NSF Schedule 40 PVC Prepack		
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	23.49	383.39
	BOTTOM OF CASING	23.79	383.09
H	HOLE DIA: 6"		

sou [.]	THERN A	AV	DRILLI	NG L	_OG			Hole No.	GWC-52	2
Energy	to Serve Your		GEOLOGICA					Sheet 1	of	2
SITE		Georgia Power Compai	ny Plant Scherer			HOLE DEPTH		SURF.ELE	v. <u>41</u>	4.14
	LOCATION	PAC/Ash Cell						E 2	2408203.87	•
ANGLE		0 BEARING	0	CONTR	ACTOR	Boart Longyear	DR	RILL NO.	BL100C	
DRILLIN	IG METHOD	Sonic	NO. SAMPLES		Continuou	IS NO.	U.D. SAMPI	LES	0	
		ABLE DEPTH ELEV			· · · · · · · · · · · · · · · · · · ·			TAKEN		
	TYPE GROUT	QUANT				DRIL	LING STAR	T DATE	6/24/2010	
	DRILLER	S. Gautney RECORDER L	Millet APPROV	ED Sample	Ct	DRIL dard Penetration Test	LING COMF	P. DATE	6/24/2010	,
Depth	Elev.	Material Description, Classification a	and Remarks	No.	From To	Blows	N	Comments	% Rec	RQD
0	414.14	Orange clayey SILT, wet, sticky, with m	iica							
1	413.14									
2	412.14									
3	411.14									
4	410.14									
5	409.14									
6	408.14									
7	407.14	Orange and brown clayey SILT, wet, wi	th green mottling,							
8	406.14	mica								
9	405.14									
10	404.14	Tan and white clayey SILT, wet, mica								
11	403.14									
12	402.14									
13	401.14									
14	400.14									
15	399.14	-Dark brown, black, orange, and green	as above							
16	398.14	Tan sandy SILT, wet, white and black n	nottling, mica							
17	397.14									
18	396.14									
19	395.14									
20	394.14	Brown silty SAND, saturated, very fine t occasional black mottling, mica	to fine grained,							
21	393.14	9,								
22	392.14									
23	391.14									
24 Form GS	390.14 9901 8-19-200	08								

SOUTHERN COMPANY
Energy to Serve Your World*
SITE

DRILLING LOG GEOLOGICAL SERVICES

Hole No. GWC-52
Sheet 2 of 2

Energy	to Serve You		AL JE	IVAICES		-	Sheet 2	OI	2
SITE _	•	Georgia Power Company Plant Scherer	In. :	-	TOTAL DEPTH	3	0 SURF.ELEV.	414	1.14
Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Star From To	ndard Penetration Test Blows	N	Comments	% Rec	RQD
25	389.14	Green and white SAPROLITIC GNEISS, wet, with mica							
26	388.14								
27	387.14								
28	386.14								
29	385.14								
30	384.14	COL D. Harris of Lorina							
31	383.14	30' - Bottom of boring							
32	382.14								
33	381.14								
34	380.14								
35	379.14								
36	378.14								
37	377.14								
38	376.14								
39	375.14								
40	374.14								
41	373.14								
42	372.14								
43	371.14								
44	370.14								
45	369.14								
46	368.14								
47	367.14								
48	366.14								
49	365.14								
50	364.14								
51	363.14								
52	362.14								
53 54	361.14 360.14								
55	359.14								
	000.14								

WELL CONSTRUCTION LOG	Southern Company Genera	ition	
PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear		WELL
	DRILLER: S. Gautney		NAME
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C		
LOGGER: L. Millet	DRILLING METHODS: Sonic		GWC-52
DATE CONSTRUCTED: 6/24/2010			
		DEPTH	ELEVATION
		FEET	
		FEET	FT, MSL
Locking Hinged Top			
1/4-inch Vent	TOP OF RISER	-2.75	416.89
1/4-inch Weep Hole	2" Threaded Riser Cap		
	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
	GROUND SURFACE	0.00	414.14
	— GREENS SOLUTION	0.00	
4.3.4	PROTECTIVE CASING		
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	SIZE: 4-inch round		
<u>}</u>			
[55	TYPE: Anodized Aluminum		
Į.;			
<i>\</i>	BOTTOM OF PROTECTIVE CASING		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 7 gal		
▼ EI.408.19			
<u></u>	RISER CASING		
.,,2010	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	JOINT TTPE. Flush Threaded		
	TOP OF SEAL	15.85	398.29
	ANNULAR SEAL		
	TYPE: 3/8-inch bentonite pellets		
	Enviroplug 50# bags		
	AMOUNT: 0.5 bag		
	PLACEMENT: Tremie		
	TOP OF FILTER PACK	17.85	396.29
	FILTER PACK		
	TYPE: DSI Sand - #2		
	Drillers Services, Inc. 0.5 cubic foot bags		
	AMOUNT: 4 bags		
	PLACEMENT: Tremie; wash with water		
	F LAGEIVIENT. HEITIE, WASH WITH WATER		
	BOTTOM OF 51070 1707 07 1707	10.05	204.00
	BOTTOM OF RISER / TOP OF SCREEN	19.85	394.29
	SCREEN		
	DIA: 2-inch		
	TYPE:ASTM-NSF Schedule 40 PVC Prepack		
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	29.85	384.29
	SOTION OF CONCERN		3020
	BOTTOM OF CASING	30.15	383.99
	BOTTOWIOF CASING	50.15	500.55
	OLE DIA: CII		
H	DLE DIA: 6"		

sou	THERN A	Av	DRILLIN					Hole No.	(GWC-53	3
Energy :	to Serve Your		GEOLOGICA					Sheet	1	of	2
SITE		Georgia Power Company Plan	t Scherer					8 suri			
	LOCATION	PAC/Ash Cell			_		19.92	E	240	7942.97	
								DRILL NO.		_100C	
DRILLIN		Sonic				ous				0	
		ABLE DEPTH ELEV							0.10	3/2010	
		QUANTITY			×					3/2010	
	DRILLER	S. Gautney RECORDER L. Millet		ED Sample	St	andard Penetration Te		OMP. DATE	0/2	0/2010	
Depth	Elev.	Material Description, Classification and Remarks		No.	From To		N	Commen	ts	% Rec	RQD
0	432.93	Dark red silty CLAY, dry, hard, with mica									
1	431.93										
2	430.93										
3	429.93										
4	428.93										
5	427.93	Orange and tan silty CLAY, dry, hard, trace mica									
6	426.93										
7	425.93										
8	424.93										
9	423.93										
10	422.93	Tan, orange, and light green silty CLAY, dry, planteness mice, acceptant and grants	stic,								
11	421.93	trace mica, occasional sandy zones									
12	420.93										
13	419.93										
14	418.93										
15	417.93										
16	416.93										
17	415.93	Tan and brown silty CLAY, wet, with mica and damottling	ark brown								
18	414.93	mouning									
19	413.93										
20	412.93	Green and tan clayey SAND, saturated, very fine grained, with mica	to fine								
21	411.93	gramou, mur mou									
22	410.93	Tan sandy CLAY, wet, white mottling, with mica									
23	409.93										
24 Form GS	408.93 9901 8-19-200	8									

SOUTHERN AS **DRILLING LOG** Hole No. GWC-53 **GEOLOGICAL SERVICES** Sheet 2 of 2 rgy to Serve Your World **Georgia Power Company Plant Scherer** 28 TOTAL DEPTH SURF.ELEV. 432.93 Standard Penetration Test Depth Elev. Material Description, Classification and Remarks No. From To Ν Comments % Rec RQD 407.93 25 26 406.93 Green silty CLAY, wet, tan and white mottling, with mica 405.93 27 404.93 28 28' - Bottom of boring 29 403.93 30 402.93 401.93 400.93 32 399.93 33 398.93 34 35 397.93 36 396.93 37 395.93 394.93 38 39 393.93 392.93 40 391.93 41 42 390.93 389.93 43 388.93 44

Form GS9901 8-19-2008

45

46

47 48

49

<u>50</u> 51

52 53

54

55

387.93

386.93 385.93

384.93

383.93 382.93

381.93

379.93

378.93 377.93

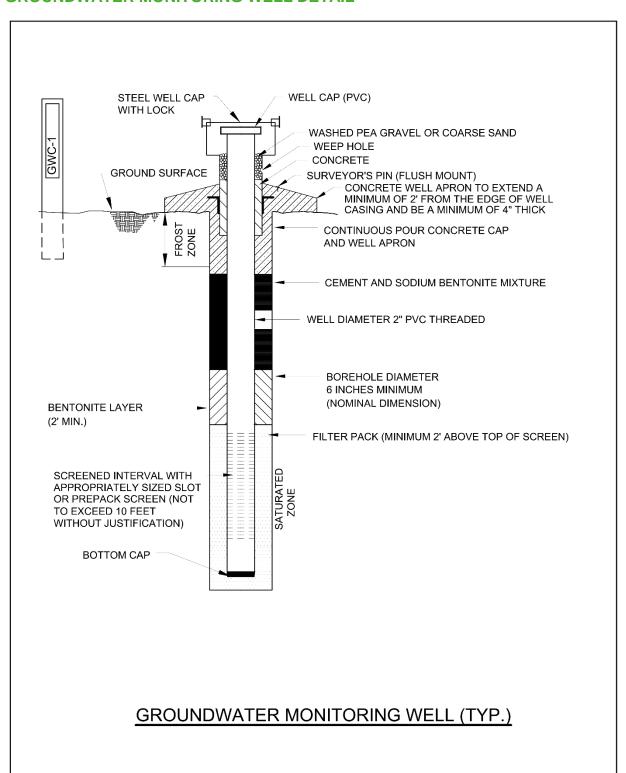
WELL CONSTRUCTION LOG	Southern Company Genera	tion	_
PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear		WELL
	DRILLER: S. Gautney		NAME
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C		
LOGGER: L. Millet	DRILLING METHODS: Sonic		GWC-53
DATE CONSTRUCTED: 6/23/2010			
		DEPTH	ELEVATION
		FEET	FT, MSL
Looking Hingod Top		ILLI	I I, WISE
Locking Hinged Top			
1/4-inch Vent	TOP OF RISER	-2.64	435.57
1/4-inch Weep Hole	2" Threaded Riser Cap		
	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
	GROUND SURFACE	0.00	432.93
Y-2	PROTECTIVE CASING		
1	SIZE: 4-inch round		
	TYPE: Anodized Aluminum		
	TTF L. Allouized Aluminum		
Ų	DOTTOM OF PROTECTIVE ANGING		
	BOTTOM OF PROTECTIVE CASING		
	BACKFILL MATERIAL		
	TYPE: Portland Cement Grout		
	AMOUNT: 16 gal		
▼ El. 426.15	RISER CASING		
7/14/2010	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	TOP OF SEAL	16.06	416.87
		10.00	410.07
	ANNULAR SEAL		
	TYPE: 3/8-inch bentonite pellets		
	Enviroplug 50# bags		
	AMOUNT: 0.5 bag		
	TOP OF FILTER PACK	18.06	414.87
	FILTER PACK		
	TYPE: DSI Sand - #2		
	Drillers Services, Inc. 0.5 cubic foot bags		
	AMOUNT: 4 bags		
	PLACEMENT: Tremie; wash with water		
	BOTTOM OF RISER / TOP OF SCREEN	20.06	412.87
	SCREEN		
	DIA: 2-inch		
	TYPE:ASTM-NSF Schedule 40 PVC Prepack		
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch	00.00	400.07
	BOTTOM OF SCREEN	30.06	402.87
	BOTTOM OF CASING	30.36	402.57
H	IOLE DIA: 6"		

PROJECT: Plant Scherer	Southern Company Genera DRILLING CO.: SCS, Inc.	lion	WELL
CCB Storage Facility	DRILLER: Denty		NAME
LOCATION: Cell 1	RIG TYPE: CME 550		10.00
LOGGER: Millet	DRILLING METHODS: HSA		GWC-20
DATE CONSTRUCTED: 10/6/09			
		DEPTH	ELEVATION
		FEET	FT, MSL
Locking Hinged Top			
1/4-inch Vent	TOP OF RISER	-3.27	426.09
1/4-inch Weep Hole	2" Threaded Riser Cap		
	Pea Gravel in annular space		
6-ft x 6-ft x 4" concrete pad			
	GROUND SURFACE	0.00	422.82
X	PROTECTIVE CASING		
\	SIZE: 4x4-inch		
	TYPE: Anodized Aluminum		
	SI NSY		
'	BOTTOM OF PROTECTIVE CASING		
	BACKFILL MATERIAL		
▼ El. 378.97	TYPE: Portland Cement Grout		
12/5/2009	AMOUNT: 15.3 cubic feet		
	RISER CASING		
	DIA: 2-inch		
	TYPE: Schedule 40 PVC		
	JOINT TYPE: Flush Threaded		
	TOP OF SEAL	55.10	367.72
	ANNULAR SEAL		
	TYPE: 1/4-inch coated bentonite pellets 5-gal buckets		
	AMOUNT: 1 bucket PLACEMENT: Tremie		
	TOP OF FILTER PACK	57.03	365.79
	FILTER PACK	07.00	300.73
	TYPE: DSI Sand - 1A (20/30)		
	Drillers Services, Inc.		
	+ AMOUNT: 5 bags		
	PLACEMENT: Tremie; wash with water		
		50.40	
	BOTTOM OF RISER / TOP OF SCREEN	59.13	363.69
	SCREEN DIA: 2-inch		
	TYPE: Schedule 40 PVC Prepack		
	OPENING WIDTH: 0.01-inch		
	OPENING TYPE: Slotted		
	SLOT SPACING: 0.25-inch		
	SLOT LENGTH: 1.5-inch		
	BOTTOM OF SCREEN	69.13	353.69
	15 R	00 15	
	BOTTOM OF CASING	69.43	353.39
	HOLE DIA: 0"		
	HOLE DIA: 9"		
			1

APPENDIX B

GROUNDWATER MONITORING WELL DETAIL

B. GROUNDWATER MONITORING WELL DETAIL



APPENDIX C

GROUNDWATER SAMPLING PROCEDURES

C. GROUNDWATER SAMPLING PROCEDURES

Groundwater sampling will be conducted using USEPA Region 4 Field Quality and Technical Procedures as a guide. The following procedures describe the general methods associated with groundwater sampling at the site. Prior to sampling, the well must be evacuated (purged) to ensure that representative groundwater is obtained. Any item coming in contact with the inside of the well casing or the well water will be kept in a clean container and handled only with gloved hands.

GPC will follow the procedures below at each well to ensure that a representative sample is collected:

- 1) Check the well, the lock, and the locking cap for damage or evidence of tampering. Record observations and notify GPC if it appears that the well has been compromised.
- 2) Measure and record the depth to water in all wells to be sampled prior to purging. Static water levels will be measured from each well, within a 24-hour period. The water level measuring device will be decontaminated prior to lowering in each well.
- 3) Install Pump: If a dedicated pump is not present, slowly lower the submersible pump into the well to the midpoint of the well screen or a depth otherwise approved by the hydrogeologist or project scientist. In case of peristaltic pump, the tubing will be likewise lowered slowly to the target depth. The pump intake or tubing for peristaltic pump must be kept at least two (2) feet above the bottom of the well to prevent disturbance and suspension of any sediment present in the bottom of the well. Record the depth to which the pump is lowered. Non-dedicated pumps and wiring will be decontaminated before use and between well locations using procedures described in the latest version of the Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division (SESD) Operating Procedure for Field Equipment Cleaning and Decontamination as a guide.
- 4) Measure Water Level: Immediately prior to purging, measure the water level again with the pump in the well. Leave the water level measuring device in the well.
- 5) Purge Well: Begin pumping the well at approximately 100 to 500 milliliters per minute (ml/min). Monitor the water level continually. Maintain a steady flow rate that results in a stabilized water level with 0.3 ft. or less of variability. Avoid entraining air in the tubing. Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.
- Monitor Indicator Parameters: Monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, ORP, and dissolved oxygen (DO)) approximately every three to five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings at a minimum:
 - ±0.1 S.U. for pH
 - ±5 % for specific conductance (conductivity)
 - ±10% for DO where DO>0.5 mg/L. If DO<0.5 mg/L no stabilization criteria apply
 - ≤10 NTUs for turbidity
 - Temperature Record only, not used for stabilization criteria
 - ORP Record only, not used for stabilization criteria.

- 7) Collect samples at a flow rate between 50 and 250 mL/min and such that drawdown of the water level within the well is stable. Flow rate must be reduced if excessive drawdown is observed during sampling. Sample containers should be filled with minimal turbulence by allowing the groundwater to flow from the tubing gently down the inside of the container.
- 8) S)Compliance samples will be unfiltered; however, to determine if turbidity is affecting sample results, a second sample may be filtered in the field prior to being placed in a sample container, clearly marked as filtered and preserved. Filtering will be accomplished by the use of 0.45-micron filters on the sampling line. At least two filter volumes of sample will pass through before filling sample containers. Filtered samples are not considered compliance samples and are only used to evaluate the effects of turbidity.
- 9) Sample bottles will be filled, capped, and placed in an ice containing cooler immediately after sampling where temperature control is required. Samples that do not require temperature control will be placed in a clean and secure container.
- 10) Sample containers and preservative will be appropriate for the analytical method being used.
- 11) Information contained on sample container labels will include:
 - a) Name of facility
 - b) Date and time of sampling
 - c) Sample description (well number)
 - d) Sampler's initials
 - e) Preservatives
 - f) Analytical method(s)
- 12) After samples are collected, samplers will remove non-dedicated equipment. Upon completion of field activity the well will be closed and locked.
- 13) Samples will be delivered to the laboratory following appropriate chain-of-custody (COC) and temperature control requirements. The goal for sample delivery will be within 48 hours of collection. If delivery is delayed, samples should not be analyzed after the method-prescribed hold time.

Throughout the sampling process new nitrile gloves will be worn by the sampling personnel. A clean pair of new, disposable gloves will be worn each time a different location is sampled and new gloves donned prior to filling sample bottles. Gloves will be discarded after sampling each well and before sampling the next well.

The goal when sampling is to attain a turbidity of less than 5 NTUs however, samples may be collected where turbidity is less than 10 NTUs and the stabilization criteria described above are met.

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

- If turbidity remains above 5 NTUs but is less than 10 NTUs, and other parameters are stabilized, the well can be sampled.
- Where turbidity remains above 10 NTUs, an unfiltered sample will be collected followed by a second 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.

APPENDIX C

SURFACE WATER SAMPLING PROCEDURES AND ANALYTICAL REQUIREMENTS

D. SURFACE WATER SAMPLING AND ANALYSIS PROCEDURES

Surface water samples will be collected in accordance with the general procedures outlined below if flowing water is observed at each sampling location. These procedures were developed using field sampling guidelines described in the *USEPA Region 4 Field Branches Quality System and Technical Procedures* (https://www.epa.gov/quality/quality-system-and-technical-procedures-sesd-field-branches). Surface water samples will be analyzed for the parameters contained in Table 1 and include both Appendix III and Appendix IV constituents.

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 samples:

- a) Hold the bottle near the base with one hand, and with the other, remove the cap.
- a) 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.
- b) Hold the container underneath the water surface and allow the container to be filled with water. Remove the container from underneath the surface and place the cap back on the container.
- c) Label the sample container to, at a minimum, include: Sample Number, Name of Collector, Date and Time of Collection, and Place/Point of Collection.
- d) Place the samples in a cooler containing water-ice, if required, for courier or hand delivery to the laboratory within the sample hold times.
- e) Follow COC and temperature protocols.

The minimum sampling frequency for surface water will be semiannual.



golder.com