2.4.13 Accidental Releases of Liquid Effluents in Ground and Surface Waters

2.4.13.1 Groundwater

This section provides a conservative analysis of a postulated, accidental liquid release of effluents to the groundwater at the VEGP site. The accident scenario is described. The conceptual model used to evaluate radionuclide transport is presented, along with potential pathways of contamination to water users. The radionuclide transport analysis is described, and the results are summarized. The radionuclide concentrations to which a water user might be exposed are compared against the regulatory limits.

Results are considered acceptable if the concentrations are less than the maximum permissible concentrations (MPCs) included in 10 CFR Part 20, Appendix B, Table 2, Column 2. Because the identity and concentration of each radionuclide in the mixture are known, the ratio present in the mixture and the concentration otherwise established in 10 CFR Part 20, Appendix B, for the specific radionuclide not in a mixture must also be determined. The sum of such ratios for all of the radionuclides in the mixture may not exceed "1" (i.e., "unity"). These criteria apply to the nearest potable water supply in an unrestricted area.

2.4.13.1.1 Accident Scenario

The accident scenario has been selected based on information developed by Westinghouse to assist AP1000 COL applicants in evaluating the accidental liquid release of effluents **(Westinghouse 2006)**. The accident scenario assumes an instantaneous release from one of the two effluent holdup tanks located in the lowest level of the AP1000 auxiliary building.

There are two effluent holdup tanks, each with a capacity of 28,000 gal., for each AP1000 unit. These tanks have both the highest potential radionuclide concentrations and the largest volume. Therefore, they have been selected by Westinghouse as the limiting tanks for evaluating an accidental release of liquid effluents that could lead to the most adverse contamination of groundwater or surface water, via the groundwater pathway.

Westinghouse estimated the radionuclide concentrations of the effluent holdup tanks to be 101 percent of the reactor coolant. Westinghouse determined the radionuclide concentrations in reactor coolant itself to be as follows:

- For tritium (H-3), a coolant concentration of 1.0 µCi/g should be used.
- Corrosion products (Cr-51, Mn-54, Mn-56, Fe-55, Fe-59, Co-58 and Co-60) should be taken directly from the AP1000 DCD, Table 11.1-2, *Design Basis Reactor Coolant Activity*.
- Other radionuclides should be based on the AP1000 DCD, Table 11.1-2 multiplied by 0.12/0.25 to adjust the failed fuel rate from the design basis to a conservatively bounding value for this analysis.

Based on these recommendations, the expected radionuclide concentrations in the effluent holdup tanks have been calculated, and the results are summarized in Table 2.4.13-1.

2.4.13.1.2 Conceptual Model

Figure 2.4.13-1 illustrates the conceptual model used to evaluate an accidental liquid release of effluent to groundwater, or to surface water via the groundwater pathway. The key elements and assumptions embodied in the conceptual model are described and discussed below.

As indicated in Section 2.4.13.1.1, the effluent holdup tanks are assumed to be the source of the release, with each tank having a volume of 28,000 gal. and the radionuclide concentrations as summarized in Table 2.4.13-1. These tanks are located at the lowest level of the auxiliary building, which has a floor elevation of approximately 186.5 ft msl and is approximately 25 to 35 ft above the water table, based on water table contour plots presented on Figures 2.4.12-7 through 2.4.12-11. One of these tanks is postulated to rupture, and 80 percent of the liquid volume (22,400 gal.) is assumed to be released in accordance with Section 15.7.3 of NUREG-0800. Flow from a tank rupture would initially flood the tank room and begin to flow to the auxiliary building radiologically controlled area sump via floor drains as described in Section 3.4.1.2.2.2 of the AP1000 DCD. It is assumed that sump pumps are inoperable. According to the AP1000 DCD, this would result in the 22,400 gal. release flooding the balance of level 1 of the auxiliary building via the interconnecting floor drains. Once level 1 is flooded, it is assumed that a pathway is created that would allow the entire 22,400 gal. to enter the groundwater (unconfined aquifer) instantaneously. This assumption is very conservative because it requires failure of the floor drain system, plus it ignores the barriers presented by the 6-ft-thick basemat and the sealed, 3-ft-thick exterior walls of the AP1000 auxiliary building. Furthermore, there is a minimum of 20 ft of unsaturated zone beneath the basemat. Radionuclide concentrations would be attenuated during unsaturated zone transport as a consequence of adsorption, dispersion, and radioactive decay, which is not considered in this conservative analysis.

With the postulated instantaneous release of the contents of an effluent holdup tank to groundwater, radionuclides would enter the unconfined aquifer and migrate with the groundwater in the direction of decreasing hydraulic head. Hydraulic head contour maps for the unconfined aquifer presented in Figures 2.4.12-7 through 2.4.12-9 indicate that the groundwater pathway from a point of release in either of the AP1000 auxiliary buildings would be northward to Mallard Pond, a groundwater discharge area, as discussed in Section 2.4.12.1.3. Because the underlying Blue Bluff Marl has a very low vertical permeability, as is described in Section 2.4.12, groundwater flow in the unconfined aquifer is predominantly horizontal. The flow path is assumed to be a straight line between either auxiliary building and the south side of Mallard Pond, a distance of approximately 2,450 ft based on Figure 1-4. During saturated zone transport, radionuclide concentrations of the liquid released to the water table would be reduced by the processes of adsorption, hydrodynamic dispersion, and radioactive decay. There are no

existing water-supply wells between the postulated release points and Mallard Pond that withdraw water from the unconfined aquifer. Based on the data in Table 2.4.12-10, all water-supply wells for the existing VEGP plant withdraw their water from the deeper, confined Tertiary and Cretaceous aquifers.

Mallard Pond serves as a groundwater discharge area for the unconfined aquifer. The radionuclides associated with a liquid release would enter the surface water system via Mallard Pond. Radionuclide concentrations would be diluted in the pond and in the stream running from the pond to the Savannah River. Groundwater flow into Mallard Pond is continuous, and the pond level is controlled by a spillway. Measurements of stream flow discharge from Mallard Pond and at points downstream indicate that flow increases progressively in magnitude before discharging to the Savannah River **(Bechtel 1985)**. Upon discharge to the Savannah River, the stream flow would mix with the Savannah River flow, resulting in significantly further dilution prior to withdrawal by the nearest surface water user. As noted in Section 2.4.1, the nearest downstream industrial surface water users include the Fort James Operating Company and the Georgia Power Company. Both companies operate river intakes that withdraw water from the Savannah River near River Mile 45, which is about 106 miles downstream of the VEGP site. The City of Savannah Municipal and Industrial Plant, and the Beaufort-Jasper County Water and Sewer Authority are the nearest downstream municipal water users. The City of Savannah obtains water from Abercorn Creek where it enters the Savannah River near River Mile 29, which is about 122 miles downstream from the VEGP site. Beaufort-Jasper County withdraws water from the Savannah River via an 18-mile canal.

2.4.13.1.3 Radionuclide Transport Analysis

A radionuclide transport analysis has been conducted to estimate the radionuclide concentrations that might expose existing and future water users based on an instantaneous release of the radioactive liquid of an AP1000 effluent holdup tank. Analysis of liquid effluent release commenced with the simplest of models, using demonstratively conservative assumptions and coefficients. Radionuclide concentrations resulting from the preliminary analysis were then compared against the MPCs identified in 10 CFR Part 20, Appendix B, Table 2, Column 2, to determine acceptability. Further analysis, using progressively more realistic and less conservative assumptions and modeling techniques, was conducted when the preliminary results were not acceptable.

Radionuclide transport along a groundwater pathline is governed by the advection-dispersion-reaction equation **(Javandel et al. 1984)**, which is given as

$$R\frac{\partial C}{\partial t} = D\frac{\partial^2 C}{\partial x^2} - v\frac{\partial C}{\partial x} - \lambda RC \qquad (2.4.13\text{-}1)$$

where: C = radionuclide concentration; R = retardation factor; D = coefficient of longitudinal hydrodynamic dispersion; v = average linear velocity; and λ = radioactive decay constant. The retardation factor is defined from the relationship

$$R = 1 + \frac{\rho_b K_d}{n_e} \quad (2.4.13\text{-}2)$$

where: ρ_b = bulk density; K_d = distribution coefficient; and n_e = effective porosity. The average linear velocity is determined using Darcy's law, which is

$$v = -\frac{K}{n_e}\frac{dh}{dx} \quad (2.4.13\text{-}3)$$

where: K = hydraulic conductivity; and dh/dx = hydraulic gradient. The radioactive decay constant can be written as

$$\lambda = \frac{\ln 2}{t_{1/2}} \quad (2.4.13\text{-}4)$$

where $t_{1/2}$ = radionuclide half-life. Conservatively neglecting hydrodynamic dispersion, Equation 2.4.13-1 can be integrated to yield

$$C = C_0 \exp(-\lambda t) \quad (2.4.13\text{-}5)$$

where: C = radionuclide concentration; C_0 = initial radionuclide concentration; $t = LR/v$ = radionuclide travel time; and L = groundwater pathline length.

To estimate the radionuclide concentrations in groundwater discharging to Mallard Pond, Equation 2.4.13-5 was applied along the groundwater pathline that would originate at either of the liquid effluent release points beneath the AP1000 auxiliary buildings and terminate at Mallard Pond. The analysis was performed sequentially as described below.

2.4.13.1.3.1 Transport Considering Radioactive Decay Only

An initial screening analysis was performed considering radioactive decay only. This analysis assumed that all radionuclides migrate at the same rate as groundwater and considered no adsorption and retardation, which would otherwise result in a longer travel time and more radioactive decay. The concentrations of the radionuclides appearing in Table 2.4.13-1 were decayed for a period equal to the groundwater travel time from the point of release to Mallard Pond, using Equation 2.4.13-5 with R = 1. Radionuclides having concentrations less than 1 percent of their respective MPCs were eliminated from consideration because their concentrations would be well below their regulatory limits. Any radionuclides having a concentration greater than or equal to 1 percent of their MPC were retained for further evaluation.

Evaluating transport considering radioactive decay only requires an estimate of the groundwater travel time. The groundwater travel time has been estimated by considering the locations of the effluent holdup tanks, the hydrogeologic properties of the backfill, and conservative estimates of the hydraulic gradient and hydraulic conductivity of the water table aquifer. The total saturated zone travel time is the sum of three components: (1) travel time in the backfill, (2) travel time in the water table aquifer in the area between the backfill and the point at which the hydraulic gradient steepens near OW-1005, and (3) travel time between OW-1005 and Mallard Pond. The travel time in each is a function of the travel distance, hydraulic conductivity, effective porosity, and hydraulic gradient. The basis for estimating the travel time in each of these three segments is described below.

1. The travel distance in the backfill was determined to be about 460 ft, which represents the shortest distance between the portion of level 1 of the auxiliary building potentially flooded by a tank rupture and the northern extent of the power block excavation. This distance considers the 71 ft between column lines 7.3 and 11 of the auxiliary building (AP1000 Doc. No. APP-1010-P2-001), the 310 ft length of the turbine building (AP1000 Doc. No. APP-0030-X4-001), and the 80 ft between the turbine building and the northern extent of the power block excavation. A hydraulic conductivity of 1,220 ft/yr (3.3 ft/day) was conservatively assigned to the backfill, which is the maximum in situ value reported for the VEGP site and was obtained from Table 2.4.12-15 of the UFSAR **(SNC 2003)**. The effective porosity of the backfill was taken to be 0.34 as established in Section 2.4.13.1.1 of the UFSAR **(SNC 2003)**. Because the backfill for Units 3 and 4 will be obtained from the borrow areas used for Units 1 and 2 and compacted to the same criteria, the hydraulic conductivity and porosity values observed for Units 1 and 2 should be representative of Units 3 and 4. The hydraulic gradient in the backfill was conservatively estimated to be 0.014 ft/ft using the maximum water level observed at OW-1009 (El. 163.03 ft msl), the minimum water level observed at OW-1005 (El. 132.53 ft msl), and the distance between the two observation wells (2,209 ft). Based on the aforementioned, conservatively-established parameters, the groundwater travel time in the backfill was calculated to be 9.16 years.
2. The travel distance between the northern extent of the power block excavation and OW-1005 was determined to be 990 ft, based on the location of OW-1005. Geotechnical borings included in Appendix 2.5A along with water table contour maps included in Section 2.4.12 indicate that groundwater flow from the power block area to the north and toward Mallard Pond will occur in the Utley limestone, because the data suggests that the limestone is continuous along this pathway. Test results given in Table 2.4.12-3 indicate that the in situ hydraulic conductivity of the Utley limestone ranges from 0.12 to 2.7 ft/day (boring logs for wells OW-1003, OW-1005, OW-1006, OW-1007, OW-1009, OW-1010, OW-1013, and OW-1015 indicate completion in the Utley limestone). UFSAR

(SNC 2003) hydraulic testing results, adjacent to VEGP Units 1 and 2, indicate the possibility of localized, highly permeable zones in the Utley limestone. To address the possibility that similar zones are present north of Units 3 and 4, the maximum value reported in the UFSAR, 125,400 ft/year (343 ft/day), is used in this analysis. The effective porosity of the water table aquifer has been estimated to be 0.32 based on site-specific measurements, as noted in Section 2.4.12.1.4. Effective porosities of limestone formations are typically lower. A lower value of 0.10 has been adopted from the literature **(Heath 1998)** to provide a conservative estimate of the average linear velocity. The hydraulic gradient over this segment is assumed to be the same as that in the backfill (0.014 ft/ft). Using the parameters described above, a groundwater travel time of 0.06 year is estimated for this segment.

3. The travel distance between OW-1005 and Mallard Pond is about 1,000 ft, based on site topographic surveys. As with the prior segment, groundwater flow occurs in the Utley limestone, and the same values for hydraulic conductivity (125,400 ft/yr) and effective porosity (0.10) are adopted. The hydraulic gradient is estimated to be 0.023 ft/ft using the maximum water level observed at OW-1005 (133.20 ft msl), the water surface elevation in Mallard Pond (110 ft msl), and the distance between the two (1,000 ft). A groundwater travel time of 0.03 year is estimated for this segment based the above parameters.

Summing the above travel times, the total travel time for this analysis is 9.25 years. Using Equation 2.4.13-5, the initial concentrations given in Table 2.4.13-1 were decayed for a period of 9.25 years. Table 2.4.13-2 summarizes the results considering only radioactive decay and identifies those radionuclides that would exceed their MPC by more than 1 percent. These include H-3, Mn-54, Fe-55, Co-60, Sr-90, I-129, Cs-134, and Cs-137.

2.4.13.1.3.2 Transport Considering Radioactive Decay and Adsorption

Radionuclides retained from the screening analysis (H-3, Mn-54, Fe-55, Co-60, Sr-90, I-129, Cs-134, and Cs-137) were further evaluated considering adsorption and retardation in addition to radioactive decay. Distribution coefficients values for Co-60, Sr-90, Cs-134, and Cs-137 were determined based on laboratory analyses of soil samples obtained from the VEGP site **(Kaplan and Millings 2006; MACTEC 2006)** and are shown in Table 2.4.13-3. Sixteen soil samples were taken from shallow test pits located in potential borrow source areas for backfill that will be required for the new AP1000 units. Laboratory testing of these backfill samples yielded distribution coefficients that range from 1.4 to 15.3 mL/g for Co, 6.0 to 51.7 mL/g for Sr, and 3.5 to 56.2 mL/g for Cs. Three additional soil samples were obtained from a vibratory boring located near B-1003. The samples acquired from the vibratory boring represent the Utley limestone based on the boring log for B-1003. Testing of the Utley limestone samples resulted

in distribution coefficients that range from 3.9 to 21.3 mL/g for Co, 14.4 to 17.4 mL/g for Sr, and 22.7 to 33.2 mL/g for Cs.

Distribution coefficients for Co, Sr, and Cs in the backfill were conservatively assigned the minimum value determined from the 16 samples (1.4 mL/g for Co, 6.0 mL/g for Sr, and 3.5 mL/g for Cs). Distribution coefficients for Co, Sr, and Cs in the Utley limestone were conservatively assigned the minimum value observed for the three vibratory boring samples (3.9 mL/g for Co, 14.4 mL/g for Sr, and 22.7 mL/g for Cs). Distribution coefficients for H-3 and I-129, which have no or little tendency for adsorption, were taken to be zero for both the backfill and Utley limestone. Distribution coefficients for Mn-54 and Fe-55 were conservatively assumed to be zero in both the backfill and Utley limestone.

Retardation factors were calculated using Equation 2.4.13-2 with the distribution coefficients as stated above, effective porosities of 0.34 for the backfill and 0.10 for the Utley limestone, and a bulk density of 1.60 g/cm^3. Total radionuclide travel times were calculated by summing the radionuclide travel times in the backfill and the Utley limestone. Radionuclide concentrations were then determined at the point of discharge to Mallard Pond using Equation 2.4.13-5 and the appropriate initial concentration, decay rate, and total travel time. Results are summarized in Table 2.4.13-4 and indicate that H-3, Mn-54, Fe-55, Sr-90, I-129, and Cs-137 would exceed their respective MPC by more than 1 percent.

2.4.13.1.3.3 Transport Considering Radioactive Decay, Adsorption, and Dilution

The H-3, Mn-54, Fe-55, Sr-90, I-129, and Cs-137 discharging to surface water (Mallard Pond) would mix with other, uncontaminated, groundwater discharging to surface water. A dilution factor was estimated to account for the mixing and dilution of contaminated groundwater with uncontaminated groundwater. The dilution factor is the ratio of the rate at which the postulated release would discharge to surface water (Mallard Pond) as contaminated groundwater to the total rate of groundwater discharge to surface water, which would include both uncontaminated and contaminated groundwater. The magnitude of the dilution factor was estimated as described below.

The rate at which a release from an effluent holdup tank discharges to surface water (Mallard Pond) is determined by the transport characteristics of the water table aquifer. A release from an effluent holdup tank would undergo unsaturated zone transport beneath the auxiliary building, followed by saturated zone transport first through the backfill and then through the Utley limestone, and would finally discharge to Mallard Pond. The discharge rate itself is a function of the Darcy velocity and the assumed volume and dimensions of the resulting contaminant slug. The Darcy velocity was calculated to be 0.047 ft/day, using a hydraulic conductivity of 3.3 ft/day and a hydraulic gradient of 0.014 ft/ft. These values represent the hydrogeologic characteristics of the backfill as described previously. The volume of the liquid release has been assumed to be 22,400 gal. (2,995 ft^3), which represents 80 percent of the

28,000 gal. capacity of one effluent holdup tank (NUREG-0800, Section 15.7.3 recommends that 80 percent of the liquid volume be considered in this analysis). Considering the effective porosity of the backfill (0.34), the release would occupy about 8,810 ft^3 of the saturated backfill. The shape of the resulting contaminant slug is assumed to be square in plan view and extend vertically throughout the entire saturated thickness of the backfill. Using 20 ft as a representative saturated thickness (water table to top of Blue Bluff Marl), the slug would have an area of about 440 ft^2 in plan view and a width of about 21 ft. The cross-sectional area of the contaminant slug normal to the groundwater flow direction would therefore be 20 ft by 21 ft or about 420 ft^2. The discharge rate of the contaminant slug is then the product of the Darcy velocity and the cross-sectional area, 20 ft^3/day or 0.10 gpm. The rate of total groundwater discharge to surface water has been estimated as 1,125 gpm at a point just downstream of the confluence of the stream discharging from Mallard Pond and its west branch. This value is the result of stream flow measurements that were taken in the months of June and July to support the licensing of VEGP Units 1 and 2 **(Bechtel 1985)**. Because the stream discharging from Mallard Pond and its west branch are both perennial streams, the stream flow measurements would represent the groundwater discharge. The resulting dilution factor is calculated as the ratio of 0.10 gpm to 1,125 gpm, or 9.1E-05.

This dilution factor is applied to the H-3, Mn-54, Fe-55, Sr-90, I-129, and Cs-137 concentrations reported in Table 2.4.13-4 to account for dilution in addition to radioactive decay and adsorption. Table 2.4.13-5 summarizes the resulting concentrations, which would represent the concentrations in the surface water at a point just downstream of the confluence of the stream discharging from Mallard Pond and its west branch. It is seen that the concentrations of each of these radionuclides are below their respective MPCs.

2.4.13.1.4 Compliance with 10 CFR Part 20

The radionuclide transport analysis presented in Section 2.4.13.1.3 demonstrates that each of the radionuclides that could be accidentally released to groundwater would be individually below its MPC. However, 10 CFR Part 20, Appendix B, Table 2, imposes additional requirements when the identity and concentration of each radionuclide in a mixture are known. In this case, the ratio present in the mixture and the concentration otherwise established in 10 CFR Part 20 Appendix B for the specific radionuclide not in a mixture must be determined. The sum of such ratios for all of the radionuclides in the mixture may not exceed “1” (i.e., “unity”) as indicated by Note 4 in Appendix B, 10 CFR Part 20.

This sum of fractions approach was applied to the radionuclide concentrations conservatively estimated in Section 2.4.13.1.3. Results are summarized in Table 2.4.13-6. The ratios for the mixture sum to 0.32, which demonstrates that an accidental liquid release of effluents in groundwater would not exceed 10 CFR Part 20 limits in the Mallard Pond stream before reaching the VEGP site property (EAB).

Compliance with 10 CFR Part 20 is further assured considering that the point at which compliance has been demonstrated is within the restricted area and not a potable water source. The stream discharging from Mallard Pond is a gaining stream that discharges to, and mixes with, the Savannah River. The entire reach of this stream, about 1.0 mi. in length, is within the restricted area and not a potable water supply. The nearest potable water supply in an unrestricted area to which the 10 CFR Part 20 requirements would apply is the Savannah River. Mixing of the tributary stream flow with the Savannah River flow would dilute radionuclide concentrations further. The magnitude of this additional dilution can be estimated from the ratio of the tributary stream flow rate (1,125 gpm) to the Savannah River flow rate. Using the 100-year drought flow, given as 3,298 ft^3/sec (1,480,000 gpm) in Section 2.4.11, to conservatively represent the Savannah River flow rate, a dilution factor of 7.6E-04 is calculated. Accounting for this additional dilution would further reduce radionuclide concentrations by a factor of about 1,000. Consequently, the ratios for the mixture would sum to a value much less than unity and well below the compliance limit.

2.4.13.2 Surface Water

No outdoor tanks contain radioactivity in the Westinghouse AP1000 design **(Westinghouse 2006)**. In particular, the AP1000 design does not require boron changes for load follow and does not recycle boric acid or reactor coolant water, so the boric acid tank is not radioactive. Because no outdoor tanks contain radioactivity, no accident scenario could result in the release of liquid effluent directly to the surface water.

Table 2.4.13-1 Radionuclide Concentrations in the AP1000 Effluent Holdup Tanks

Radionuclide	Design Basis Reactor Coolant Activity[1] (μCi/g)	Reactor Coolant Concentrations[2] (μCi/cm^3)	Effluent Holdup Tank Concentrations[3] (μCi/cm^3)
H-3	-	1.00E+00	1.01E+00
Cr-51	1.30E-03	1.30E-03	1.31E-03
Mn-54	6.70E-04	6.70E-04	6.77E-04
Mn-56	1.70E-01	1.70E-01	1.72E-01
Fe-55	5.00E-04	5.00E-04	5.05E-04
Fe-59	1.30E-04	1.30E-04	1.31E-04
Co-58	1.90E-03	1.90E-03	1.92E-03
Co-60	2.20E-04	2.20E-04	2.22E-04
Br-83	3.20E-02	1.54E-02	1.55E-02
Br-84	1.70E-02	8.16E-03	8.24E-03
Br-85	2.00E-03	9.60E-04	9.70E-04
Rb-88	1.50E+00	7.20E-01	7.27E-01
Rb-89	6.90E-02	3.31E-02	3.35E-02
Sr-89	1.10E-03	5.28E-04	5.33E-04
Sr-90	4.90E-05	2.35E-05	2.38E-05
Sr-91	1.70E-03	8.16E-04	8.24E-04
Sr-92	4.10E-04	1.97E-04	1.99E-04
Y-90	1.30E-05	6.24E-06	6.30E-06
Y-91m	9.20E-04	4.42E-04	4.46E-04
Y-91	1.40E-04	6.72E-05	6.79E-05
Y-92	3.40E-04	1.63E-04	1.65E-04
Y-93	1.10E-04	5.28E-05	5.33E-05
Nb-95	1.60E-04	7.68E-05	7.76E-05
Zr-95	1.60E-04	7.68E-05	7.76E-05
Mo-99	2.10E-01	1.01E-01	1.02E-01
Tc-99m	2.00E-01	9.60E-02	9.70E-02
Ru-103	1.40E-04	6.72E-05	6.79E-05
Rh-103m	1.40E-04	6.72E-05	6.79E-05
Rh-106	4.50E-05	2.16E-05	2.18E-05
Ag-110m	4.00E-04	1.92E-04	1.94E-04
Te-127m	7.60E-04	3.65E-04	3.68E-04
Te-129m	2.60E-03	1.25E-03	1.26E-03
Te-129	3.80E-03	1.82E-03	1.84E-03
Te-131m	6.70E-03	3.22E-03	3.25E-03
Te-131	4.30E-03	2.06E-03	2.08E-03
Te-132	7.90E-02	3.79E-02	3.83E-02
Te-134	1.10E-02	5.28E-03	5.33E-03
I-129	1.50E-08	7.20E-09	7.27E-09

Table 2.4.13-1 (cont.) Radionuclide Concentrations in the AP1000 Effluent Holdup Tanks

Radionuclide	Design Basis Reactor Coolant Activity[1] (μCi/g)	Reactor Coolant Concentrations[2] (μCi/cm^3)	Effluent Holdup Tank Concentrations[3] (μCi/cm^3)
I-130	1.10E-02	5.28E-03	5.33E-03
I-131	7.10E-01	3.41E-01	3.44E-01
I-132	9.40E-01	4.51E-01	4.56E-01
I-133	1.30E+00	6.24E-01	6.30E-01
I-134	2.20E-01	1.06E-01	1.07E-01
I-135	7.80E-01	3.74E-01	3.78E-01
Cs-134	6.90E-01	3.31E-01	3.35E-01
Cs-136	1.00E+00	4.80E-01	4.85E-01
Cs-137	5.00E-01	2.40E-01	2.42E-01
Cs-138	3.70E-01	1.78E-01	1.79E-01
Ba-137m	4.70E-01	2.26E-01	2.28E-01
Ba-140	1.00E-03	4.80E-04	4.85E-04
La-140	3.10E-04	1.49E-04	1.50E-04
Ce-141	1.60E-04	7.68E-05	7.76E-05
Ce-143	1.40E-04	6.72E-05	6.79E-05
Pr-143	1.50E-04	7.20E-05	7.27E-05
Ce-144	1.20E-04	5.76E-05	5.82E-05
Pr-144	1.20E-04	5.76E-05	5.82E-05

[1] Values from AP1000 DCD Table 11.1-2.

[2] For tritium (H-3) a coolant concentration of 1.0 μCi/g is used; corrosion products (Cr-51, Mn-54, Mn-56, Fe-55, Fe-59, Co-58 and Co-60) are taken directly from the AP1000 DCD, Table 11.1-2; and other radionuclides are based on the AP1000 DCD, Table 11.1-2 multiplied by 0.12/0.25. The density of all liquids is assumed to be 1 g/cm^3.

[3] Values are 101% of the reactor coolant concentrations.

Table 2.4.13-2 Results of Transport Analysis Considering Radioactive Decay Only

Radionuclide	Effluent Holdup Tank Concentration[1] ($\mu Ci/cm^3$)	Half-life[2] (days)	Decay Rate[3] ($days^{-1}$)	MPC[4] ($\mu Ci/cm^3$)	Groundwater Concentration[5] ($\mu Ci/cm^3$)	Groundwater Concentration/ MPC
H-3	1.01E+00	4.51E+03	1.54E-04	1.00E-03	6.01E-01	6.01E+02
Cr-51	1.31E-03	2.77E+01	2.50E-02	5.00E-04	2.57E-40	5.14E-37
Mn-54	6.77E-04	3.13E+02	2.21E-03	3.00E-05	3.82E-07	1.27E-02
Mn-56	1.72E-01	1.07E-01	6.48E+00	7.00E-05	0.00E+00	0.00E+00
Fe-55	5.05E-04	9.86E+02	7.03E-04	1.00E-04	4.70E-05	4.70E-01
Fe-59	1.31E-04	4.45E+01	1.56E-02	1.00E-05	1.85E-27	1.85E-22
Co-58	1.92E-03	7.08E+01	9.79E-03	2.00E-05	8.35E-18	4.18E-13
Co-60	2.22E-04	1.93E+03	3.59E-04	3.00E-06	6.60E-05	2.20E+01
Br-83	1.55E-02	9.96E-02	6.96E+00	9.00E-04	0.00E+00	0.00E+00
Br-84	8.24E-03	2.21E-02	3.14E+01	4.00E-04	0.00E+00	0.00E+00
Br-85	9.70E-04	2.01E-03	3.44E+02	1.00E+00	0.00E+00	0.00E+00
Rb-88	7.27E-01	1.24E-02	5.59E+01	4.00E-04	0.00E+00	0.00E+00
Rb-89	3.35E-02	1.06E-02	6.54E+01	9.00E-04	0.00E+00	0.00E+00
Sr-89	5.33E-04	5.05E+01	1.37E-02	8.00E-06	3.91E-24	4.89E-19
Sr-90	2.38E-05	1.06E+04	6.54E-05	5.00E-07	1.91E-05	3.82E+01
Sr-91	8.24E-04	3.96E-01	1.75E+00	2.00E-05	0.00E+00	0.00E+00
Sr-92	1.99E-04	1.13E-01	6.16E+00	4.00E-05	0.00E+00	0.00E+00
Y-90	6.30E-06	2.67E+00	2.60E-01	7.00E-06	0.00E+00	0.00E+00
Y-91m	4.46E-04	3.45E-02	2.01E+01	2.00E-03	0.00E+00	0.00E+00
Y-91	6.79E-05	5.85E+01	1.18E-02	8.00E-06	2.82E-22	3.53E-17
Y-92	1.65E-04	1.48E-01	4.68E+00	4.00E-05	0.00E+00	0.00E+00
Y-93	5.33E-05	4.21E-01	1.65E+00	2.00E-05	0.00E+00	0.00E+00
Nb-95	7.76E-05	3.52E+01	1.97E-02	3.00E-05	1.01E-33	3.36E-29
Zr-95	7.76E-05	6.40E+01	1.08E-02	2.00E-05	1.01E-20	5.03E-16
Mo-99	1.02E-01	2.75E+00	2.52E-01	2.00E-05	0.00E+00	0.00E+00
Tc-99m	9.70E-02	2.51E-01	2.76E+00	1.00E-03	0.00E+00	0.00E+00
Ru-103	6.79E-05	3.93E+01	1.76E-02	3.00E-05	9.11E-31	3.04E-26
Rh-103m	6.79E-05	3.90E-02	1.78E+01	6.00E-03	0.00E+00	0.00E+00
Rh-106	2.18E-05	4.63E-04	1.50E+03	NA[6]	0.00E+00	
Ag-110m	1.94E-04	2.50E+02	2.77E-03	6.00E-06	1.66E-08	2.77E-03
Te-127m	3.68E-04	1.09E+02	6.36E-03	9.00E-06	1.73E-13	1.92E-08
Te-129m	1.26E-03	3.36E+01	2.06E-02	7.00E-06	6.90E-34	9.85E-29
Te-129	1.84E-03	4.83E-02	1.44E+01	4.00E-04	0.00E+00	0.00E+00
Te-131m	3.25E-03	1.25E+00	5.55E-01	8.00E-06	0.00E+00	0.00E+00
Te-131	2.08E-03	1.74E-02	3.98E+01	8.00E-05	0.00E+00	0.00E+00
Te-132	3.83E-02	3.26E+00	2.13E-01	9.00E-06	0.00E+00	0.00E+00
Te-134	5.33E-03	2.90E-02	2.39E+01	3.00E-04	0.00E+00	0.00E+00
I-129	7.27E-09	5.73E+09	1.21E-10	2.00E-07	7.27E-09	3.63E-02
I-130	5.33E-03	5.15E-01	1.35E+00	2.00E-05	0.00E+00	0.00E+00
I-131	3.44E-01	8.04E+00	8.62E-02	1.00E-06	1.17E-127	1.17E-121
I-132	4.56E-01	9.58E-02	7.24E+00	1.00E-04	0.00E+00	0.00E+00
I-133	6.30E-01	8.67E-01	7.99E-01	7.00E-06	0.00E+00	0.00E+00
I-134	1.07E-01	3.65E-02	1.90E+01	4.00E-04	0.00E+00	0.00E+00
I-135	3.78E-01	2.75E-01	2.52E+00	3.00E-05	0.00E+00	0.00E+00

Table 2.4.13-2 (cont.) Results of Transport Analysis Considering Radioactive Decay Only

Radionuclide	Effluent Holdup Tank Concentration[1] ($\mu Ci/cm^3$)	Half-life[2] (days)	Decay Rate[3] ($days^{-1}$)	MPC[4] ($\mu Ci/cm^3$)	Groundwater Concentration[5] ($\mu Ci/cm^3$)	Groundwater Concentration/ MPC
Cs-134	3.35E-01	7.53E+02	9.21E-04	9.00E-07	1.50E-02	1.66E+04
Cs-136	4.85E-01	1.31E+01	5.29E-02	6.00E-06	1.17E-78	1.95E-73
Cs-137	2.42E-01	1.10E+04	6.30E-05	1.00E-06	1.96E-01	1.96E+05
Cs-138	1.79E-01	2.24E-02	3.09E+01	4.00E-04	0.00E+00	0.00E+00
Ba-137m	2.28E-01	1.81E-03	3.84E+02	NA[6]	0.00E+00	
Ba-140	4.85E-04	1.27E+01	5.46E-02	8.00E-06	4.20E-84	5.25E-79
La-140	1.50E-04	1.68E+00	4.13E-01	9.00E-06	0.00E+00	0.00E+00
Ce-141	7.76E-05	3.25E+01	2.13E-02	3.00E-05	4.02E-36	1.34E-31
Ce-143	6.79E-05	1.38E+00	5.02E-01	2.00E-05	0.00E+00	0.00E+00
Pr-143	7.27E-05	1.36E+01	5.10E-02	2.00E-05	1.25E-79	6.26E-75
Ce-144	5.82E-05	2.84E+02	2.44E-03	3.00E-06	1.53E-08	5.10E-03
Pr-144	5.82E-05	1.20E-02	5.78E+01	6.00E-04	0.00E+00	0.00E+00

[1] Values from Table 2.4.13-1.

[2] Values from NUREG/CR-5512, Table E.1 **(Kennedy and Strenge 1992)**, and U. S. Department of Health Radiological Health Handbook **(USDOH 1970)** for Sr-92, Rh-106, and Ba-137m.

[3] Values calculated from Equation 2.4.13-4.

[4] Maximum Permissible Concentrations (MPCs) from 10 CFR Part 20, Appendix B, Table 2, Column 2

[5] Values calculated from Equation 2.4.13-5 for a travel time of 9.25 years.

[6] Maximum Permissible Concentration (MPC) is not available.

Table 2.4.13-3 Results of kd Analysis

Soil Sample	K_d Value (mL/g)		
	Co	Sr	Cs
Samples From Potential Borrow Sources Areas			
A-10(a)	8.1	13.2	56.2
C-7	3.9	9.0	14.8
D-10	1.7	7.8	9.9
E-7	10.1	25.7	19.9
E-12	15.3	51.7	10.7
G-9	7.9	9.8	> 25.5
J-11	13.5	9.2	> 47.4
K-10	15.2	10.0	19.3
L-7	1.7	11.4	18.8
M-5	7.3	9.3	16.8
N-3	5.8	10.7	7.8
P-8	6.5	7.0	5.3
Q-7	3.2	9.3	14.6
H-6	1.4	6.0	3.5
S-9	3.0	8.6	19.3
R-8	2.1	10.5	13.5
Samples From Barnwell Formation (Utley Limestone)			
B-1003V-55-65	10.9	17.4	> 30.1
B-1003V-65-75	3.9	15.0	22.7
B-1003V-75-82	21.3	14.4	33.2

Source: Kaplan and Millings 2006

Table 2.4.13-4 Results of Transport Analysis Considering Radioactive Decay and Adsorption

Radionuclide	Backfill			Utley Limestone			Total Travel Time[3] (years)	Groundwater Concentration[4] (μCi/cm^3)	Groundwater Concentration / MPC
	Distribution Coefficient (cm^3/g)	Retardation Factor[1]	Travel Time[2] (years)	Distribution Coefficient (cm^3/g)	Retardation Factor[1]	Travel Time[2] (years)			
H-3	0.0	1.0	9.16	0.0	1.0	0.09	9.25	6.01E-01	6.01E+02
Mn-54	0.0	1.0	9.16	0.0	1.0	0.09	9.25	3.82E-07	1.27E-02
Fe-55	0.0	1.0	9.16	0.0	1.0	0.09	9.25	4.70E-05	4.70E-01
Co-60	1.4	7.6	69.48	3.9	63.4	5.75	75.24	1.15E-08	3.83E-03
Sr-90	6.0	29.2	267.70	14.4	231.4	21.00	288.71	2.41E-08	4.82E-02
I-129	0.0	1.0	9.16	0.0	1.0	0.09	9.25	7.27E-09	3.63E-02
Cs-134	3.5	17.5	159.98	22.7	364.2	33.06	193.03	2.18E-29	2.42E-23
Cs-137	3.5	17.5	159.98	22.7	364.2	33.06	193.03	2.85E-03	2.85E+03

[1] Values calculated from Equation 2.4.13-2 using a bulk density of 1.60 g/cm^3 and effective porosities of 0.34 and 0.10 for the backfill and Utley limestone, respectively.

[2] Travel time calculated as the product of the retardation factor and groundwater travel time (9.16 years for backfill and 0.09 years for Utley limestone).

[3] Total travel time calculated as the sum of backfill and Utley limestone travel times.

[4] Groundwater concentration calculated from Equation 2.4.13-5 using total travel time.

Table 2.4.13-5 Results of Transport Analysis Considering Radioactive Decay, Adsorption, and Dilution

Radionuclide	Groundwater Concentration[1] ($\mu Ci/cm^3$)	Surface Water Concentration[2] ($\mu Ci/cm^3$)	Surface Water Concentration / MPC
H-3	6.01E-01	5.45E-05	5.45E-02
Mn-54	3.82E-07	3.46E-11	1.15E-06
Fe-55	4.70E-05	4.26E-09	4.26E-05
Sr-90	2.41E-08	2.18E-12	4.37E-06
I-129	7.27E-09	6.59E-13	3.29E-06
Cs-137	2.85E-03	2.58E-07	2.58E-01

[1] Values from Table 2.4.13-4.

[2] Surface water concentrations calculated as the product of the groundwater concentration and the dilution factor (9.1E-05).

Table 2.4.13-6 Compliance with 10 CFR Part 20

Radionuclide	Concentration / MPC			
	Decay[1]	Decay and Adsorption[2]	Decay, Adsorption, and Dilution[3]	Minimum
H-3	6.01E+02	6.01E+02	5.45E-02	5.45E-02
Cr-51	5.14E-37			5.14E-37
Mn-54	1.27E-02	1.27E-02	1.15E-06	1.15E-06
Mn-56	0.00E+00			0.00E+00
Fe-55	4.70E-01	4.70E-01	4.26E-05	4.26E-05
Fe-59	1.85E-22			1.85E-22
Co-58	4.18E-13			4.18E-13
Co-60	2.20E+01	3.83E-03		3.83E-03
Br-83	0.00E+00			0.00E+00
Br-84	0.00E+00			0.00E+00
Br-85	0.00E+00			0.00E+00
Rb-88	0.00E+00			0.00E+00
Rb-89	0.00E+00			0.00E+00
Sr-89	4.89E-19			4.89E-19
Sr-90	3.82E+01	4.82E-02	4.37E-06	4.37E-06
Sr-91	0.00E+00			0.00E+00
Sr-92	0.00E+00			0.00E+00
Y-90	0.00E+00			0.00E+00
Y-91m	0.00E+00			0.00E+00
Y-91	3.53E-17			3.53E-17
Y-92	0.00E+00			0.00E+00
Y-93	0.00E+00			0.00E+00
Nb-95	3.36E-29			3.36E-29
Zr-95	5.03E-16			5.03E-16
Mo-99	0.00E+00			0.00E+00
Tc-99m	0.00E+00			0.00E+00
Ru-103	3.04E-26			3.04E-26
Rh-103m	0.00E+00			0.00E+00
Rh-106[4]	0.00E+00			0.00E+00
Ag-110m	2.77E-03			2.77E-03
Te-127m	1.92E-08			1.92E-08
Te-129m	9.85E-29			9.85E-29
Te-129	0.00E+00			0.00E+00
Te-131m	0.00E+00			0.00E+00
Te-131	0.00E+00			0.00E+00
Te-132	0.00E+00			0.00E+00
Te-134	0.00E+00			0.00E+00
I-129	3.63E-02	3.63E-02	3.29E-06	3.29E-06
I-130	0.00E+00			0.00E+00
I-131	1.17E-121			1.17E-121
I-132	0.00E+00			0.00E+00

Table 2.4.13-6 (cont.) Compliance with 10 CFR Part 20

Radionuclide	Concentration / MPC			
	Decay[1]	Decay and Adsorption[2]	Decay, Adsorption, and Dilution[3]	Minimum
I-133	0.00E+00			0.00E+00
I-134	0.00E+00			0.00E+00
I-135	0.00E+00			0.00E+00
Cs-134	1.66E+04	2.42E-23		2.42E-23
Cs-136	1.95E-73			1.95E-73
Cs-137	1.96E+05	2.85E+03	2.58E-01	2.58E-01
Cs-138	0.00E+00			0.00E+00
Ba-137m[4]	0.00E+00			0.00E+00
Ba-140	5.25E-79			5.25E-79
La-140	0.00E+00			0.00E+00
Ce-141	1.34E-31			1.34E-31
Ce-143	0.00E+00			0.00E+00
Pr-143	6.26E-75			6.26E-75
Ce-144	5.10E-03			5.10E-03
Pr-144	0.00E+00			0.00E+00
			Sum of Ratios =	0.32

[1] Table 2.4.13-2.

[2] Table 2.4.13-4.

[3] Table 2.4.13-5.

[4] No MPCs are published for Rh-106 and Ba-137m. However, the half-lives for these radionuclides are short (less than 1 day) and they decay to near zero values. Their ratios have been taken as zero.

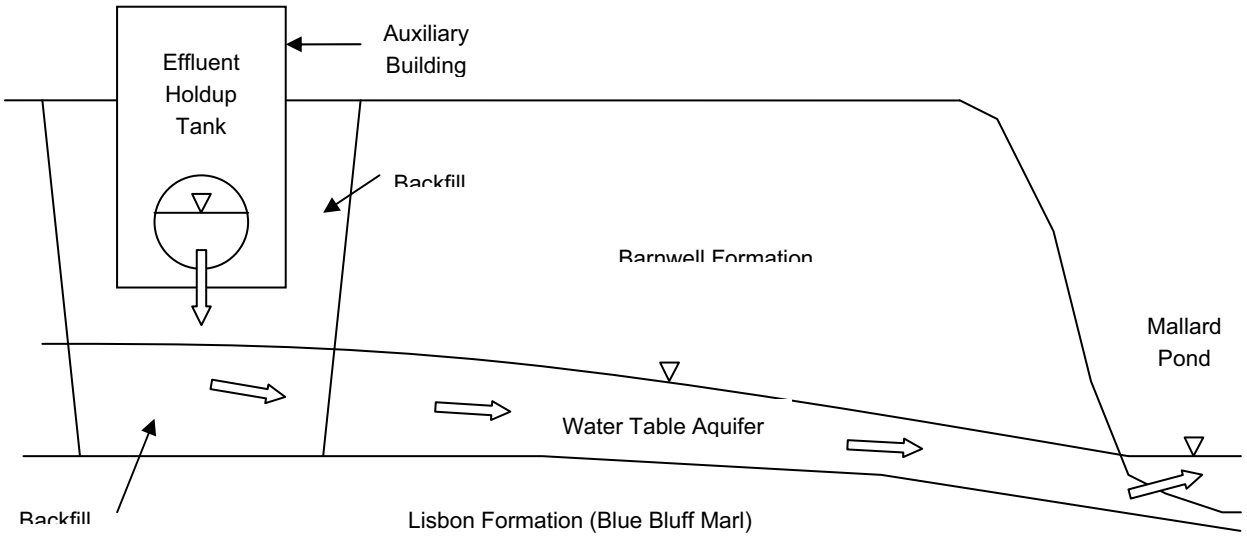


Figure 2.4.13-1 Conceptual Model for Evaluating Radionuclide Transport in Groundwater

Section 2.4.13 References

(Bechtel 1985) Bechtel Corporation, Flow Rate in Mathes Pond Stream & West Branch Stream, Calculation Number G-008, Vogtle Nuclear Power Plant, Job No. 9510-091, 1985.

(Heath 1998) Heath, R. C., Basic Ground-Water Hydrology, U. S. Geological Survey Water-Supply Paper 2220, 1998.

(Javandel et al. 1984) Javandel, I., Doughty, C. and Tsang, C-F, *Groundwater Transport: Handbook of Mathematical Models, Water Resources Monograph 10*, American Geophysical Union, 1984.

(Kaplan and Millings 2006) Kaplan, D. I., and Millings, M. R., Distribution Coefficients for the Vogtle Early Site Permit, WSRC-TR-2006-00246, Savannah River National Laboratory, Washington Savannah River Company, Aiken, South Carolina, July 2006.

(Kennedy and Strenge 1992) Kennedy, W. E., and Strenge, D. L., NUREG/CR-5512, *Residual Radioactive Contamination From Decommissioning*, Volume 1, Pacific Northwest Laboratory, October 1992.

(MACTEC 2006) Report of Soil and Groundwater Sampling and Laboratory Testing, Southern Advanced Light Water Reactor, Early Site Permit, Vogtle Electric Generating Plant, Burke County, Georgia, MACTEC Project No. 6141-06-0090, MACTEC Engineering and Consulting, Inc., June 2006.

(SNC 2003) Southern Nuclear Operating Company, Updated Final Safety Analysis Report, Vogtle Electric Generating Plant, Revision 11, May 2003.

(USDOH 1970) U. S. Department of Health, Education, and Welfare, Radiological Health Handbook, January 1970.

(Westinghouse 2006) AP1000 Calculation Note Number APP-WLS-M3C-021, Liquid Tank Rupture Evaluation (COL Item 15.7.6), Revision 0, Westinghouse Electric Company, LLC, 2006.

Appendix 2.4A—Observation Well Installation and Development Report

(Excludes contents of report Appendix J)

Prepared by
Earth Sciences and Environmental Engineering,
Technical Services,
Southern Company Generation

November 2005

VOGTLE ALWR ESP PROJECT
FINAL DATA REPORT
ES1374

Prepared By

Earth Science and Environmental Engineering
Technical Services
Southern Company Generation

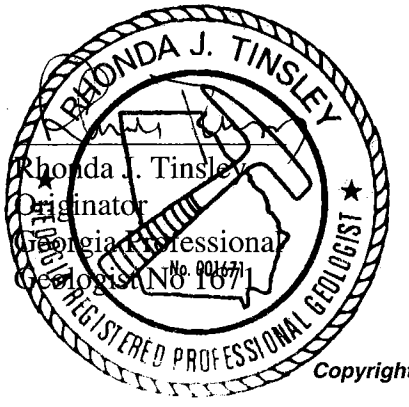
November 2005

VOGTLE ALWR ESP PROJECT
FINAL DATA REPORT

Prepared By

Earth Science and Environmental Engineering
Technical Services
Southern Company Generation

November 2005



Rhonda J. Tinsley
Originator
Georgia Professional
Geologist No. 1671

Steven C. Bearce
Reviewer
Georgia Professional
Geologist No. 1268

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

This report presents the information specified in the Bechtel Corporation (Bechtel) document titled *Technical Specification for Groundwater Well Installation for Southern ALWR ESP Project, Burke County, Georgia* (Bechtel Specification Number 25144-002-3PS-CY00-00002-000). This work occurred from May 24 through June 17, 2005. Southern Company Generation provided field supervision, technical consultation, and drilling subcontractors under the technical direction of Bechtel and SNC ESP Project.

Daily and weekly logs were developed during the project. These are respectively included in Appendices A and B.

2.0 SURVEYING SERVICES

The final well survey was provided by Georgia Power Land Engineering Group, Atlanta, Georgia, following the completion of the well installation program. A new survey was also performed for the existing wells to be used in the project. Qualified land surveyors performed the survey and met all survey requirements of the State of Georgia.

The horizontal survey was based on the plant grid system and converted to the State of Georgia coordinate system of northing and easting. The survey originated at a benchmark established for Plant Vogtle. Ground surface elevations were based on the 1927 National Geodetic Vertical Datum (NGVD). The horizontal survey meets the third-order accuracy (1:5000) and the elevation survey is accurate to at least the nearest one-tenth of a foot. This survey data is included in Appendix C.

The locations of the boreholes were determined by SCS and Bechtel using a hand held GPS unit. The proposed well layout coordinates are from existing distribution system layout drawings provided by Georgia Power.

3.0 UNDERGROUND UTILITY DETECTION

A survey to locate underground utilities was completed before the drilling work began at the site. The survey was completed by Mr. John Lattner, Vogtle Engineering, on May 23, 2005. All locations were clear of obstructions with the exception of OW-1009, which was offset to avoid fire protection water and electrical lines.

4.0 DRILLING AND SAMPLING

The drilling program began on May 24, 2005. Drilling was performed by: Kilman Brothers, Stone Mountain, Georgia; Greene's Water Wells, Inc., Gray, Georgia; S&ME, Inc., Blountville, Tennessee; and Prosonic Corporation, New Ellenton, S.C. A list of the equipment used on site during the investigation is included in Appendix D.

Drilling initially used both 3-1/4" ID and 4-1/4" ID hollow-stem augers (HSA) using Central Mine Equipment (CME) drill rigs. After discovering the 3-1/4" HSAs were too small to adequately set a well, all shallow aquifer wells were drilled, sampled, and set using 4-1/4" ID HSAs. In addition to conventional drilling procedures, rotosonic drilling was provided by Prosonic. This drilling technique uses high-frequency resonant energy. This resonant energy is transferred down the drill string at various sonic frequencies to provide a continuous relatively undisturbed core sample. SCG recommended this method due to the depths necessary for deep well installation, difficult drilling conditions for the conventional equipment as well as its increased speed of drilling.

Soil samples were collected through the hollow stem augers at 5 foot intervals using standard 2' split-spoon samplers, driven 18" by a standard 140 pound hammer or approved automatic hammer. Samples were logged on the site and representative portions were placed in 8-ounce glass sample jars labeled with the sample number, boring number, date, depth, and standard penetration test (SPT) data, including *n* the number of blows over a one-foot sample interval. Bag sampling of representative portions of the continuous 4" rotosonic core samples proceeded at the same 5-foot intervals as the spoon samples. The rotosonic, grab-sample intervals are correlative to the SPT sample intervals. The rotosonic samples were double-bagged and labeled with the same information as the SPT samples, except for *n*.

The complete soil boring logs are included in Appendix E. Due to the initial use of incorrect auger size (3-1/4" ID HSA) for some of the initial wells, some holes were cement-bentonite grout abandoned and new holes were drilled, generally adjacent to the original borehole. The abandoned holes are labeled as 'A' (for example, OW-1002A). The borehole abandonment forms and well construction details are included in Appendix F.

A brief description of the drilling and sampling for each location follows.

OW-1001A

Boring OW-1001A was started and completed on May 25, 2005. The borehole was drilled to a depth of 100' with 3-1/4" ID HSAs by Greene's. It was determined that the auger size was incorrect for the installation of the pre-pack well screen. No boring log was created for this hole since OW-1002A, located adjacent to the hole, was logged from the surface to 108.5 feet below ground surface. The hole was abandoned and grouted by S&ME on June 5, 2005.

OW-1001

Shallow well OW-1001 is installed approximately 10 feet from boring OW-1001A. Drilling on this hole continued from May 24 to May 29, 2005. No log was created for the upper portion of this hole since the adjacent boring OW-1002 was logged from the surface down. This boring was completed by Greene's to a depth of 140 feet and logged by an SCS geologist from split-spoon samples. Shallow well OW-1001 is installed in this boring.

OW-1002A
Boring OW-1002A was drilled on May 24 and 25, 2005. The borehole was drilled to a depth of 108.5' with 3-1/4" ID HSAs by Greene's. The hole was logged by an SCS geologist from split-spoon samples. It was determined that the auger size was incorrect for the installation of the pre-pack well screen. The hole was abandoned and grouted by S&ME on June 5, 2005.

OW-1002
Boring OW-1002 was started on June 2 and completed on June 6, 2005 by Prosonic. The borehole was drilled to a depth of 237 feet. The hole was logged by an SCS geologist from continuous 4" samples. Deep well OW-1002 is installed in this boring.

OW-1001 and OW-1002 are a well pair.

OW-1003A
Boring OW-1003A was started and completed on May 24, 2005. The borehole was drilled to a depth of 88.5 feet with 3-1/4" ID HSAs by S&ME, Inc. The hole was logged by an SCS geologist from split-spoon samples. It was determined that the auger size was incorrect for the installation of the pre-pack well screen. The hole was abandoned and grouted by S&ME on June 5, 2005.

OW-1003
Boring OW-1003 was started and completed on May 25, 2005. This boring was drilled approximately ten feet south of OW-1003A with 4-1/4" ID HSAs by S&ME. No log was prepared for this hole due to the proximity of OW-1003A. The hole was drilled down to 90.5' with no sampling and shallow observation well OW-1003 was installed.

OW-1004
Boring OW-1004 was started on June 3 and completed on June 11, 2005. The boring was drilled to a depth of 187 feet by Prosonic and logged by an SCS geologist from continuous 4" ID samples. Sampling in this boring began at 87' since OW-1003, the adjacent shallow well, was sampled to 88.5' feet. Prosonic had to shut down from June 4 to June 8 for training. Deep observation well OW-1004 was installed.

OW-1003 and OW-1004 are a well pair.

OW-1005A
Boring OW-1005A was started and completed on May 31, 2005. The auger boring was drilled to depth of 75 feet with 3-1/4" ID HSAs by Kilman. It was determined that the auger size was incorrect for the installation of the pre-pack well screen. This well was abandoned and grouted by S&ME on June 5, 2005. The hole was logged by an SCS geologist from samples collected in jars at the time of boring.

OW-1005

Boring OW-1005 was started on June 2 and completed on June 7, 2005. Due to the incorrect size of the augers used at OW-1005A, this new hole was offset approximately 10' from that boring. The boring was drilled to 170' with 4-1/4" ID HSAs by S&ME. No sampling was performed in the upper portion of the hole due to the proximity of OW-1005A. The hole was logged by an SCS geologist from split spoon samples from 68.5 feet to 170.0 below ground surface. OW-1005 is installed in this boring.

OW-1006A

Boring OW-1006A was started on June 3 and completed on June 4, 2005. This boring was drilled to 125' by S&ME with 4/1/4" ID HSAs. The hole was logged by an SCS geologist from split-spoon samples. This boring was abandoned due to a shortage of augers. Additional augers necessary to reach the marl unit could not be brought onsite quickly and the potential for HAS deviation in the existing hole warranted a decision to start in a new hole when sufficient augers were available. The hole was abandoned and grouted by S&ME on June 5, 2005.

OW-1006

Boring OW-1006 was started on June 9 and completed on June 14, 2005, by S&ME. No sampling was performed in the upper 118.5' feet due to the proximity of boring OW-1006A which was taken to 125'. No standard penetration tests were obtained from this hole due to drilling problems. The split-spoon sampler was pushed to collect samples. Shallow well OW-1006 is installed in this boring.

OW-1007

Boring OW-1007 was started on June 4 and completed on June 8, 2005. The boring was drilled to 122 feet by Greene's with 4-1/4" ID HSAs. No sampling was performed in the upper 98.5' due to the proximity of boring OW-1008 which was logged down to 105' by an SCS geologist from split-spoon samples. Shallow well OW-1007 is installed in this boring.

OW-1008

Boring OW-1008 was started on May 31 and completed on June 1, 2005. The upper portion of the hole was drilled by Kilman with 3-1/4" ID HSAs to 105 feet and logged by an SCS geologist from split-spoon samples. The remainder of the hole was drilled by PROSONIC to a depth of 247 feet. The lower portion of the hole was logged from continuous 4" ID samples. Deep well OW-1008 was installed in this boring.

OW-1007 and OW-1008 are a well pair.

OW-1009

Boring OW-1009 was started on May 24 and completed on May 25, 2005. The boring was drilled by S&ME with 4-1/4" ID HSAs to 100' and logged by an SCS geologist from split-spoon samples. Shallow well OW-1009 is installed in this hole.

OW-1010
Boring OW-1010 was started and completed on June 1, 2005. The boring was drilled by S&ME with 4-1/4" ID HSAs to 93.5 feet and logged by an SCS geologist from split-spoon samples taken to 95 feet. Shallow well OW-1010 is installed in this hole.

OW-1011
Boring OW-1011 was started on June 11 and completed on June 12, 2005. The boring was drilled by Prosonic to a depth of 217 feet and logged by an SCS geologist from continuous 4" ID samples taken from 87 feet to the bottom of the hole. Sampling of the upper 87 feet was not performed in this hole due to the proximity of OW-1012, which was sampled and logged from the surface to 93.6 feet. Deep well OW-1011 is installed in this boring.

OW-1012
Boring OW-1012 was started on May 31 and completed on June 1, 2005. The boring was drilled by S&ME with 4-1/4" ID HSAs to 93.6 feet and logged by an SCS geologist from split-spoon samples taken to 95 feet. Shallow well OW-1012 is installed in this hole.

OW-1011 and OW-1012 are a well pair.

OW-1013
Boring OW-1013 was started on June 9 and completed on June 10, 2005. The boring was drilled by S&ME with 4-1/4" ID HSAs to 103.5 feet and logged by an SCS geologist from split-spoon samples taken to 105 feet. Shallow well OW-10013 is installed in this hole.

OW-1014
Boring OW-1014 was started and finished June 11, 2005. The boring was drilled to a depth of 197.4 feet by Prosonic and logged by an SCS geologist from continuous 4" samples. Sampling in this boring began at 97 feet since OW-1015, the adjacent shallow well, was logged to 88.5 feet. Deep observation well OW-1014 was installed in this boring.

OW-1015
Boring OW-1015 was started May 30 and completed June 3, 2005. The boring was drilled to 120 feet by Greene's with 4-1/4" ID HSAs. The boring was logged by an SCS geologist from split-spoon samples. Shallow observation well OW-1015 was installed in this boring.

OW-1014 and OW-1015 are a well pair.

5.0 GROUNDWATER OBSERVATION WELLS

Fifteen wells were installed at the site between the dates of May 26 and June 15, 2005. Twenty-two observation wells were previously installed. Details of the new wells are provided in Appendix F. Table 5-1 summarizes this data.

Table 5-1 Observation well construction details

Well ID	Date Installed	Ground Elev.	Top of Casing Elev.	Well Dia. (in)	Screen Slot Size (in)	Total Well Depth (ft)	Screen Length (ft)	Screened Interval, Depth (ft)	Screened Interval, El. (ft)	Unit
OW-1001	5/29/05	230.854	233.494	2	0.01	133	10	121 - 130	109.724 – 100.224	shallow
OW-1002	6/6/05	227.442	230.502	2	0.01	237	10	219 – 229	7.812 – (-)2.188	deep
OW-1003	5/26/05	223.044	226.284	2	0.01	90.5	10	75.5 – 84.8	146.914 – 137.614	shallow
OW-1004	6/10/05	222.92	225.671	2	0.01	187	10	153.25 – 163.26	69.04 – 59.04	deep
OW-1005	6/7/05	264.389	267.289	2	0.01	176.8	10	157.3 – 167.3	106,459 – 96.459	shallow
OW-1006	6/14-15/05	223.044	226.284	2	0.01	135.5	10	116 - 126	110.491 – 100.491	shallow
OW-1007	6/7/05	216.91	219.96	2	0.01	120	10	102 – 111.5	114.28 – 104.28	shallow
OW-1008	6/1/05	216.65	219.71	2	0.01	247	10	230 – 240	(-)13.98 – (-)23.98	deep
OW-1009	5/27/05	220.887	223.647	2	0.01	97.9	10	84 – 94	136.257 – 126.257	shallow
OW-1010	6/1/05	216.895	219.905	2	0.01	94.8	10	73.3 – 83.3	142.965 – 132.965	shallow
OW-1011	6/13/05	205.785	209.043	2	0.01	217.6	10	200.6 – 210.6	4.555 – (-)5.445	deep
OW-1012	6/1/05	205.355	208.684	2	0.01	93.5	10	74.0 – 83.4	130.725 – 121.325	shallow
OW-1013	6/10/05	216.869	219.809	2	0.01	103.5	10	83.5 – 93.5	132.775 – 122.775	shallow
OW-1014	6/11/05	220.867	223.856	2	0.01	197	10	182 – 192	38.237 – 28.237	deep
OW-1015	6/3/05	220.427	223.157	2	0.01	120	10	93 - 103	126.797 – 116.797	shallow

All new wells and the inactive wells were developed by S&ME, Inc. Well development forms are included in Appendix G. The existing wells were also inspected by SCS and Bechtel. Well inspection forms are included in Appendix H. Water level measurements are being performed by the Plant under its existing Quality Assurance Program.

6.0 SAMPLE STORAGE

Soil samples collected from split-spoon and continuous sampling are stored onsite. Glass sample jars were used for split-spoon samples and zip-lock bags were labeled and double-bagged for the continuous 4" samples from the Prosonic rig. All samples, with the exception of those sent to the laboratory for analysis, are stored in a secure building within the plant site.

7.0 LABORATORY TESTING

Soil testing for selected samples was assigned by Bechtel. The samples were collected and delivered to the Southern Company Generation Construction Field Services soil laboratory in Alabaster, Alabama. Soil classification tests with hydrometer were performed. The laboratory results are presented in Appendix I.

8.0 SITE CLEAN UP

Site clean up to the plant's satisfaction was performed by the drillers.

9.0 SITE PHOTOGRAPHY

Digital photography of the site investigation is included as a courtesy, although the specifications did not require this work. The photographs (Appendix J) of the site investigation include selected soil samples, equipment, and site conditions.

APPENDIX A

DAILY FIELD LOGS

Daily Field Log

5/24/2005	• Started OW-1002A (Greene). • Started OW-1009 (S&ME) • Started OW-1003. Drilled to 88.5' with 3-1/4" ID HSAs.
5/25/2005	• Completed OW-1002A. This hole was abandoned due to incorrect auger size. • Drilled to 100' at OW-1001A. Abandoned this hole due to incorrect auger size. • Continuing at OW-1003 with 4/14" ID HSAs to bottom of yesterday's 3-1/4" ID HSA borehole. Restarted sampling at ~75'. Completed OW-1003. • Well at OW-1003 offset 10' due to 10' of cave-in in boring. Drilled down without sampling. OW-1003 well installation notes attempting to set pre-pack in open hole • S&ME development crew standing by for direction. • Kilman crew dropped supplies by OW-1003, OW-1002 and then heading to OW-1008. Had to standby till ~2 o'clock while well was relocated due to accessibility. Kilman did not bring enough HSA and rod to complete holes • Greene sampled OW-1002Ato 115'. Offset and drilled OW-1001A since no well materials were available to set well at the time. Wrong size augers were used. Had to pull out and re-drill with correct 4-1/4" ID HSAs. Greene not able to grout up hole since they did not have necessary equipment • Continue sampling on OW-1009 (S&ME). Equipment breakdown in coquina.
5/26/2005	• Started OW-1001 (Greene). Thin bed of hard crystalline limestone at 100' and again at 110'. • Completed OW-1003 (S&ME) • Development team completes 803A and 809
5/27/2005	• Completed OW-1009 (S&ME) • Development team pump burns out • Completed OW-1001 except grout installation
5/28/2005	OFF
5/29/2005	• Greene moves chemical grout pump to OW-1001. No grout delivered so grout taken from OW-1003 (6 bags). 2 additional bags brought in and 1 bag CETCO Super GeL X. Grouted hole up to 70'
5/30/2005	• Intermittent rain • Started OW-1015 (Greene)
5/31/2005 5/31/2005	• Kilman at OW-1005. Drilled to 78.5' and encountered flowing sand • Intermittent rain. Hard rain set in by 3:00 • Sand up in augers at OW-1015. Continuing on this hole • Prosonic onsite. Tom Moorer walked them through security. Brought only 150' drilling capability but sent helper to get additional tooling to reach 300'. • Discussed vibrations from Prosonic rig on plant equipment with Don Moore.. He did not see need for additional calcs to proceed • Green successfully cleans auger and took 98.5 to 100' sample. • Discuss number swap on well labeling with Louise Headland • Started lower portion OW-1008 (Prosonic) • Started OW-1012 (S&ME) • Showed location for OW-1006 to Kilman. They request road improvement
6/1/2005	• Started OW-1002B (Prosonic)

	• S&ME drilling OW-1012. Well completed • S&ME drilling OW-1010. • Development completed on 804, 805A, 853, 854, 856
6/2/2005	• Prosonic continues with OW-1002 • Completion of OW-1010. Well is accidentally lifted during grouting but returned to planned depth. Bechtel approves well as is. • S&ME moves to OW-1005. Kilman drilled original OW-1005 but pulled out. Well abandoned by S&ME. Cable broke and grazed S&ME Ted's shoulder. Ted declined emergency room visit • S&ME second rig moves to OW-1006 • Development completed on 27, 850A 852, 855
6/3/2005	• OW-1002B completed (Prosonic) • Started OW-1004 (Prosonic) • OW-1005B and OW-1006A started by S&ME rigs. Out of auger on OW-1005 at ~3 pm. • OW-1015 completed (Greene) • Development completed on OW-1003, OW-1009, OW-1010, OW-1012, OW-1015
6/4/2005	• Greene encounters difficult drilling at 105'. Had to retool for mud to stabilize borehole and clean flowing sand from HAS • Surface completion by S&ME at OW-1002` • Prosonic leaves site for training • OW-1015 surface completion by S&ME • Started OW-1007 (Greene)
6/5/2005	• OW-1001A abandoned by S&ME • OW-1001 and OW-1006 surface completion by S&ME • OW-1002A abandoned by S&ME • OW-1003A abandoned by S&ME • OW-1005A abandoned by S&ME • OW-1006A abandoned by S&ME
6/6/2005	• Started 1007 (Greene) • Development completed for OW-1001 • GPS locations taken for new wells • Drillers report using 32 bags of grout in OW-1001 on top of 70 feet of grout already in hole. This shrank to about 20' bgs and additional 10 bags were used to top it off. S&ME used a total of 120 bags to abandon OW-1001A, OW-1002A, and top off OW-1001 and OW-1002
6/7/2005	• OW-1005 completed (S&ME) • OW-1007 completed (Greene) • Conversation with Bechtel to confirm using Schedule 80 PVC in holes over 100', due to inability to insert well pumps. Southern Co expresses concerns about representativeness of water table conditions at OW-1001 and multiple saturated zones in OW-1005 and OW-1006. • Attempted to rig a 'stand off' on water level meter to aid in getting reliable water level measurement down PVC. Capillary attraction making reading difficult in 1008 and other deep wells. 'Stand-off' initially worked but then held water, which continuously trickled over GeoSlope probe thus negating its usefulness. • Bechtel calls to say OW-1001 appears to be OK because of recovery and another well and boring are not required there
6/8/2005	• OW-1006 assigned to Greene • OW-013 assigned to S&ME
6/9/2005	• OW-1006 started (Greene) • Started OW-1013 (S&ME)
6/10/2005	• OW-1006 continues

	• OW-1013 completed (S&ME)
6/11/2005	• OW-1014 started and completed (Prosonic) • OW-1011 started (Prosonic)
6/12/2005	• OW-1011 completed (Prosonic)
6/13/2005	• OW-1004 surface completion (S&ME development team) • OW-1011 surface completion (S&ME development team) • OW-1014 surface completion (S&ME development team) • OW-1006 continues
6/14/2005	• Development completed on OW-1002, OW-1004, OW-1007, OW-1008, OW-1011, OW-1014 • OW-1006 completed
6/15/2005	• Development completed on 142, 179, 27, OW-1005, OW-1013
6/16/2005	• OW-1006 surface completion and development (S&ME development team) • Inspected wells LT-1B, LT-12, and LT-7A. Made note of depth to water and bottom of wells. No redevelopment recommended

APPENDIX B

WEEKLY FIELD LOG

Vogtle ALWR ESP Project
Weekly Field Log

				Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
Well	Purpose	Status	Driller	24-May-05	25-May-05	26-May-05	27-May-05	28-May-05	29-May-05	30-May-05	31-May-05	1-Jun-05	2-Jun-05	3-Jun-05	4-Jun-05	5-Jun-05	6-Jun-05	7-Jun-05	8-Jun-05	9-Jun-05	10-Jun-05	11-Jun-05	12-Jun-05	13-Jun-05	14-Jun-05	15-Jun-05	16-Jun-05
OW-1001	Shallow	Completed	Greene																								
OW-1001A	Shallow	Abandoned	Kilman													Abandoned by S&ME											
OW-1002A	Shallow	Abandoned	Greene													Abandoned by S&ME											
OW-1002	Deep	Completed	Prosonic																								
OW-1003A	Shallow	Abandoned	S&ME Tim													Abandoned by S&ME											
OW-1003	Shallow	Completed	S&ME Tim																								
OW-1004	Deep	Started	Prosonic												OFFSITE for Saturn Days												
OW-1005A	Shallow	Abandoned	Kilman													Abandoned by S&ME											
OW-1005	Shallow	Completed	S&ME Ted																								
OW-1006A	Shallow	Abandoned	S&ME Tim													Abandoned by S&ME											
OW-1006	Shallow	Located	Greene																			OFFSITE					
OW-1007	Shallow	Completed	Greene																								
OW-1008	Deep	Completed	Kilman/Prosonic*																								
OW-1009	Shallow	Completed	S&ME Ted																								
OW-1010	Shallow	Completed	S&ME Tim																								
OW-1011	Deep	Completed	Prosonic																								
OW-1012	Shallow	Completed	S&ME Ted																								
OW-1013	Shallow	Completed	S&ME Ted																								
OW-1014	Deep	Completed	Prosonic																								
OW-1015	Shallow	Completed	Greene																								
Development Team						Developed 803a, 809	Surface Completion OW-1009				Helped gather supplies and assembled new pump	Developed 804, 805a, 853, 854, 856	Developed 850a, 852, 855 Surface Completion OW-1010	Surface completion OW-1003 Developed OW-1003, OW-1009, OW-1010, OW-1012, OW-1015	Surface completions OW-1002 OW-1015	Surface completions OW-1001 OW-1006			Surface completions OW-1005, OW-1007, OW-1012	OFFSITE	Surface completion OW-1013	OFFSITE		Developed and surface completion OW-1002, OW-1004, OW-1007, OW-1008, OW-1011, OW-1014	Developed 142, 179, 27, OW-1005, OW-1013	Surface Completion and development OW-1006

* Kilman 5/25 - 26. Prosonic 5/31-6/1

Drilling/well installation period - start to finish

Time offsite, no drilling (Holiday, training, week-end)

APPENDIX C

SURVEY DATA

EXISTING WELL SURVEY
NEW WELL SURVEY

Vogtle Existing Well Survey (NAD27)

Well	Northing	Easting	El. Ground (ft.)	El. Top of Casing (TOC ft.)
	(NAD27)	(NAD27)		
142	1143282.409	622260.403	222.377	223.797
179	1144061.205	621778.747	274.668	275.068
802A	1142201.703	624195	215.558	218.258
803A	1142085.387	622896.031	218.394	219.574
804	1141599.597	622224.797	223.603	225.373
805A	1141616.153	624395.699	233.988	235.76
806B	1143821.568	623724.453	214.314	215.414
808	1144624.291	623297.746	214.871	215.771
809	1143320.36	621857.189	NA	223.671
LT-1B	1143390.484	623301.286	218.053	220.654
LT-7A	1143154.107	623314.265	217.813	218.563
LT-12	1142776.798	623597.644	218.274	219.024
LT-13	1143136.424	624108.674	218.273	220.073
27	1143622.414	627928.859	208.836	210.406
29	1144982.746	626389.789	190.83	192.61
850A	1146728.881	624482.466	225.225	227.025
851A	1143869.697	621064.25	261.685	263.325
852	1140993.937	627377.483	199.408	201.308
853	1146016.483	623191.496	226.599	229.969
854	1144900.49	621914.54	235.584	237.324
855	1142159.143	627948.361	216.767	218.668
856	1139928.479	626555.6	185.495	187.107

Vogtle New Well Survey (NAD27)

Location	Northing	Easting	El. Ground (ft.)	El. Top of Casing (TOC ft.)
1001	1142888.724	620148.556	230.224	232.864
1002	1142887.782	620189.341	226.812	229.872
1003	1142864.056	621884.337	222.414	225.654
1004	1142842.176	621880.794	222.29	225.041
1005	1144047.86	620408.765	263.759	266.659
1006	1143817.854	619179.749	226.491	229.971
1007	1142383.767	619301.009	216.28	219.33
1008	1142347.939	619306.686	216.02	219.08
1009	1141891.645	620888.608	220.257	223.017
1010	1140808.986	620051.708	216.265	219.275
1011	1139956.246	621033.045	205.155	208.413
1012	1139969.496	621045.924	204.725	208.054
1013	1140805.4	621715.032	216.239	219.179
1014	1140565.502	623070.234	220.237	223.226
1015	1140550.576	623086.318	219.797	222.527

APPENDIX D

FIELD INSTRUMENTS/EQUIPMENT

Contractor	Tools/Rig Description
Greene Water Well, Inc.	CME 75 Auger drill with water tank; manual hammer 1-ton crew truck Chevrolet Pickup HD 4-1/4" ID hollow stem auger – 125' 3-1/4" ID hollow stem auger 90' NWJ rod
Kilman Brothers	CME 45; 4X4; no water tank, auto hammer 125' of 3 1/4" ID hollow stem auger 110' N rod 2 cutter heads
S&ME (2 rigs)	3 F-Series, ¾-ton trucks 1 personal vehicle 2 CME 55 Auger/Wash drill rigs with SPT Autohammers Grundfos pump Static water level indicator Generator Steam Junny 2 grout plants with tremie pipe 3-1/4" ID hollow stem augers – 90' 4-1/4" ID hollow stem augers – 180' NWJ rods with 4" fishtail or 6" rollercone – 180' 6 2' split spoons
PROSONIC	SR-083 drill rig w/ 6" outer drive casing and 4" sampling tube Two 1-ton crew trucks Onboard grout machine Pressure washer
SCS	Provided 60' 4 1/4" ID hollow stem augers
	Extra – 1 bundle (19) 5' AWJ rods 9 loose 5' AWJ rods 14 loose 10' NWJ rods Chemical grouting machine

Contractor	Well Development Tools
S&ME	Grunfos Rediflo2 submersible pump 200' of hose and power lead 1 Generac 5000 Watt, 10 HP 110/240V AC generator

Well Supplies
Schedule 80 PVC slotted screens - 10' length Schedule 80 PVC risers - 10' length

Schedule 80 PVC riser - 2 1/2' length
Schedule 80 PVC riser - 5' length
Schedule 40 PVC slotted screens - 10' length
Schedule 40 PVC risers - 10' length
Schedule 40 PVC risers - 5' length
Schedule 40 PVC risers - 2 1/2' length

DSI 1A filter sand
JC50FS by Unimen filter sand
Foster Dixiana

CETCO Goldseal 3/8" bentonite chips
CETCO Puregold medium

APPENDIX E

BORING LOGS

OW-1001
OW-1002
OW-1002A
OW-1003
OW-1004
OW-1005
OW-1005A
OW-1006
OW-1006A
OW-1007
OW-1008
OW-1008A
OW-1009
OW-1010
0W-1011
OW-1012
OW-1013
OW-1014
OW-1015

LEGEND

N	**Standard Penetration Resistance. The sum of the number of blows from a 140 pound hammer needed to drive the sampler over the sampling depth of 6 to 18 inches.**
Bpf	**Blows per foot. Unit of measure for 'N'.**
WOR	**Split spoon sampler penetrates by weight of the sampling rods alone.**
WOH	**Split spoon sampler penetrates by the weight of 140 pound hammer alone, with no blows from the hammer.**

SOUTHERN COMPANY
Energy to Serve Your World

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1001
Sheet 1 of 5

SITE: Vogtle ALWR SSAR | HOLE DEPTH: 140' | SURF.ELEV.: 230.854
LOCATION: Burke County, Georgia | COORDINATES N: 1142888.724 | E: 620148.556
ANGLE: NA | BEARING: NA | CONTRACTOR: Greene | DRILL NO.: CME 75
DRILLING METHOD: 4 1/4" HSA | NO. SAMPLES: 4 | NO. U.D. SAMPLES: NA
WATER TABLE DEPT: 108.7' | ELEV.: | TIME AFTER COMP.: | DATE TAKEN: 5/24/2005
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 5/24/2005
DRILLER: Arthur | RECORDER: S. Bearce | APPROVED: NA | DRILLING COMP. DATE: 5/29/2005

Depth Ft	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
0	230.85						
1	229.85	OW-1001 was installed in this borehole. OW-1001 is a well pair with OW-1002					
2	228.85	Soil sampling for the upper portion was completed in OW-1002A to the top of the MARL at 105' bgs. Sampling in this hole began at 113.5 feet bgs. (Sheet 4)					
3	227.85						
4	226.85						
5	227.86	A previous borehole (OW-1001A) was made for this well but was abandoned. No log was prepared.					
6	224.85						
7	223.85						
8	222.85						
9	221.85						
10	222.86						
11	219.85						
12	218.85						
13	217.85						
14	216.85						
15	217.86						
16	214.85						
17	213.85						
18	212.85						
19	211.85						
20	210.85						
21	209.85						
22	208.85						
23	207.85						
24	206.85						

Form GS9901 7-26-20(

SOUTHERN COMPANY
Energy to Serve Your World

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1001
Sheet 2 of 5

SITE Vogtle ALWR SSAR TOTAL DEPTH 140' SURF.ELEV. 230.854

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
25	205.85	See Page 1					
26	204.85						
27	203.85						
28	202.85						
29	201.85						
30	200.85						
31	199.85						
32	198.85						
33	197.85						
34	196.85						
35	195.85						
36	194.85						
37	193.85						
38	192.85						
39	191.85						
40	190.85						
41	189.85						
42	188.85						
43	187.85						
44	186.85						
45	185.85						
46	184.85						
47	183.85						
48	182.85						
49	181.85						
50	180.85						
51	179.85						
52	178.85						
53	177.85						
54	178.86						
55	175.85						
56	174.85						

SOUTHERN COMPANY
Energy to Serve Your World

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1001
Sheet 3 of 5

SITE Vogtle ALWR SSAR TAL DEPTH 140' ELEV. 230.854

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
57	173.85	See Page 1					
58	172.85						
59	171.85						
60	170.85						
61	169.85						
62	168.85						
63	167.85						
64	166.85						
65	165.85						
66	164.85						
67	163.85						
68	162.85						
69	161.85						
70	160.85						
71	159.85						
72	158.85						
73	157.85						
74	156.85						
75	155.85						
76	154.85						
77	153.85						
78	152.85						
79	151.85						
80	150.85						
81	149.85						
82	148.85						
83	147.85						
84	146.85						
85	145.85						
86							
87	143.85						
88	142.85						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1001
Sheet 4 of 5

SITE Vogtle ALWR SSAR TOTAL DEPTH 140' SURF.ELEV. 230.854

Depth FT.	Elev. FT.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To FT.	Blows	N BPF	Comments
89	141.85						
90	140.85						
91	139.85						
92	138.85						
93	137.85						
94	136.85						
95	135.85						
96	134.85						
97	133.85						
98	132.85						
99	131.85						5/29/05 ▼
100	130.85						99' from ground surface
101	129.85						
102	128.85						Difficult drilling at 100'
103	127.85						
104	126.85						
105	125.85						
106	124.85						
107	123.85						5/24/05 ▼
108	122.85						108.7' from TOC
109	121.85						
110	120.85						Difficult drilling at 110'
111	119.85						
112	118.85						
113	117.85	Sampling begins at 113.5'					
114	116.85	Dark grey LIMESTONE bed, 0.2' thick with black macro fossils, thin laminae (~0.05')of CHALK on bottom	1	113.50-115	50/3"	50/3"	
115	115.85						
116	114.85						
117	113.85						
118			2	118.5-120	50/2"	50/2"	
119		Buff sandy COQUINA					
120	110.85						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1001
Sheet 5 of 5

SITE: Vogtle ALWR SSAR | TOTAL DEPTH: 140' | SURF.ELEV.: 230.854

Depth FT.	Elev. FT.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
121	109.85	Buff sandy COQUINA					
122	108.85						
123	107.85						
124	106.85	No recovery, auger used to grind through interval		123.5-125	50/0"	50/0"	
125	105.85						
126	104.85						
127	103.85						
128	102.85						
129	101.85	Dark grey LIMESTONE 2" layer	3	128.5-130	50/2"	50/2"	
130	100.85						
131	99.85						
132	98.85						
133	97.85						
134	96.85		4	133.5-135	18-19-25	44	
135	95.85	Approximately 3" of dark greenish grey MARL in spoon					
136	94.85						
137	93.85						
138	92.85	Greenish gray MARL		136.5-138	50/2"	50/2"	
139	91.85						
140	90.85			138.5-140	50/2"	50/2"	
141	89.85	Boring Terminated at 140'					
142	88.85						1500 gallons of water lost cleaning bottom of hole. Pumped at 60 gpm.
143	87.85						
144	86.85						
145	85.85						
146	84.85						
147	83.85						
148	82.85						
149	81.85						
150	82.86						
151	79.85						
152	78.85						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002
Sheet 1 of 8

SITE: Vogtle ALWR SSAR | HOLE DEPTH: 237 | SURF.ELEV.: 227.442
LOCATION: Burke County, Georgia | COORDINATES N: 1142887.782 | E: 620189.341
ANGLE: NA | BEARING: NA | CONTRACTOR: Prosonic | DRILL NO.: SR-083
DRILLING METHOD: Sonic | NO. SAMPLES: continuous | NO. U.D. SAMPLES: NA
WATER TABLE DEPTH: 93.5' | ELEV.: 133.312' | TIME AFTER COMP.: NA | DATE TAKEN: 6/6/2005
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 6/2/2005
DRILLER: Tony | RECORDER: Steve Bearce | APPROVED: NA | DRILLING COMP. DATE: 6/6/2005

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
0	227.44						
1		Sampling not started until 87' below ground surface. Because drill technology changed, the hole had to be offset approximately 20' North of original borehole.					
2	226.44						
3	225.44	Well OW-1002 is installed in this borehole.					
4	224.44						
5	223.44						
6	222.44						
7	221.44						
8	220.44						
9	219.44						
10	218.44						
11	217.44						
12	216.44						
13	215.44						
14	214.44						
15	213.44						
16	212.44						
17	211.44						
18	210.44						
19	209.44						
20	208.44						
21	207.44						
22	206.44						
23	205.44						
24	204.44						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002

Sheet 2 of 8

SITE Vogtle ALWR SSAR TOTAL DEPTH 237 SURF.ELEV. 227.442

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
		See page 1							
25	202.44								
26	201.44								
27	200.44								
28	199.44								
29	198.44								
30	197.44								
31	196.44								
32	195.44								
33	194.44								
34	193.44								
35	192.44								
36	191.44								
37	190.44								
38	189.44								
39	188.44								
40	187.44								
41	186.44								
42	185.44								
43	184.44								
44	183.44								
45	182.44								
46	181.44								
47	180.44								
48	179.44								
49	178.44								
50	177.44								
51	176.44								
52	175.44								
53	174.44								
54									
55	172.44								
56	171.44								

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002
Sheet 3 of 8

SITE **Vogtle ALWR SSAR** TOTAL DEPTH **237** SURF.ELEV. **227.442**

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
57	170.44	See page 1							
58	169.44								
59	168.44								
60	167.44								
61	166.44								
62	165.44								
63	164.44								
64	163.44								
65	162.44								
66	161.44								
67	160.44								
68	159.44								
69	158.44								
70	157.44								
71	156.44								
72	155.44								
73	154.44								
74	153.44								
75	152.44								
76	151.44								
77	150.44								
78	149.44								
79	148.44								
80	147.44								
81	146.44								
82	145.44								
83	144.44								
84	143.44								
85	142.44								
86	140.81								
87	140.44								
88	139.44	Sampling started with ProSonic drill rig							

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002
Sheet 4 of 8

SITE Vogtle ALWR SSAR TOTAL DEPTH 237 SURF.ELEV. 227.442

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
89	138.44	Yellow tan, shelly, sandy CLAY (CH), interbedded w/ occasional fine-grained shelly SAND, (SW)			NA	NA	
90	137.44		1	88.5 - 90			
91	136.44						
92	135.44						
93	134.44						
94	133.44		2	93.5 - 95			
95	132.44						
96	131.44						
97	130.44						
98	129.44	Sharp contact into greenish grey MARL					
99	128.44		3	98.5 - 100	NA	NA	
100	127.44						
101	126.44						
102	125.44						
103	124.44						
104	123.44		4	103.5 - 105	NA	NA	
105	122.44						
106	121.44						
107	120.44						
108	119.44						
109	118.44		5	108. - 110	NS	NS	
110	117.44						
111	116.44						
112	115.44						
113	113.81						
114	113.44		6	113.5 - 115	NA	NA	
115	112.44						
116	111.44						
117	110.44						
118	108.81						
119	108.44		7	118.5 - 120	NA	NA	
120	107.44						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002
Sheet 5 of 8

SITE: Vogtle ALWR SSAR | TOTAL DEPTH: 237 | SURF.ELEV.: 227.442

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
121	106.44	Greenish grey MARL							
122	105.44								
123	104.44								
124	103.44		8	123.5 - 125	NA	NA			
125	102.44								
126	101.44								
127	100.44								
128	99.44								
129	98.44		9	128.5 - 130	NA	NA			
130	97.44								
131	96.44								
132	95.44								
133	94.44								
134	93.44	Thin bedded, light grey, "soft" or "friable" LIMESTONE	10	133.5 - 135	NA	NA			
135	92.44	occurs in this interval							
136	91.44								
137	90.44								
138	89.44	Greenish grey MARL, becoming lighter in color							
139	88.44		11	138.5 - 140	NA	NA			
140	87.44								
141	86.44								
142	85.44								
143	84.44								
144	83.44		1`2	143.5 - 145	NA	NA			
145									
146	81.44								
147	80.44								
148	79.44								
149	78.44		13	148.5 - 150	NA	NA			
150		2 thin LIMESTONE beds between 147' and 157'							
151	76.44								
152	75.44								

Form GS9901 7-26-2004

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002
Sheet 6 of 8

SITE: Vogtle ALWR SSAR | TOTAL DEPTH | SURF.ELEV. 227.442

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
153	73.44						
154	72.44		14	153.5 - 155	NA	NA	
155	71.44						
156	70.44						
157	69.44						
158	68.44	Greenish grey MARL					
159	67.44		15	158.5 - 160	NA	NA	
160	66.44						
161	65.44						
162	64.44						
163	63.44						
164	62.44		16	163.5 - 165	NA	NA	
165	61.44						
166	60.44						
167	59.44						
168	58.44						
169	57.44		17	168.5 - 170	NA	NA	
170	56.44						
171	55.44						
172	54.44						
173	53.44	Light olive grey sandy CLAY grading to -->					
174	52.44		18	173.5 - 175	NA	NA	
175	51.44						
176	50.44	Light olive grey fine- to coarse-grained SAND composed of shell fragments and CLAY					
177	49.44						
178	48.44	Greenish grey MARL					
179	47.44		19	178.5 - 180	NA	NA	
180	46.44						
181	45.44						
182	43.81						
183	43.44						
184	41.81		20	183.5 - 185	NA	NA	

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002
Sheet 7 of 8

SITE: Vogtle ALWR SSAR | TOTAL DEPTH: 237 | SURF.ELEV.: 227.442

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
185	42.44						
186	41.44						
187	40.44						
188	39.44	Greenish grey MARL					
189	38.44		21	188.5 - 190	NA	NA	
190	37.44						
191	36.44						
192	35.44						
193	34.44						
194	33.44		22	193.5 - 195	NA	NA	
195	32.44						
196	31.44						
197	30.44						
198	29.44						
199	28.44		23	198.5 - 200	NA	NA	
200	27.44						
201	26.44						
202	25.44						
203	24.44						
204	23.44		24	203.5 - 205	NA	NA	
205	22.44						
206	21.44						
207	20.44						
208	19.44						
209	18.44		25	208/5 - 210	NA	NA	
210	17.44						
211	16.44						
212	15.44						
213	14.44						
214		~ 1/2' gradation to dark grey fine- to medium-grained SAND (SP) with minor amounts of silt and organics and 3/4' thick lignite layer	26	213.5 - 215	NA	NA	
215	12.44						
216	11.44						

Form GS9901 7-26-2004

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002
Sheet 8 of 8

SITE: Vogtle ALWR SSAR
TOTAL DEPTH: 237
SURF.ELEV.: 227.442

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
217	10.44						
218	9.44	6" grey CLAY layer					
219	8.44		27	218.5 - 220	NA	NA	
220	7.44						
221	6.44	Light greenish grey fine- to medium-grained, silty glauconitic SAND (SM)					
223	4.44						
224	3.44		28	223.5 - 225	NA	NA	
225	2.44						
226	1.44						
227	0.44						
228	-0.56				NA	NA	
229	-1.56		29	228.5 - 230			
230	-2.56						
231	-3.56						
232	-4.56						
233	-5.56						
234	-6.56		30	233.5 - 235	NA	NA	
235	-7.56						
236	-8.56						
237	-9.56						
238	-10.56	Boring terminated at 237'. Well OW-1002 installed in this borehole.					
239	-11.56						
240	-12.56						
241	-13.56						
242	-14.56						
243	-15.56						
244	-16.56						
245	-17.56						
246	-18.56						
247	-20.19						
248	-20.56						
249	-21.56						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002A
Sheet 1 of 4

SITE	Vogtle ALWR SSAR			HOLE DEPTH	108.5	SURF.ELEV.	NA
LOCATION	Burke County, Georgia			COORDINATES N	NA	E	NA
ANGLE	NA	BEARING	NA	CONTRACTOR	Greene	DRILL NO.	CME 75
DRILLING METHOD	HSA 3 1/4"			NO. SAMPLES	22	NO. U.D. SAMPLES	NA
WATER TABLE DEPTH	90'	ELEV.	NA			DATE TAKEN	5/25/2005
TYPE GROUT	NA	QUANTITY	NA	MIX	NA	DRILLING START DATE	5/24/2005
DRILLER	Greene/Arthur	RECORDER	Steve Bearce	APPROVED	NA	DRILLING COMP. DATE	5/25/2005

Depth FT.	Elev. FT.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
0							
1							
2							
3							
4		Red brown silty SAND (SM) to SAND (SW), fine- to coarse-grained	1A	3.5-5	11-13-15	28	
5							
6							
7							
8							
9		Yellow brown SAND (SW), fine- to medium-grained	2A	8.5-10	6-8-10	18	
10							
11							
12							
13							
14		Light brown clayey SAND (SC), fine- to medium-grained	3A	13.5-15	3-4-5	9	
15							
16							
17							
18							
19			4A	18.5-20	4-4-3	7	
20							
21							
22							
23							
24							

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002A
Sheet 2 of 4

SITE Vogtle ALWR SSAR TOTAL DEPTH 108.5 SURF.ELEV.

Depth FT.	Elev. FT.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To FT.	Blows	N BPF	Comments
25		Light tan sandy Clay (CL)	5A	23.5-25	4-4-5	9	
26							
27							
28							
29							
30			6A	28.5 - 30	3-3-3	6	
31							
32							
33							
34		Buff COQUINA in layers ~=1/2 recovery of coquina	7A	33.5 - 35	50/3"	50/3"	
35							
36							
37							
38							
39		Buff colored, white shelly (<10%) clayey SAND (SC)	8A	38.5 - 40	10-9-8	17	
40							
41							
42							
43							
44		Same as above but no shells	9A	43.5 - 45	3-4-5	9	
45							
46							
47							
48							
49		Buff colored fine sandy CLAY (CL)	10A	48.5 - 50	7-2-9	11	
50							
51							
52							
53							
54		Grading to clayey fine SAND (SC)	11A	53.5 - 55	4-2-10	12	
55							
56							

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002A
Sheet 3 of 4

SITE Vogtle ALWR SSAR TOTAL DEPTH 108.5' SURF.ELEV.

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
57							
58							
59		Buff colored, sandy shelly (15%) CLAY (CL)	12A	58.5-60	28-26-13	39	high N due to shells
60							
61							
62							
63							
64		Buff colored fine-grained clayey SAND (SC) moist	13A	63.5-65	11-13-19	32	
65							
66							
67							
68		Tan, slightly pink fine-grained sandy CLAY (CL), with fine-grained SAND, (SC) slightly moist					
69			14A	68.5-70	8-12-50	62	
70							
71							
72							
73							
74		Buff colored slightly green shelly, clayey, SAND (SC)	15A	73.5-75	8-12-27	39	
75							
76							
77							
78							
79		Light brown, silty, fine-grained SAND (SM), moist	16A	78.5-80	5-20-25	45	
80							
81							
82							
83							
84			17A	83.5-85	11-21-25	46	
85							
86							
87							
88							

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1002A
Sheet 4 of 4

SITE **Vogtle ALWR SSAR** TOTAL DEPTH **108.5** SURF.ELEV.

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
89		Tan fine-grained SAND, (SP), wet	18A	88.5-90	12-25-31	56	
90							5/24/05 ▼ 90' from ground surface
91							
92							
93							
94		Buff silty, SAND, (SM), wet	19A	93.5-95	50/4"	50/4"	
95							
96							
97							
98							
99		Saturated with shell fragments (thin, 4mm, to thick, ~1cm)	20A	98.5-100	12-50/3"	12-50/3"	
100							
101							
102							
103							
104							
105		Greenish grey, MARL, damp	21A	103.5-105	3-1-50	51	
106							
107							
108							
109		Boring Terminated @ 108.5'.	22A	108.5-110	11-50	61	
110		This borehole was abandoned due to use of 3 1/4" augers.					
111		Moved over approximately 20					
112		feet north and drilled OW-1002 with ProSonic rig. Well was installed in borehole OW-1002.					
113							
114							
115							
116							
117							
118							
119							
120							

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1003
Sheet 1 of 4

SITE	Vogtle ALWR SSAR	HOLE DEPTH	90	SURF.ELEV.	NA
LOCATION	Burke County, Georgia	COORDINATES N	NA	E	NA
ANGLE	NA	BEARING	NA	CONTRACTOR	S&ME
DRILL NO.	CME 550	DRILLING METHOD	31/4" HSA	NO. SAMPLES	18
NO. U.D. SAMPLES	NA	WATER TABLE DEPTH	63.6'	ELEV.	NA
TIME AFTER COMP.	NA	DATE TAKEN	5/25/2005	TYPE GROUT	NA
QUANTITY	NA	MIX	NA	DRILLING START DATE	5/24/2005
DRILLER	TIM	RECORDER	Steve Bearce	APPROVED	NA
DRILLING COMP. DATE	5/24/2005				

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
0							
1		Red-brown silty-clayey SAND (SM-SC) fine- to medium-grained, moist					
2							
3							
4							
5			1	3.5-5	7-13-17	30	
6							
7							
8							
9		Light brown, silty SAND, (SM) to SAND (SW) fine- to medium-grained					
10			2	8.5-10	9-6-6	12	
11							
12							
13							
14		Red-brown silty-clayey SAND (SM-SC), fine-grained					
15			3	13.5-15	8-11-13	24	
16							
17							
18							
19		Red brown sandy SILT (ML) and Red-brown silty-clayey SAND, (SM-SC) fine-grained					
20			4	18.5-20	9-14-15	29	
21							
22							
23							
24		Yellow-brown SAND, (SW)					

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1003
Sheet 2 of 4

SITE Vogtle ALWR SSAR TOTAL DEPTH 90 SURF.ELEV. NA

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
25		Fine- to medium-grained SAND, (SW) damp	5	23.5-25	8-11-17	28	
26							
27							
28							
29		Red-Brown silty SAND (SM) with laminations of clayey SAND (SM), clay and silt					
30			6	28.5-30	6-5-7	12	
31							
32							
33							
34							
35		Yellow-brown with mottled grey clayey SAND (SC) and fine-grained SAND, damp	7	33.5-35	7-5-5	10	
36							
37							
38							
39		Same as above with some sandy CLAY laminations, damp			4-4-4	8	
40			8	38.5-40			
41							
42							
43							
44		Yellow brown sandy CLAY (CL) fine-grained SAND, damp					
45			9	43.5-45	3-3-4	7	
46							
47							
48							
49		Layered yellow brown clayey SAND, (SC) and yellow brown sandy CLAY, moist					
50			10	48.5-50	3-3-4	7	
51							
52							
53							
54		very moist			2-2-5	7	
55			11	53.5-55			
56							

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1003
Sheet 3 of 4

SITE Vogtle ALWR SSAR TOTAL DEPTH 90 SURF.ELEV. NA

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To FT.	Blows	N BPF	Comments
57							
58							
59		Light pinkish tan SAND (SW), fine- to medium-grained					
60			12	58.5-60	2-7-9	16	
61							
62							
63							
64		Light tan clayey SAND (SC)					5/25/05 ▼
65			13	63.5-65	WOR	WOR	63.6' from ground surface
66							
67							
68							
69		Buff colored clayey SAND, (SC) fine to medium grained					Saturated
70		SAND	14	68.5-70	WOR 18"	WOR 18"	
71							
72							
73							
74		Same as above					
75			15	73.5-75	WOR 12"	WOR 12"	
76							
77							
78							
79		Reddish brown silty SAND (SM)					
80			16	78.5-80	1-1-2	3	
81							
82							
83							
84		Light tan silty SAND (SM)					
85		Tan and grey clayey COQUINA	17	83.5-85	1-1-2	3	
86							
87							
88							

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1003
Sheet 4 of 4

SITE Vogtle ALWR SSAR TOTAL DEPTH 90 SURF.ELEV. NA

Depth Ft.	Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
89			18	88.5-90	13-21-23	44	
90		Greenish grey MARL					
91		BORING Terminated at 90.0'					
92		This borehole was abandoned due to the use of 3 1/4" augers.					
93							
94		Shallow well OW-1003 was installed approximately 10' south of this borehole. No boring log was prepared for the hole due to the proximity of this borehole.					
95							
96							
97							
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1004
Sheet 1 of 7

SIT: Vogtle ALWR SSAR | HOLE DEPTH: 187 | SURF.ELEV.: 222.92
LOCATION: Burke County, Georgia | COORDINATES N: 1142842.176 | E: 621880.794
AN: NA | BEARING: NA | CONTRACTOR: Prosonic | DRILL NO.: SR-083
DRILLING METHOD: Sonic | NO. SAMPLES: 20 | NO. U.D. SAMPLES: NA
WATER TABLE DEP: | ELEV.: NA | TIME AFTER COMP.: NA | DATE TAKEN:
TYPE GROUT: NA | QUANTITY: NA | MIX: | DRILLING START DATE: 6/3/2005
DRILLER: Tony, Mike | RECORDER: S. Bearce | APPROVED: NA | DRILLING COMP. DATE: 6/11/2005

epth	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
0	222.92						
1	221.92	This borehole was not sampled until 87'.					
2	220.92	OW-1004 is a well pair with OW-1003. The well is approximately ---feet --- of OW-1003.					
3	219.92						
4	218.92	See boring log OW-1003 for description of upper sediments.					
5	217.92						
6	216.92						
7	215.92						
8	214.92						
9	213.92						
10	212.92						
11	211.92						
12	210.92						
13	209.92						
14	208.92						
15	207.92						
16	206.92						
17	205.92						
18	204.92						
19	203.92						
20	202.92						
21	201.92						
22	200.92						
23	199.92						
24	198.92						

Form GS9901 7-26-2(

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1004

Sheet 2 of 7

SITE Vogtle ALWR SSAR TOTAL DEPTH 187 SURF.ELEV. 222.92

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	196.92	See page 1							
26	195.92								
27	194.92								
28	193.92								
29	192.92								
30	191.92								
31	190.92								
32	189.92								
33	188.92								
34	187.92								
35	186.92								
36	185.92								
37	184.92								
38	183.92								
39	182.92								
40	181.92								
41	180.92								
42	179.92								
43	178.92								
44	177.92								
45	176.92								
46	175.92								
47	174.92								
48	173.92								
49	172.92								
50	171.92								
51	170.92								
52	169.92								
53	168.92								
54	163.39								
55	166.92								
56	161.39								

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1004
Sheet 3 of 7

SITE Vogtle ALWR SSAR TOTAL DEPTH 187 SURF.ELEV. 222.92

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
57	165.92	See page 1							
58	164.92								
59	163.92								
60	162.92								
61	161.92								
62	160.92								
63	159.92								
64	158.92								
65	157.92								
66	156.92								
67	155.92								
68	154.92								
69	153.92								
70	152.92								
71	151.92								
72	150.92								
73	149.92								
74	148.92								
75	147.92								
76	146.92								
77	145.92								
78	144.92								
79	143.92								
80	142.92								
81	141.92								
82	140.92								
83	139.92								
84	138.92								
85	137.92								
86	132.39								
87	135.92	Start sampling at 87'							
88	134.92	Olive-tan, wet CLAY (CL)							

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1004
Sheet 4 of 7

SITE Vogtle ALWR SSAR TOTAL DEPTH 187 SURF.ELEV. 222.92

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
89	133.92		1	88.5 - 90.0	NA	NA	
90	132.92						
91	131.92	Greenish grey MARL					
92	130.92						
93	129.92						
94	128.92		2	93.5 - 95	NA	NA	
95	127.92						
96	126.92						
97	125.92						
98	124.92						
99	123.92		3	98.5 - 100	NA	NA	
100	122.92						
101	121.92						
102	120.92						
103	119.92	Greenish grey shelly MARL with white fossils					
104	118.92		4	103.5 - 105	NA	NA	
105	117.92						
106	116.92						
107	115.92						
108	114.92						
109	113.92		5	108.5 - 110	NA	NA	
110	112.92						
111	111.92						
112	110.92						
113	109.92						
114	108.92						
115	107.92		6	113.5 - 115	NA	NA	
116	106.92						
117	105.92						
118	100.39						
119	103.92		7	118.5 - 120.	NA	NA	
120	102.92						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1004
Sheet 5 of 7

SITE: Vogtle ALWR SSAR | TOTAL DEPTH: 187 | SURF.ELEV.: 222.92

Depth Ft.	Elev. FT.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To FT.	Blows	N BPF	Comments
121	101.92						
122	100.92	Shelly greenish grey MARL					
123	99.92						
124	98.92		8	123.5 - 125	NA	NA	
125	97.92						
126	96.92						
127	95.92						
128	94.92						
129	93.92	abundant (30%) gravel					
130	92.92		9	130 - 131.5	NA	NA	
131	91.92						
132	90.92						
133	89.92						
134	88.92						
135	87.92		10	133.5 - 135	NA	NA	
136	86.92						
137	85.92						
138	84.92						
139	83.92		11	138.5 - 140	NA	NA	
140	82.92						
141	81.92						
142	80.92						
143	79.92						
144	78.92		12	143.5 - 145	NA	NA	
145	77.92						
146	76.92						
147	75.92	6" gradational contact with abundant shells (white)					
148	74.92						
149	73.92	Dark grey, fine- to coarse-grained SAND, (SW) with green sand grains (glauconite or dolomite?)	13	148.5 - 150	NA	NA	
150	68.39						
151	71.92						
152	70.92						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1004
Sheet 6 of 7

SITE Vogtle ALWR SSAR TOTAL DEPTH 187 SURF.ELEV. 222.92

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
153	69.92	grades to fine- to medium-grained dark grey SAND w/ organics, cohesive leaving core barrel, wet, poorly graded with silt (SP-SM)	14	153.5 - 155	NA	NA	
154	68.92						
155	67.92						
156	66.92						
157	65.92						
158	64.92		15	158.5 - 169	NA	NA	
159	63.92						
160	62.92						
161	61.92						
162	60.92						
163	59.92		16	163.5 - 170	NA	NA	
164	58.92	Light grey, becomes loose coming out of core barrel fine-grained SAND (SP) with clay and silt					
165	57.92						
166	56.92						
167	55.92						
168	54.92		17	168.5 - 170	NA	NA	
169	53.92						
170	52.92						
171	51.92						
172	50.92						
173	49.92		18	173.5 - 175	NA	NA	
174	48.92						
175	47.92	Dark grey organic, silty SAND (SM)					
176	46.92						
177	45.92						
178	44.92		19	178.5 - 180	NA	NA	
179	43.92						
180	42.92						
181	41.92						
182	36.39						
183	39.92		20	183.5 - 185	NA	NA	
184	34.39						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1004
Sheet 7 of 7

SITE **Vogtle ALWR SSAR** TOTAL DEPTH **187** SURF.ELEV. 222.92

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
185	37.92	Dark grey organic, silty SAND (SM)	20	188.5 - 190	NA	NA	
186	36.92						
187	35.92						
188	34.92	Boring teminated at 187'					
189	33.92	Well OW-1004 is installed in this borehole.					
190	32.92						
191	31.92						
192	30.92						
193	29.92						
194	28.92						
195	27.92						
196	26.92						
197	25.92						
198	24.92						
199	23.92						
200	22.92						
201	21.92						
202	20.92						
203	19.92						
204	18.92						
205	17.92						
206	16.92						
206	16.92						
208	14.92						
209	13.92						
210	12.92						
211	11.92						
212	10.92						
213	9.92						
214	4.39						
215	7.92						
216	6.92						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1005
Sheet 1 of 6

SITE: Vogtle ALWR SSAR | HOLE DEPTH: 170 | SURF.ELEV.: 264.389
LOCATION: Burke County, Georgia | COORDINATES N: 1144047.86 | E: 620408.765
ANGLE: NA | BEARING: NA | CONTRACTOR: S&ME | DRILL NO.: CME B55
DRILLING METHOD: 4/14" HSA | NO. SAMPLES: 19 | NO. U.D. SAMPLES: NA
WATER TABLE DEPTH: | ELEV.: | TIME AFTER COMP.: | DATE TAKEN:
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 6/2/2005
DRILLER: Ted | RECORDER: R Tinsley/SCB | APPROVED: NA | DRILLING COMP. DATE: 6/7/2005

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
0	264.39						
1	263.39	Sampling in this borehole began at 68.5'. The adjacent borehole OW-1005A was drilled to 75'. The borehole was abandoned due to the use of 3 1/4" augers, which were incorrect size for well installation. This borehole OW-1005 was located approximately 10' from feet from OW-1005A. Monitoring well OW-1005 is installed in this borehole.					
2	262.39						
3	261.39						
4	260.39						
5	259.39						
6	258.39						
7	257.39						
8	256.39						
9	255.39						
10	254.39						
11	253.39						
12	252.39						
13	251.39						
14	250.39						
15	249.39						
16	248.39						
17	247.39						
18	246.39						
19	245.39						
20	244.39						
21	243.39						
22	242.39						
23	241.39						
24	240.39						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1005
Sheet 2 of 6

SITE Vogtle ALWR SSAR TOTAL DEPTH 170 SURF.ELEV. 264.389

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
25	239.39	See page 1					
26	238.39						
27	237.39						
28	236.39						
29	235.39						
30	234.39						
31	233.39						
32	232.39						
33	231.39						
34	230.39						
35	229.39						
36	228.39						
37	227.39						
38	226.39						
39	225.39						
40	224.39						
41	223.39						
42	222.39						
43	221.39						
44	220.39						
45	219.39						
46	218.39						
47	217.39						
48	216.39						
49	215.39						
50	214.39						
51	213.39						
52	212.39						
53	211.39						
54							
55	209.39						
56	208.39						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1005
Sheet 3 of 6

SITE Vogtle ALWR SSAR TOTAL DEPTH 170 SURF.ELEV. 264.389

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
57	207.39	See page 1					
58	206.39						
59	205.39						
60	204.39						
61	203.39						
62	202.39						
63	201.39						
64	200.39						
65	199.39						
66	198.39						
67	197.39						
68	196.39	Sampling begins at 68.5'					
69	195.39		1B	68.5-70	2-36-50/1	36 50/1"	
70	194.39	Light grey to white sandy SILT (ML), calcareous with large and small shell fragments, very stiff					
71	193.39						
72	192.39						
73	191.39						
74	190.39		2B	73.5-75	9-14-36	50	
75	74.90	fewer shells, less sand					
76	188.39	Greenish grey MARL					
77	76.20 187.39	Light grey SILT, very stiff, calcareous with scattered shell fragments (ML)	3B	78.5-80	15-19-24	43	
78	186.39						
79	185.39						
80	184.39						
81	183.39						
82	182.39						
83	181.39		4B	83.5-85	50/2"	50/2"	
84	180.39						
85	179.39						
86							
87	177.39						
88	176.39						

SOUTHERN COMPANY
Energy to Serve Your World

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1005
Sheet 4 of 6

SITE Vogtle ALWR SSAR TOTAL DEPTH 170 SURF.ELEV. 264.389

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
89	175.39		5B	88.5-90	7-17-30	47	
90	174.39	Light brownish grey SAND, fine to medium-grained, slightly silty (SW), calcareous					
91	173.39						
92	172.39	Mottled white to yellowish orange, silty SAND, with small to large shell fragments, Dense (SM)					
93	171.39						
94	170.39		6B	93.5-95	7-9-14	23	
95	169.39						
96	168.39	Light grey SILT, very stiff (ML)					
97	167.39	Pale yellow sandy SILT (ML) and silty SAND SM)					
98	166.39						
99	165.39		7B	98.5-100	7-17-34	51	
100	164.39						
101	163.39						
102	162.39						
103	161.39						
104	160.39	Greenish grey MARL	8B	103.5-105	18-34-29	63	
105	159.39	Pale yellow sandy SILT (ML) and silty SAND (SM)					
106	158.39						
107	157.39						
108	156.39						
109	155.39	White SHELL HASH with fine-coarse-grained SAND and large shell fragments	9B	108.5-110	8-18-39	57	
110	154.39						
111	153.39						
112	152.39						
113	151.39						
114	150.39		10B	113.5-115	12-30-30	60	
115	149.39						
116	148.39						
117	147.39						
118	145.76	Same as above with increase in fines					
119	145.39		11B	118.5-120	16-20-40	60	
120	144.39						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1005
Sheet 5 of 6

SITE: Vogtle ALWR SSAR — TOTAL DEPTH: 170 — SURF.ELEV.: 264.389

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
121	143.39						
122	142.39						
123	141.39	White SHELL HASH with fine-coarse-grained SAND (SW) and large shell fragments	12B	123.5-125	8-8-9	17	
124	140.39						
125	139.39						
126	138.39						
127	137.39						
128	136.39						
129	135.39		13B	128.5-130	15-48-40	88	
130	134.39						
131	133.39						
132	132.39						
133	131.39						
134	130.39	Pale yellow SAND, fine to very fine- grained, clean (SP)	14B	133.5-135	7-9-21	30	
135	129.39						
136	128.39						
137	127.39						
138	126.39						
139	125.39						
140	124.39	scattered shell pieces, dense	15B	138.5-140	10-13-30	43	
141	123.39						
142	122.39						
143	121.39						
144	120.39	increasing fines	16B	143.5-145	8-12-30	42	
145	119.39						
146	118.39						
147	117.39						
148	116.39						
149	115.39	Pale yellow, silty SAND, calcareous (SM), fine-coarse-grained with shell pieces	17B	148.5-150	49/50/3"	49/ 50/3"	
150							
151	113.39						
152	112.39						

Form GS9901 7-26-2004

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1005
Sheet 6 of 6

SITE **Vogtle ALWR SSAR** TOTAL DEPTH **170** SURF.ELEV. 264.389

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
153	111.39						
154	110.39	Pale yellow, silty SAND, calcareous (SM), fine- to coarse-grained with shell pieces	18B	153.5-155	12-33-50/2	33/ 50/2"	
155	109.39						
156	108.39						
157	107.39						
158	106.39						
159	105.39						
160	104.39	Same as above, slightly more consolidated	19B	158.5-160	25-22-44	66	Boring paused to procure more auger 6/04/05
161	103.39						
162	102.39						
163	101.39						
164	100.39			163.5-165	25-50/2"	25/ 50/2"	
165	99.39	Dark greenish grey MARL					
166	98.39						
167	97.39						
168	96.39						
169	95.39	Boring Terminated at 168.5		168.5 - 170	NA	NA	
170	94.39						
171	93.39						
172	92.39						
173	91.39						
174	90.39						
175	89.39						
176	88.39						
177	87.39						
178	86.39						
179	85.39						
180	84.39						
181	83.39						
182	81.76						
183	81.39						
184	80.39						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1005A
Sheet 1 of 3

SITE: Vogtle ALWR SSAR | HOLE DEPTH: 75 | SURF.ELEV.: 263
LOCATION: Burke County, Georgia | COORDINATES N: NA | E: NA
ANGLE: NA | BEARING: NA | CONTRACTOR: Kilman | DRILL NO.: CME 45
DRILLING METHOD: 3 1/4" HAS | NO. SAMPLES: 15 | NO. U.D. SAMPLES: NA
WATER TABLE DEPTH: NA | ELEV.: NA | TIME AFTER COMP.: NA | DATE TAKEN: NA
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 5/31/2005
DRILLER: Kilman | RECORDER: Tinsley | APPROVED: NA | DRILLING COMP. DATE: 5/31/2005

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
0	263.00						
1							
2	262.00	Brown to reddish yellow SAND (SP), fine- to medium-grained, loose					
3	261.00						
4	260.00		1A	3.5-5	4-12-11	23	
5	259.00						
6	258.00						
7	257.00						
8	256.00	Mottled red and yellow silty SAND, fine- medium-grained (SW) to sandy silt (ML)					
9	255.00		2A	8.5-10	2-10-14	24	
10	254.00						
11	253.00						
12	252.00						
13	251.00						
14	250.00	Red SAND, fine-grained, loose (SP)	3A	13.5-15	3-7-7	14	
15	249.00						
16	248.00						
17	247.00						
18	246.00						
19	245.00	Dark red, SAND, fine-grained (SP), loose	4A	18.5-20	7-6-6	12	
20	244.00						
21	243.00						
22	242.00						
23	241.00						
24	240.00						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1005A
Sheet 2 of 3

SITE Vogtle ALWR SSAR — TOTAL DEPTH 75 — SURF.ELEV. 263.759

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments	% Rec	RQD
25	238.76	Red and yellow SAND, fine-grained (SP), loose	5A	23.5-25	11-7-8	15			
26	237.76								
27	236.76								
28	235.76								
29	234.76	Yellow SAND, fine-grained (SP), loose	6A	28.5-30	6-7-8	15			
30	233.76								
31	232.76								
32	231.76								
33	230.76								
34	229.76		7A	33.5-35	7-10-11	21			
35	228.76								
36	227.76								
37	226.76								
38	225.76								
39	224.76	Red to light red, SAND, fine-grained, (SP), loose	8A	38.5-40	8-7-8	15			
40	223.76								
41	222.76								
42	221.76								
43	220.76								
44	219.76	Strong Brown, SAND, fine-coarse grained with some fines, (SW)	9A	43.5-45	13-8-8	16			
45	218.76								
46	217.76								
47	216.76								
48	215.76								
49	214.76	Brown to grey silty SAND, fine-coarse grained (SM)	10A	48.5-50	13-7-5	12			
50	213.76								
51	212.76								
52	211.76								
53	210.76								
54	209.76		11A	53.5-55	3-3-3	6			
55	208.76	Light grey CLAY (CL)							
56	207.76								

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1005A

Sheet 3 of 3

SITE Vogtle ALWR SSAR TOTAL DEPTH 75 SURF.ELEV.

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
57	-57.00						
58	-58.00						
59	-59.00	Light grey silty SAND very fine to fine grained, (SW)	12A	58.5-60	4-7-9	16	
60	-60.00						
61	-61.00						
62	-62.00						
63	-63.00						
64	-64.00	Light grey CLAY, (CL) stiff, calcareous	13A	63.5-65	4-5-25	30	
65	-65.00						
66	-66.00						
67	-67.00						
68	-68.00		14A	68.5-70	8-12-23	35	
69	-69.00						
70	-70.00						
71	-71.00						
72	-72.00						
73	-73.00						
74	-74.00		15A	73.5-75	9-11-21	32	
75							
76	-76.00	Boring terminated at 75' .					
77	-77.00	This borehole was abandoned due to the use of 3 1/4" augers, which are incorrect size for well installation.					
78	-78.00						
79	-79.00	Borehole OW-1005 was completed approximately 10 ' from this hole using 4 1/4" augers. Well OW-1005 is installed in that hole.					
80	-80.00						
81	-81.00						
82	-82.00						
83	-83.00						
84	-84.00						
85	-85.00						
86	-86.00						
87	-87.00						
88	-88.00						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1006
Sheet 1 of 5

SITE	Vogtle ALWR SSAR	HOLE DEPTH	135	SURF.ELEV.	227.121
LOCATION	Burke County, Georgia	COORDINATES N	1143817.854	E	619179.749
ANGLE	NA	BEARING	NA	CONTRACTOR	Greene
DRILL NO.	CME 75	DRILLING METHOD	HSA	NO. SAMPLES	4
NO. U.D. SAMPLES	NA	WATER TABLE DEPTH		ELEV.	
TIME AFTER COMP.		DATE TAKEN		TYPE GROUT	NA
QUANTITY	NA	MIX	NA	DRILLING START DATE	6/9/2005
DRILLER	Arthur, Jarred	RECORDER	SC Bearce	APPROVED	NA
DRILLING COMP. DATE	6/14/2005				

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
0	227.12						
1	226.12	No sampling prior to 118.5. See log for 1006A for soil descriptions through 120-130' depth. OW-1006A was abandoned. Drilling was terminated due to shortage of auger.					
2	225.12						
3	224.12						
4	223.12						
5	222.12						
6	221.12						
7	220.12						
8	219.12						
9	218.12						
10	217.12						
11	216.12						
12	215.12						
13	214.12						
14	213.12						
15	212.12						
16	211.12						
17	210.12						
18	209.12						
19	208.12						
20	207.12						
21	206.12						
22	205.12						
23	204.12						
24	203.12						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1006

SITE Vogtle ALWR SSAR | TOTAL DEPTH 135 | SURF.ELEV. 227.121

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
25	202.12						
26	201.12	See page 1					
27	200.12						
28	199.12						
29	198.12						
30	197.12						
31	196.12						
32	195.12						
33	194.12						
34	193.12						
35	192.12						
36	191.12						
37	190.12						
38	189.12						
39	188.12						
40	187.12						
41	186.12						
42	185.12						
43	184.12						
44	183.12						
45	182.12						
46	181.12						
47	180.12						
48	179.12						
49	178.12						
50	177.12						
51	176.12						
52	175.12						
53	174.12						
54	172.49						
55	172.12						
56	171.12						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1006

SITE Vogtle ALWR SSAR — TOTAL DEPTH 135 — SURF.ELEV. 227.121

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
57	170.12						
58	169.12	See page 1					
59	168.12						
60	167.12						
61	166.12						
62	165.12						
63	164.12						
64	163.12						
65	162.12						
66	161.12						
67	160.12						
68	159.12						
69	158.12						
70	157.12						
71	156.12						
72	155.12						
73	154.12						
74	153.12						
75	152.12						
76	151.12						
77	150.12						
78	149.12						
79	148.12						
80	147.12						
81	146.12						
82	145.12						
83	144.12						
84	143.12						
85	142.12						
86	140.49						
87	140.12						
88	139.12						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1006
Sheet 4 of 5

SITE Vogtle ALWR SSAR TOTAL DEPTH 135 SURF.ELEV. 227.121

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
89							
90							
91							
92							
93							
94							
95							
96							
97							
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118		Sampling begins at 118.5'	1	118.5-120	No SPTs		Pushed because of problems
119							
120		Tan sandy and shelly CLAY (CH), saturated					

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1006

Sheet 5 of 5

SITE **Vogtle ALWR SSAR** TOTAL DEPTH **135** SURF.ELEV. **227.121**

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N	Comments
121	106.12						
122	105.12						
123	104.12						
124	103.12	Tan sandy and shelly CLAY (CH), saturated	2	123.5-125	NA	NA	No SPTs
125	102.12						Pushed because of drilling problems
126	101.12						
127	100.12						
128	99.12						
129	98.12		3	128.5-130	NA	NA	
130	97.12	Light tan, fine-coarse grained SAND with shell (SW)					
131	96.12						
132	95.12						
133	94.12						
134	93.12	Greenish grey MARL	4	133.5-135	NA	NA	
135	92.12						last sample at 135.0'
136	91.12	Boring terminated at 133.5					~six 150 gallon tubs of water used during drilling
137	90.12						
138	89.12						
139	88.12						
140	87.12						
141	86.12						
142	85.12						
143	84.12						
144	83.12						
145	82.12						
146	81.12						
147	80.12						
148	79.12						
149	78.12						
150	76.49						
151	76.12						
152	75.12						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1006A
Sheet 1 of 5

SITE: Vogtle ALWR SSAR | HOLE DEPTH: 125 | SURF.ELEV.: 226.491
LOCATION: Burke County, Georgia | COORDINATES N: 1143910.384 | E: 775393.399
ANGLE: NA | BEARING: NA | CONTRACTOR: S&ME | DRILL NO.: CME 55
DRILLING METHOD: 4-1/4" HAS | NO. SAMPLES: 25 | NO. U.D. SAMPLES: NA
WATER TABLE DEPTH: 79' | ELEV.: | TIME AFTER COMP.: | DATE TAKEN: 6/3/2005
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 6/3/2005
DRILLER: Tim Hall | RECORDER: Tinsley | APPROVED: NA | DRILLING COMP. DATE: 6/4/2005

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
0	225.49						
1	224.49						
2	223.49						
3	222.49						
4	221.49	Yellowish brown SAND, fine-grained, loose (SP)	1	3.5-5	5-5-7	12	
5	220.49						
6	219.49						
7	218.49						
8	217.49						
9	216.49	Strong brown SAND, fine-grained, loose (SP)	2	8.5-10	3-3-3	6	
10	215.49						
11	214.49						
12	213.49						
13	212.49						
14	211.49	Reddish yellow SAND, fine-grained, loose (SP)	3	13.5-15	3-5-7	12	
15	210.49						
16	209.49						
17	208.49						
18	207.49						
19	206.49	Red and yellow SAND, fine-grained, loose (SP)	4	18.5-20	3-4-5	9	
20	205.49						
21	204.49						
22	203.49						
23	202.49						
24	201.49						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1006A
Sheet 2 of 5

SITE Vogtle ALWR SSAR TOTAL DEPTH 125 SURF.ELEV. 226.491

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
25	201.49	Red and yellow SAND, fine-grained, loose (SP)	5	23.5-25	4-4-4	8	
26	200.49						
27	199.49						
28	198.49		6	28.5-30	3-4-6	10	
29	197.49						
30	196.49						
31	195.49						
32	194.49						
33	193.49						
34	192.49		7	33.5-35	3-5-5	10	
35	191.49						
36	190.49						
37	189.49						
38	188.49					WOR/	
39	187.49	Yellowish red silty SAND, fine-grained (SM)	8	38.5-40	WOR/18"	18"	
40	186.49						
41	185.49						
42	184.49						
43	183.49						
44	182.49	White SAND, fine-grained, loose, with black minerals (SP)	9	43.5-45	WOR 1-1	2	
45	181.49						
46	180.49						
47	179.49						
48	178.49						
49	177.49						
50	176.49	light gray CLAY, slightly sandy, medium stiff (CL)	10	48.5-50	1-2-2	4	
51	175.49						
52	174.49						
53	173.49						
54	172.49	Reddish yellow clayey SAND (SC)	11	53.5-55	WOR/18	WOR/ 18"	
55	171.49						
56	170.49						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1006A
Sheet 3 of 6

SITE: Vogtle ALWR SSAR — TOTAL DEPTH: 125 — SURF.ELEV.: 226.491

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
57	169.49	Light gray and reddish yellow sandy CLAY (CL), soft					
58	168.49		12	58.5-60	1-1-1	2	
59	167.49						
60	166.49						
61	165.49						
62	164.49						
63	163.49						
64	162.49		13	63.5-65	WOH/18"	WHO/ 18"	
65	161.49	Yellow slightly sandy SILT (MH)					
66	160.49						
67	159.49						
68	158.49						
69	157.49	Mottled red to gray clayey SAND, fine- to medium-grained (SC)					
70	156.49		14	68.5-70	WOH/12/5	17	
71	155.49						
72	154.49						
73	153.49						
74	152.49						
75	151.49		15	73.5-75	2-4-3	7	
76	150.49						
77	149.49						
78	148.49						
79	147.49						6/3/2005 ▼
80	146.49	Yellowish brown SAND, fine- to coarse-grained slight fines (SW), loose	16	78.5-80	3-2-2	4	79' from ground surface
81	145.49						
82	144.49						
83	143.49						
84	142.49		17	83.5-85	12-16-17	33	
85	141.49	Pale yellow clayey SAND, to sandy CLAY with small to large shell fragments, stiff (SC-CL)					
86	140.49						
87	139.49						
88	138.49						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1006A
Sheet 4 of 5

SITE Vogtle ALWR SSAR TOTAL DEPTH 125 SURF.ELEV. 226.491

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
89	137.49	Pale yellow sandy CLAY, stiff, calcareous (shell fragments) (CL)	18	88.5-90	7-7-9	16	
90	136.49						
91	135.49						
92	134.49						
93	133.49		19	93.5-95	8-8-9	17	
94	132.49	Pinkish white clayey SAND, fine - coarse-grained with shell fragments (SC)					
95	131.49						
96	130.49						
97	129.49						
98	128.49						
99	127.49	Light gray SAND, fine-grained (SP)	20	98.5-100	12-14-17	31	
100	126.49						
101	125.49						
102	124.49						
103	123.49						
104	122.49						
105	121.49		21	103.5-105	7-7-8	15	
106	120.49						
107	119.49						
108	118.49	Light gray SAND, fine-to medium grained, increase in fines (SW)					
109	117.49		22	108.5-110	10-10-10	20	
110	116.49						
111	115.49						
112	114.49						
113	113.49						
114	112.49	Very light tan silty SAND (SM)	23	113.5-115	10-11-14	25	
115	111.49						
116	110.49						
117	109.49						
118	108.49						
119	107.49	light gray COQUINA, unconsolidated	24	118.5-120	8-9-10	19	
120	106.49						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1006A
Sheet 5 of 5

SITE: Vogtle ALWR SSAR
TOTAL DEPTH: 125
SURF.ELEV.: 226.491

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
121	105.49						
122	104.49						
123	103.49						
124	102.49						
125	101.49	light gray COQUINA, unconsolidated	25	23.5-12	9-16-16	32	
126	100.49	Boring terminated at 125' due to shortage of auger. This borehole was abandoned.					
127	99.49						
128	98.49						
129	97.49						
130	96.49						
131	95.49						
132	94.49						
133	93.49						
134	92.49						
135	91.49						
136	90.49						
137	89.49						
138	88.49						
139	87.49						
140	86.49						
141	85.49						
142	84.49						
143	83.49						
144	82.49						
145	81.49						
146	80.49						
147	79.49						
148	78.49						
149	77.49						
150	76.49						
151	75.49						
152	74.49						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1007
Sheet 1 of 5

SITE: Vogtle ALWR SSAR | HOLE DEPTH: 122 | SURF.ELEV.: 216.91
LOCATION: Burke County, Georgia | COORDINATES N: 1142383.767 | E: 619301.009
ANGLE: NA | BEARING: NA | CONTRACTOR: Greene | DRILL NO.: CME 75 1993
DRILLING METHOD: 4 1/4" HSA | NO. SAMPLES: 6 | NO. U.D. SAMPLES: NA
WATER TABLE DEPTH: | ELEV.: | TIME AFTER COMP.: | DATE TAKEN:
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 6/4/2005
DRILLER: Arthur/Jarrell | RECORDER: SC Bearce | APPROVED: NA | DRILLING COMP. DATE: 6/7/2005

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
0	216.91						
1	215.91						
2	214.91	Sampling in this borehole began at 98.5' (Sheet 4).					
3	213.91	OW-1007 is a well pair with OW-1008. See boring log for OW-1008 for description of upper sediments.					
4	212.91						
5	211.91						
6	210.91						
7	209.91						
8	208.91						
9	207.91						
10	206.91						
11	205.91						
12	204.91						
13	203.91						
14	202.91						
15	201.91						
16	200.91						
17	199.91						
18	198.91						
19	197.91						
20	196.91						
21	195.91						
22	194.91						
23	193.91						
24	192.91						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1007

SITE Vogtle ALWR SSAR

TOTAL DEPTH 122

SURF.ELEV. 216.91

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
25	191.91	See page 1					
26	190.91						
27	189.91						
28	188.91						
29	187.91						
30	186.91						
31	185.91						
32	184.91						
33	183.91						
34	182.91						
35	181.91						
36	180.91						
37	179.91						
38	178.91						
39	177.91						
40	176.91						
41	175.91						
42	174.91						
43	173.91						
44	172.91						
45	171.91						
46	170.91						
47	169.91						
48	168.91						
49	167.91						
50	166.91						
51	165.91						
52	164.91						
53	163.91						
54	162.28						
55	161.91						
56	160.91						

216.28
216.28

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1007

Sheet 3 of 5

SITE Vogtle ALWR SSAR

TOTAL DEPTH 122

SURF.ELEV. 216.91

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
57	159.91	See page 1					
58	158.91						
59	157.91						
60	156.91						
61	155.91						
62	154.91						
63	153.91						
64	152.91						
65	151.91						
66	150.91						
67	149.91						
68	148.91						
69	147.91						
70	146.91						
71	145.91						
72	144.91						
73	143.91						
74	142.91						
75	141.91						
76	140.91						
77	139.91						
78	138.91						
79	137.91						
80	136.91						
81	135.91						
82	134.91						
83	133.91						
84	132.91						
85	131.91						
86	130.28						
87	129.91						
88	128.91						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1007
Sheet 4 of 5

SITE Vogtle ALWR SSAR — TOTAL DEPTH 122 — SURF.ELEV. 216.91

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
89	127.91						
90	126.91						
91	125.91						
92	124.91						
93	123.91						
94	122.91						
95	121.91						
96	120.91						
97	119.91						
98	118.91	Drilling begins at 98.5'					
99	117.91		1	98.5-100	WOR		
100	116.91						
101	115.91						
102	114.91						
103	113.91						
104	112.91	Tan fine-grained silty SAND (SM), saturated					
105	111.91		2	103.5-105	2-4-6	10	
106	110.91						
107	109.91						
108	108.91						
109	107.91	Very light tan silty SAND (SM) becoming shelly	3	108.5-110	50/5"	50/5"	
110	106.91						
111	105.91						
112	104.91						
113	103.91						
114	102.91	light olive grey CLAY(CH)	4	113.5-115	80/3"	50/3"	
115	101.91						
116	100.91						
117	99.91						
118							
119	97.91	Greenish grey MARL					
120	96.91		5	118.5-120	NA	NA	

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1007
Sheet 5 of 5

SITE **Vogtle ALWR SSAR** TOTAL DEPTH **122** SURF.ELEV. 216.91

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N (BPF)	Comments
121	95.91	Greenish grey MARL	5	120-122	NA	NA	ss pushed with hydraulics because cat-head broke
122	94.91	Boring terminated at 122'					
123	93.91						
124	92.91						Estimated 3 auger volumes of light drilling fliud lost in this hole.
125	91.91						
126	90.91						Approximately 100 gallons of water used in drilling and installation activities in addition to fluid.
127	89.91						
128	88.91						
129	87.91						
130	86.91						
131	85.91						
132	84.91						
133	83.91						
134	82.91						
135	81.91						
136	80.91						
137	79.91						
138	78.91						
139	77.91						
140	76.91						
141	75.91						
142	74.91						
143	73.91						
144	72.91						
145	71.91						
146	70.91						
147	69.91						
148	68.91						
149	67.91						
150	66.28						
151	65.91						
152	64.91						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008
Sheet 1 of 8

SITE: Vogtle ALWR SSAR | HOLE DEPTH: 247 | SURF.ELEV.: 216.65
LOCATION: Burke County, Georgia | COORDINATES N: 1142347.939 | E: 619306.686
ANGLE: NA | BEARING: NA | CONTRACTOR: Kilman/Prosonic | DRILL NO.: CME 45/SR-083
DRILLING METHOD: 3-1/4" HSA and Rotosonic | NO. SAMPLES: 47 | NO. U.D. SAMPLES: NA
WATER TABLE DEPTH: 89.78' TOC | ELEV.: 128.24' | TIME AFTER COMP.: NA | DATE TAKEN: 6/7/2005
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 5/25-26/2005 - Kilman
DRILLER: Tony | RECORDER: S Bearce | APPROVED: NA | DRILLING COMP. DATE: 5/31-6/1/2005 - Prosonic

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N (bpf)	Comments
0	216.65						
1	215.65						
2	214.65						
3	213.65						
4	212.65						
5	211.02	Light red fine-gained silty SAND	1A	3.5-5	24-25-15	40	
6	210.65						
7	209.65						
8	208.65						
9	207.65						
10	206.65		2A	8.5-10	21-22-7	29	
11	205.65						
12	204.65						
13	203.65						
14	202.65						
15	201.65		3A	13.5-15	10-15-14	29	
16	200.65						
17	199.65						
18	198.65						
19	197.65						
20	196.65		4A	18.5-20	6-4-7	11	
21	195.65						
22	194.65						
23	193.65						
24	192.65						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008

Sheet 2 of 8

SITE Vogtle ALWR SSAR

TOTAL DEPTH 247

SURF.ELEV. 216.65

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	191.65	Light yellow fine-grained SAND	5A	23.5-25	15-24-47	71			
26	190.65								
27	189.65								
28	188.65								
29	187.65								
30	186.65		6A	28.5-30	19-14-18	32			
31	185.65								
32	184.65								
33	183.65								
34	182.65								
35	181.65	Light yellow fine-grained silty SAND	7A	33.5-35	28-24-19	43			
36	180.65								
37	179.65								
38	178.65								
39	177.65								
40	176.65	Light red fine-grained silty SAND	8A	38.5-40	3-8-16	24			
41	175.65								
42	174.65								
43	173.65								
44	172.65								
45	171.65		9A	43.5-45	18-27-35	62			
46	170.65								
47	169.65								
48	168.65								
49	167.65								
50	166.65		10A	48.5-50	14-5-6	11			
51	165.65								
52	164.65								
53	163.65								
54	162.02								
55	161.65		11A	53.5-55	20-21-23	44			
56	160.65								

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008
Sheet 3 of 8

SITE Vogtle ALWR SSAR — TOTAL DEPTH 247 — SURF.ELEV. 216.65

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
57	159.65								
58	158.65								
59	157.65								
60	156.65	Mottled reddish yellow brown fine-grained silty SAND	12A	58.5-60	4-6-6	12			
61	155.65								
62	154.65								
63	153.65								
64	152.65								
65	151.65	Mottled light-red fine-grained silty sand	13A	63.5-65	4-4-5	9			
66	150.65								
67	149.65								
68	148.65								
69	147.65								
70	146.65	Light red fine-grained silty SAND, moist	14A	68.5-70	3-2-3	5			
71	145.65								
72	144.65								
73	143.65								
74	142.65								
75	141.65	White medium grained silty SAND - moist	15A	73.5-75	2-2-2	4			
76	140.65								
77	139.65								
78	138.65								
79	137.65						5/25.2005 ▼ 80'		
80	136.65	White silty medium-grained SAND with shell fragments	16A	78.5-80	2-3-3	6			
81	135.65								
82	134.65								
83	133.65								
84	132.65								
85	131.65	White silty sandy SHELL HASH	17A	83.5-85	2-2-2	4			
86	130.02								
87	129.65								
88	128.65								

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008
Sheet 4 of 8

SITE Vogtle ALWR SSAR — 247 — SURF.ELEV. 216.65

Depth ft.	Elev.ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N (bpf)	Comments
89	127.65						
90	126.65	White medium-grained silty SAND, moist	18A	88.5-90	3-4-4	8	6/7/05 ▼ 89.78' from TOC
91	125.65						
92	124.65						
93	123.65						
94	122.65						
95	121.65	White medium-grained silty SAND, with shell fragments and sharks teeth	19A	93.5-95	17-24-21	45	
96	120.65						
97	119.65						
98	118.65						
99	117.65						
100	116.65						
101	115.65	White silty SHELL HASH, saturated	20A	98.5-100	50/2"	50.2"	
102	114.65						
103	113.65						
104	112.65						
105	111.65	White medium-grained silty SAND, saturated	21A	102.5-105	18-20-22	44	
106	110.65						
107	109.65						Kilman drills to 105'
108	108.65						
109	107.65	Yellowish tan, fine-medium and coarse grained SAND (SW) clay and silt present but generally less than 10%	1	108.5 - 110			Prosonic completes hole from 107'
110	106.65	Coarse sand fraction composed of angular shell fragments ranging in size from 2mm to 1 cm.					
111	105.65	Occassional larger shell fragments. Abrupt change/ contact between sample intervals					
112	104.65						
113	103.65						
114	102.65		2	113.5-115	NA	NA	
115	101.65						
116	100.65						
117	99.65						
118	98.02	Medium greenish grey MARL with occassional fossils.	3	118.5-120	NA	NA	
119	97.65						
120	96.65						

Form GS9901 7-26-2004

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008
Sheet 5 of 8

SITE Vogtle ALWR SSAR | TOTAL DEPTH 247 | SURF.ELEV. 216.65

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N (bpf)	Comments
121	95.65						
122	94.65						
123	93.65						
124	92.65	Medium greenish grey MARL with occassional fossils.	4	123.5-125	NA	NA	
125	91.65						
126	90.65						
127	89.65						
128	88.65		5	128.5-130	NA	NA	
129	87.65						
130	86.65						
131	85.65						
132	84.65						
133	83.65						
134	82.65		6	133.5-135	NA	NA	
135	81.65						
136	80.65						
137	79.65	Greenish grey limestone, layer ~ 3" thick, fine-grained, heavier than MARL					
138	78.65						
139	77.65		7	138.5-140	NA	NA	
140	76.65						
141	75.65						
142	74.65						
143	73.65						
144	72.65						
145	71.65						
146	70.65						
147	69.65						
148	68.65	Medium greenish grey MARL with occassional fossils.	8	148.5-150	Na	NA	
149	67.65						
150							
151	65.65						
152	64.65						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008
Sheet 6 of 8

SITE Vogtle ALWR SSAR | TOTAL DEPTH 247 | SURF.ELEV. 216.65

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N (bpf)	Comments
153	63.65						
154	62.65						
155	61.65						
156	60.65						
157	59.65	Medium greenish grey MARL with occassional fossils.					
158	58.65		9	158.5-160	NA	NA	
159	57.65						
160	56.65						
161	55.65						
162	54.65						
163	53.65						
164	52.65		10	163.5-165	NA	NA	
165	51.65						
166	50.65						
167	49.65	Same MARL					
168	48.65						
169	47.65		11	168.5-170	NA	NA	
170	46.65						
171	45.65						
172	44.65						
173	43.65						
174	42.65		12	173.5-175	NA	NA	
175	41.65						
176	40.65	Grades to Shelly or fine to coarse grained SAND (SP) composed of whole and angular shell fragments in a MARL matrix (70%)					
177	39.65						
178	38.65						
179	37.65		13	178.5-180	NA	NA	
180	36.65						
181	35.65	"Sand" ranges from 10-30%					
182							
183	33.65						
184	32.65		14	183.5-185	NA	NA	

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008
Sheet 7 of 8

SITE **Vogtle ALWR SSAR** TAL DEPTH **247** SURF.ELEV. 216.65

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N (bpf)	Comments
185	31.65						
186	30.65						
187	29.65	Same shelly MARL					
188	28.65						
189	27.65		15	188.5-190	NA	NA	
190	26.65						
191	25.65						
192	24.65						
193	23.65						
194	22.65		16	193.5-195	NA	NA	
195	21.65						
196	20.65						
197	19.65						
198	18.65	Same shelly MARL					
199	17.65		17	198.5-200	NA	NA	
200	16.65						
201	15.65						
202	14.65						
203	13.65						
204	12.65		18	203.5-205	NA	NA	
205	11.65						
206	10.65						
206	10.65	Dark grey silty SAND, (SM) fine grained SAND with some zones (1-2) feet of fine to coarse grained silty SAND (SM)					
208	8.65						
209	7.65		19	208.5-210	NA	NA	
210	6.65						
211	5.65						
212	4.65						
213	3.65						
214	2.02		20	213.5-215	NA	NA	
215	1.65						
216	0.65						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008
Sheet 8 of 8

SITE **Vogtle ALWR SSAR** TAL DEPTH SURF.ELEV. 216.65

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N (bpf)	Comments
217	-0.35						
218	-1.35	Dark grey silty SAND, (SM) fine-grained SAND with					
		some zones (1-2) feet of fine- to coarse-grained silty	21	218.5-220	NA	NA	
219	-2.35	SAND (SM)					
220	-3.35						
221	-4.35						
223	-6.35						
			22	223.5-225	NA	NA	
224	-7.35						
225	-8.35						
226	-9.35						
		Gradual change to grey fine SAND (SW)					
227	-10.35						
		Light grey fine SAND (SW)					
228	-11.35						
			23	228.5-230	NA	NA	
229	-12.35						
230	-13.35						
231	-14.35						
232	-15.35						
233	-16.35						
			24	233.5-235	NA	NA	
234	-17.35						
235	-18.35						
236	-19.35						
237	-20.35						
238	-21.35						
		Grey silty SAND (SM)	25	238.5-240	NA	NA	
239	-22.35						
240	-23.35						
241	-24.35						
242	-25.35						
243	-26.35						
		Abrupt change to light grey siliceous clay,	26	243.5-245	NA	NA	
244	-27.35	(CL), to weak SHALE					
245	-28.35						
246	-29.35						
247	-30.98						
		Boring terminated at 247'.					
248	-31.35	Well OW-1008 installed in this borehole.					
249	-32.35						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008A
Sheet 1 of 4

SITE Vogtle ALWR SSAR - ESP | DLE DEPTH 107.5 | SURF.ELEV. NA
LOCATION Burke County, GA | COORDINATES N | E
ANGLE NA | BEARING NA | CONTRACTOR Kilman Bro. | DRILL NO. CME-55
DRILLING METHOD 3 1/4" HAS | NO. SAMPLES 21 | NO. U.D. SAMPLES 0
WATER TABLE DEPTH 80 | ELEV. 136 | TIME AFTER COMP. NA | DATE TAKEN 5/26/2005
TYPE GROUT NA | QUANTITY NA | MIX NA | DRILLING START DATE 5/26/2005
DRILLER Kilman Bro. | RECORDER RA Esposito | APPROVED NA | DRILLING COMP. DATE 5/26/2005

Depth FT.	Elev. FT.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To FT.	Blows	N (bpf)	Comments
0							
1							
2							
3							
4							
5		Light red fine-gained silty SAND	1	3.5-5	24-25-15	40	
6							
7							
8							
9							
10			2	8.5-10	21-22-7	29	
11							
12							
13							
14							
15			S-3	13.5-15	10-15-14	29	
16							
17							
18							
19							
20			S-4	18.5-20	6-4-7	11	
21							
22							
23							
24							

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008A
Sheet 2 of 4

SITE Vogtle ALWR SSAR TOTAL DEPTH 107.5 SURF.ELEV. NA

Depth FT.	Elev. FT.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To FT.	Blows	N (bpf)	Comments
25		Light yellow fine-grained SAND	5	23.5-25	15-24-47	71	
26							
27							
28							
29							
30			6	28.5-30	19-14-18	32	
31							
32							
33							
34							
35		Light yellow fine-grained silty SAND	7	33.5-35	28-24-19	43	
36							
37							
38							
39							
40		Light red fine-grained silty SAND	8	38.5-40	3-8-16	24	
41							
42							
43							
44							
45			9	43.5-45	18-27-35	62	
46							
47							
48							
49							
50			10	48.5-50	14-5-6	11	
51							
52							
53							
54							
55			11	53.5-55	20-21-23	44	
56							

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008A
Sheet 3 of 4

SITE: Vogtle ALWR SSAR | TOTAL DEPTH: 107.5 | SURF.ELEV.: NA

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N (bpf)	Comments
57							
58							
59							
60		Mottled reddish yellow brown fine-grained silty SAND	12	58.5-60	4-6-6	12	
61							
62							
63							
64							
65		Mottled light-red fine-grained silty sand	13	63.5-65	4-4-5	9	
66							
67							
68							
69							
70		Light red fine-grained silty SAND, moist	14	68.5-70	3-2-3	5	
71							
72							
73							
74							
75		White medium grained silty SAND - moist	15	73.5-75	2-2-2	4	
76							
77							
78							
79							
80		White silty medium-grained SAND with shell fragments	16	78.5-80	2-3-3	6	5/26/2005 ▼ 80' from ground surface
81							
82							
83							
84							
85		White silty sandy SHELL HASH	17	83.5-85	2-2-2	4	
86							
87							
88							

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1008A
Sheet 4 of 4

SITE Vogtle ALWR SSAR TOTAL DEPTH 107.5 SURF.ELEV. NA

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N (bpf)	Comments
89							
90		White medium-grained silty SAND, moist	18	88.5-90	3-4-4	8	
91							
92							
93							
94							
95		White medium-grained silty SAND, with shell fragments and sharks teeth	19	93.5-95	17-24-21	45	
96							
97							
98							
99							
100							
101		White silty SHELL HASH, saturated	20	98.5-100	50/2"	100+	
102							
103							
104							
105		White medium-grained silty SAND, saturated	21	102.5-105	18-20-22	44	
106							
107							
108		Boring terminated at 107.5' due to use of 3 1/4" augers.					
109							
110		This borehole was abandoned.					
111		Well OW-1008 is installed in adjacent borehole OW-1008.					
112							
113							
114							
115							
116							
117							
118							
119							
120							

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1009
Sheet 1 of 4

SITE	Vogtle ALWR SSAR - ESP	HOLE DEPTH	100	SURF.ELEV.	220.887
LOCATION	Burke County, Georgia	COORDINATES N	1141891.645	E	620888.608
ANGLE	NA	BEARING	NA	CONTRACTOR	S&ME
DRILL NO.	CME 55	DRILLING METHOD	4-1/4" HAS	NO. SAMPLES	21
NO. U.D. SAMPLES	NA	WATER TABLE DEPTH	70'	ELEV.	150.257'
TIME AFTER COMP.	NA	DATE TAKEN	5/24/2005	TYPE GROUT	NA
QUANTITY	NA	MIX	NA	DRILLING START DATE	5/24/2005
DRILLER	Ted	RECORDER	RA Esposito	APPROVED	NA
DRILLING COMP. DATE	5/27/2005				

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
0	220.89						
1	219.89						
2	218.89	White to red fine-grained SAND					
3	217.89						
4	216.89		1	3.5-5	4-10-10	20	
5	215.89	Dark red fine-grained silty SAND					
6	214.89						
7	213.89						
8	212.89						
9	211.89						
10	210.89		2	8.5-10	3-3-5	8	
11	209.89						
12	208.89						
13	207.89						
14	206.89						
15	205.89		3	13.5-15	2-4-4	8	
16	204.89						
17	203.89						
18	202.89						
19	201.89						
20	200.89		4	18.5-20	4-5-7	12	
21	199.89	moist					
22	198.89						
23	197.89						
24	196.89						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1009
Sheet 2 of 2

SITE Vogtle ALWR SSAR TOTAL DEPTH 100 SURF.ELEV. 220.887

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
25	195.89	Light yellow fine-grained SAND	5	23.5-25	5-5-6	11	
26	194.89						
27	193.89						
28	192.89						
29	191.89						
30	190.89	Light yellow fine-grained silty SAND	6	28.5-30	3-6-7	13	
31	189.89						
32	188.89						
33	187.89						
34	186.89						
35	185.89		7	33.5-35	3-4-5	9	
36	184.89						
37	183.89						
38	182.89						
39	181.89						
40	180.89	Light yellow fine-grained silty clayey SAND, moist	8	38.5-40	2-2-3	5	
41	179.89						
42	178.89						
43	177.89						
44	176.89						
45	175.89	Light yellow silty CLAY, moist-plastic	9	43.5-45	2-4-6	10	
46	174.89						
47	173.89						
48	172.89						
49	171.89						
50	170.89	Light yellow fine- to medium-grained silty SAND, moist	10	48.5-50	3-7-8	15	
51	169.89						
52	168.89						
53	167.89						
54	166.26						
55	165.89	Light yellow fine- to medium-grained silty SAND, moist	11	53.5-55	4-6-7	13	
56	164.89						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1009
Sheet 3 of 4

SITE Vogtle ALWR SSAR TOTAL DEPTH 100 SURF.ELEV. 220.887

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N BPF	Comments
57	163.89						
58	162.89						
59	161.89						
60	160.89	Light yellow silty fine grained SAND - moist	12	58.5-60	4-6-6	12	
61	159.89						
62	158.89						
63	157.89						
64	156.89						
65	155.89	Light yellow silty fine grained SAND - moist	13	63.5-65	0-1-2	3	
66	154.89						
67	153.89						
68	152.89						
69	151.89						
70	150.89	White silty fine-grained SAND - saturated	14	68.5-70	1-2-2	4	5/24/2005 ▼ 70 feet from ground surface
71	149.89						
72	148.89						
73	147.89						
74	146.89						
75	145.89	White medium-to coarse-grained SAND,saturated	15	73.5-75	0-0-1	1	
76	144.89						
77	143.89						
78	142.89						
79	141.89						
80	140.89		16	78.5-80	4-5-6	11	
81	139.89						
82	138.89						
83	137.89						
84	136.89						
85	135.89	Very light tan silty SAND (SM)	17	83.5-85	6-50/4"	100+	
86	134.26						
87	133.89						
88	132.89						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1009
Sheet 4 of 4

SITE Vogtle ALWR SSAR TOTAL DEPTH 100 SURF.ELEV. 220.887

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments	% Rec	RQD
89	131.89								
90	130.89	Tan LIMESTONE shell hash, very light tan silty SAND (SM)	18	88.5-90	50/1"	100+			
91	129.89								
92	128.89								
93	127.89								
94	126.89								
95	125.89	Brown silty CLAY	19	93.5-95	6-18-3	21			
96	124.89								
97	123.89								
98	122.89								
99	121.89								
100	120.89	Green MARL	20	98.5-100	13 / 50/.2	100+			
101	119.89	Boring terminated at 100' OW-1009 installed in this borehole.							
102	118.89								
103	117.89								
104	116.89								
105	115.89								
106	114.89								
107	113.89								
108	112.89								
109	111.89								
110	110.89								
111	109.89								
112	108.89								
113	107.89								
114	106.89								
115	105.89								
116	104.89								
117	103.89								
118	102.26								
119	101.89								
120	100.89								

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1010
Sheet 1 of 4

SITE	Vogtle ALWR SSAR	LE DEPTH	93.5	SURF.ELEV.	216.895
LOCATION	Burke County, Georgia	COORDINATES N	1140808.986	E	620051.708
ANGLE	NA	BEARING	NA	CONTRACTOR	S&ME
DRILL NO.	CME550	DRILLING METHOD	4 1/4" HAS	NO. SAMPLES	19
NO. U.D. SAMPLES	NA	WATER TABLE DEPTH	58.5'	ELEV.	157.765'
TIME AFTER COMP.	NA	DATE TAKEN	6/1/2005	TYPE GROUT	NA
QUANTITY	NA	MIX	NA	DRILLING START DATE	6/1/2005
DRILLER	Tim Hall	RECORDER	R. Tinsley	APPROVED	NA
DRILLING COMP. DATE	6/1/2005				

Depth Ft.	Elev.Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
0	216.90						
1	215.90						
2	214.90						
3	213.90						
4	212.90						
5	211.90	Reddish yellow SAND, fine- to medium-grained with coarse grains and hematite concretions, loose, (SW)	1	3.5-5	11-17-17	34	
6	210.90						
7	209.90						
8	208.90						
9	207.90						
10	206.90	Mottled weak red and brown SAND, fine-grained, Loose (SP)	2	8.5-10	7-8-11	19	
11	205.90						
12	204.90						
13	203.90						
14	202.90						
15	201.90		3	13.5-15	6-7-7	14	
16	200.90						
17	199.90						
18	198.90						
19	197.90						
20	196.90		4	18.5-20	7-7-8	15	
21	195.90						
22	194.90						
23	193.90						
24	192.90						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1010
Sheet 2 of 4

SITE Vogtle ALWR SSAR — TOTAL DEPTH 93.5 — SURF.ELEV. 216.895

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
25	191.90	Mottled weak red and brown SAND, fine- to medium-grained with some coarse grains (SW)	5	23.5-25	9-9-6	15	
26	190.90						
27	189.90						
28	188.90						
29	187.90	Reddish yellow SAND fine- to medium-grained, loose (SW)					
30	186.90		6	28.5-30	9-31-42	73	
31	185.90						
32	184.90						
33	183.90						
34	182.90						
35	181.90		7	33.5-35	7-6-5	11	
36	180.90						
37	179.90						
38	178.90						
39	177.90						
40	176.90	Same as above with some coarse grains	8	38.5-40	5-5-5	10	
41	175.90						
42	174.90						
43	173.90						
44	172.90	Brownish yellow clayey SAND, soft, (SC)					
45	171.90		9	43.5-45	5-2-2	4	
46	170.90						
47	169.90						
48	168.90						
49	167.90	Mottled yellowish red clayey SAND, medium-grained (SC) with organics					
50	166.90		10	48.5-50	2-3-3	6	
51	165.90						
52	164.90						
53	163.90						
54	162.27						
55	161.90	Strong brown sand, medium-grained with slight fines (SP)	11	53.5-55	2-4-5	9	
56	160.90						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1010

Sheet 3 of 4

SITE **Vogtle ALWR SSAR** TOTAL DEPTH **93.5** SURF.ELEV. **216.895**

Depth Ft.	Elev.Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft	Blows	N BPF	Comments
57	159.90						
58	158.90						6/1/2005 ▼
59	157.90	Mottled white to brown clayey SAND, medium-grained (SP), medium dense	12	58.5-60	2-7-7	14	58.5' from ground surface
60	156.90						
61	155.90						
62	154.90						
63	153.90						
64	152.90						
65	151.90	Strong brown clayey SAND, fine- to medium-grained (SC)	13	63.5-65	WOR-2-3	5	
66	150.90						
67	149.90						
68	148.90						
69	147.90						
70	146.90	Brownish yellow silty SAND, medium-grained, (SM)	14	68.5-70	WOH/18"	WHO/ 18"	
71	145.90						
72	144.90						
73	143.90						
74	142.90						
75	141.90	Tan poorly graded SAND with silt (SP-SM)	15	73.5-75	WOR 2'	WOR/ 2'	
76	140.90						
77	139.90						
78	138.90						
79	137.90	Brownish yellow clayey, silty SAND (SC-SM), soft					
80	136.90		16	78.5-80	WOR/18"	WOR/ 18"	
81	135.90						
82	134.90						
83	133.90						
84	132.90						
85	131.90	White SHELL HASH	17	83.5-85	50/3"	50/3"	
86		Grayish green MARL					
87	129.90						
88	128.90						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1010
Sheet 4 of 4

SITE Vogtle ALWR SSAR DEPTH 93.5 SURF.ELEV. 216.895

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
89	127.90						
90	126.90	Grayish green MARL, very stiff	18	88.5-90	18-9-12	21	
91	125.90						
92	124.90						
93	123.90	Boring terminated at 93.5'					
		Well OW-1010 installed in this boring.					
94	122.90						
95	121.90		19	93.5-95	21-50/4"	50/4"	
96	120.90						
97	119.90						
98	118.90						
99	117.90						
100	116.90						
101	115.90						
102	114.90						
103	113.90						
104	112.90						
105	111.90						
106	110.90						
107	109.90						
108	108.90						
109	107.90						
110	106.90						
111	105.90						
112	104.90						
113	103.90						
114	102.90						
115	101.90						
116	100.90						
117	99.90						
118							
119	97.90						
120	96.90						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1011
Sheet 1 of 7

SITE: Vogtle ALWR SSAR | HOLE DEPTH: 217 | SURF.ELEV.: 205.785
LOCATION: Burke County, Georgia | COORDINATES N: 1139956.246 | E: 621033.045
ANGLE: NA | BEARING: NA | CONTRACTOR: Prosonic | DRILL NO.: SR-083
DRILLING METHOD: Sonic | NO. SAMPLES: continuous | NO. U.D. SAMPLES: NA
WATER TABLE DEPTH: NA | ELEV.: NA | TIME AFTER COMP.: NA | DATE TAKEN: NA
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 6/11/2005
DRILLER: Tony | RECORDER: John Pugh | APPROVED: NA | DRILLING COMP. DATE: 6/12/2005

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	205.79								
1	204.79	Sampling in this boring started at 87'. Borehole OW-1012 was sampled from the surface to 93.6'. These two are a well pair.							
2	203.79								
3	202.79								
4	201.79								
5	200.79								
6	199.79								
7	198.79								
8	197.79								
9	196.79								
10	195.79								
11	194.79								
12	193.79								
13	192.79								
14	191.79								
15	190.79								
16	189.79								
17	188.79								
18	187.79								
19	186.79								
20	185.79								
21	184.79								
22	183.79								
23	182.79								
24	181.79								

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1011
Sheet 2 of 7

SITE Vogtle ALWR SSAR TOTAL DEPTH 217 SURF.ELEV. 205.785

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
25	180.79	See page one.					
26	179.79						
27	178.79						
28	177.79						
29	176.79						
30	175.79						
31	174.79						
32	173.79						
33	172.79						
34	171.79						
35	170.79						
36	169.79						
37	168.79						
38	167.79						
39	166.79						
40	165.79						
41	164.79						
42	163.79						
43	162.79						
44	161.79						
45	160.79						
46	159.79						
47	158.79						
48	157.79						
49	156.79						
50	155.79						
51	154.79						
52	153.79						
53	152.79						
54							
55	150.79						
56	149.79						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1011
Sheet 3 of 7

SITE Vogtle ALWR SSAR TOTAL DEPTH 217 SURF.ELEV. 205.785

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
57	148.79	See page one.					
58	147.79						
59	146.79						
60	145.79						
61	144.79						
62	143.79						
63	142.79						
64	141.79						
65	140.79						
66	139.79						
67	138.79						
68	137.79						
69	136.79						
70	135.79						
71	134.79						
72	133.79						
73	132.79						
74	131.79						
75	130.79						
76	129.79						
77	128.79						
78	127.79						
79	126.79						
80	125.79						
81	124.79						
82	123.79						
83	122.79						
84	121.79						
85	120.79						
86	119.16						
87	118.79	Begin sampling at 87' with ProSonic rig.					
88	117.79						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1011
Sheet 4 of 7

SITE Vogtle ALWR SSAR — TOTAL DEPTH 217 — SURF.ELEV. 205.785

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments
89	116.79	Greenish grey CLAY, stiff					
90	115.79		1	88.5-90	NA	NA	
91	114.79						
92	113.79						
93	112.79						
94	111.79	Dark greenish to olive-grey CLAY, moist, stiff, light gray mottling					
95	110.79		2	93.5-95	NA	NA	
96	109.79						
97	108.79						
98	107.79						
99	106.79	Greenish grey CLAY, stiff, moist, small shell fragments					
100	105.79		3	98.5-100	NA	NA	
101	104.79						
102	103.79						
103	102.79						
104	101.79	Greenish grey CLAY, stiff, small shell fragments, not moist					
105	100.79		4	103.5-105	NA	NA	
106	99.79						
107	98.79						
108	97.16						
		LIMESTONE 2"					
109	96.79	Greenish grey CLAY, slightly moist, limestone fragments					
110	95.79		5	108.5-110	NA	NA	
111	94.79						
112	93.79						
113	92.79						
114	91.79	Greenish grey CLAY, not moist, larger shell fragments					
115	90.79		6	113.5-115	NA	NA	
116	89.79						
117	88.79						
118	87.16						
119	86.16	Light greenish grey CLAY, moist, w/ Limestone chunks					
120	85.79		7	118.5-120	NA	NA	

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1011
Sheet 5 of 7

SITE **Vogtle ALWR SSAR** TOTAL DEPTH **217** SURF.ELEV. 205.785

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
121	84.79						
122	83.79						
123	82.79	Light grey LIMESTONE 4"					
124	81.79	Greenish grey CLAY, slightly moist					
125	80.79		8	123.5-125	NA	NA	
126	79.79						
127	78.79						
128	77.79						
129	76.79	Light-grey CLAY, stiff					
130	75.79		9	128.5-130	NA	NA	
131	74.79						
132	73.79						
133	72.79						
134	71.79						
135	70.79		10	133.5-135	NA	NA	
136	69.79						
137	68.79						
138	67.79						
139	66.79						
140	65.79	Greenish grey CLAY, stiff	11	138.5-140	NA	NA	
141	64.79						
142	63.79						
143	62.79						
144	61.79						
145	60.79		12	143.5-145	NA	NA	
146	59.79						
147	58.79						
148	57.79	_ _ _ potential void					
149	56.79						
150	55.16	Greenish grey CLAY, stiff	13	148.5-150	NA	NA	
151	54.79						
152	53.79						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1011
Sheet 6 of 7

SITE **Vogtle ALWR SSAR** TOTAL DEPTH **217** SURF.ELEV. 205.785

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N BPF	Comments
	152.50						
153	52.79						
154	51.79	Light bluish-grey, very fine sands to sandy CLAY, Loose, moist, clayey					
155	50.79		14	153.5-155	NA	NA	
156	49.79						
157	48.79						
158	47.79						
159	46.79	Light grey, slightly sandy CLAY, moist					
160	45.79		15	158.5-160	NA	NA	
161	44.79						
162	43.79						
163	42.79						
164	41.79	Light grey, silty, slightly sandy CLAY, moist					
165	40.79		16	163.5-165	NA	NA	
166	39.79						
167	38.79						
168	37.79						
169	36.79	Greenish grey sandy silty CLAY, bright green and tan nodules					
170	35.79		17	168.5-170	NA	NA	
171	34.79						
172	33.79						
173	32.79						
174	31.79						
175	30.79		18	173.5-175	NA	NA	
176	29.79						
177	28.79						
178	27.79	Dark olive grey CLAY, stiff					
179	26.79						
180	25.79		19	178.5-180	NA	NA	
181	24.79						
182							
183	22.79	Dark olive grey sandy CLAY					
184	21.79						

Form GS9901 7-26-2004

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1011
Sheet 7 of 7

SITE **Vogtle ALWR SSAR** TOTAL DEPTH **217** SURF.ELEV. 205.785

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
185	20.79		20	183.5-185	NA	NA	
186	19.79						
187	18.79						
188	17.79						
189	16.79	Dark grey sandy CLAY					
190	15.79		21	188.5-190	NA	NA	
191	14.79						
192	13.79						
193	12.79						
194	11.79	Dark grey clayey fine SAND grading to					
195	10.79		22	193.5-195	NA	NA	
196	9.79	Clayey medium-grained SAND					
197	8.79						
198	7.79						
199	6.79	Dark bluish-gray silty fine- to medium-grained SAND very moist					
200	5.79		23	198.5-200	NA	NA	
201	4.79						
202	3.79						
203	2.79						
204	1.79						
205	0.78	Gray poorly graded sand with silt (SP-SM)	24	203.5-205	NA	NA	
206	-0.22						
206	-0.22						
208	-2.22						
209	-3.22						
210	-4.22	Gray poorly graded sand with silt (SP-SM)	25	208.5-210	NA	NA	
211	-5.22	Silty gravelly SAND with fossils, shark teeth					
212	-6.22						
213	-7.22						
214	-8.85	Dark bluish gray medium- to coarse-grained SAND					
215	-9.22		26	213.5	215	NA	
216	-10.22	Boring terminated at 217'					

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1012
Sheet 1 of 4

SITE	Vogtle ALWR SSAR	HOLE DEPTH	93.6	SURF.ELEV.	205.355
LOCATION	Burke County, Georgia	COORDINATES N	1139969.496	E	621045.924
ANGLE	NA	BEARING	NA	CONTRACTOR	S&ME
DRILL NO.	CME 55	DRILLING METHOD	HSA 4 1/4" ID	NO. SAMPLES	19
NO. U.D. SAMPLES	NA	WATER TABLE DEPTH	49.5'	ELEV.	155.225'
TIME AFTER COMP.	NA	DATE TAKEN	6/1/2005	TYPE GROUT	NA
QUANTITY	NA	MIX		DRILLING START DATE	5/31/2005
DRILLER	Ted/Rick	RECORDER	Tinsley	APPROVED	NA
DRILLING COMP. DATE	6/1/2005				

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
0	205.36						
1	204.36						
2	203.36						
3	202.36						
4	201.36	Weak red SAND (SW), very fine - fine grained, loose, mottled					
5	200.36		1	3.5-5	2-2-3	5	
6	199.36						
7	198.36						
8	197.36						
9	196.36						
10	195.36		2	8.5-10	2-5-5	10	
11	194.36						
12	193.36						
13	192.36						
14	191.36						
15	190.36	Same as above with stronger mottling	3	13.5-15	3-5-5	10	
16	189.36						
17	188.36						
18	187.36	Brown SAND, fine to medium grained, loose, (SW)					
19	186.36						
20	185.36		4	18.5-20	5-15-26	41	
21	184.36						
22	183.36						
23	182.36						
24	181.36	Reddish yellow SAND					

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1012
Sheet 2 of 4

SITE Vogtle ALWR SSAR | TOTAL DEPTH 93.6 | SURF.ELEV. 205.355

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N BPF	Comments
25	180.36	Reddish yellow SAND (SP), fine- to medium-grained with fines	5	23.5-25	6-16-17	33	
26	179.36						
27	178.36						
28	177.36						
29	176.36	Reddish yellow SAND (SP), fine-grained, loose					
30	175.36		6	28.5-30	3-7-7	14	
31	174.36						
32	173.36						
33	172.36						
34	171.36						
35	170.36		7	33.5-35	3-5-6	11	
36	169.36						
37	168.36						
38	167.36						
39	166.36						
40	165.36		8	38.5-40	2-5-6	11	
41	164.36						
42	163.36						
43	162.36						
44	161.36						
45	160.36		9	43.5-45	3-2-2	4	
46	159.36						
47	158.36	Reddish yellow SAND (SW), medium- to coarse-grained, loose, with fines					
48	157.36						
49	156.36						6/1/2005
50	155.36		10	48.5-50	1-1-2	3	▼ 49.5' from ground surface
51	154.36						
52	153.36	Pale yellow CLAY (CL), slightly sandy					
53	152.36						
54							
55	150.36		11	53.5-55	WHO/2/3	5	micas
56	149.36						

Form GS9901 7-26-2004

H

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1012
Sheet 3 of 4

SITE Vogtle ALWR SSAR | 93.6 | SURF.ELEV. 205.355

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
57	148.36						
58	147.36						
59	146.36						
60	145.36	Pale yellow CLAY (CL), slightly sandy	12	58.5-60	1-1-2	3	
61	144.36						
62	143.36						
63	142.36						
64	141.36						
65	140.36		13	63.5-65	2-1-3	4	
66	139.36						
67	138.36						
68	137.36						
69	136.36	Pale yellow sandy CLAY, soft (CL)					
70	135.36		14	68.5-70	WOH/	WHO/1	
71	134.36				WOH/ 1		
72	133.36						
73	132.36	Brown SAND, fine- to medium-grained with pale yellow silt (SM)					
74	131.36						
75	130.36		15	73.5-75	WOH/		
76	129.36				WOH/ 1	WOH/ 1	
77	128.36						
78	127.36						
79	126.36						
80	125.36	Pale olive SILT (ML)	16	78.5-80	2-4-6	10	
81	124.36						
82	123.36						
83	122.36						
84	121.36	Pale yellow SILT, micaceous (ML)					
85	120.36		17	83.5-85	2-3-4	7	Black minerals
86							
87	118.36						
88	117.36						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1012
Sheet 4 of 4

SITE Vogtle ALWR SSAR — TOTAL DEPTH 93.6 — SURF.ELEV. 205.355

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
89	116.36	Grayish green MARL, very stiff					
90	115.36		18	88.5-90	18-25-50	75	
91	114.36						
92	113.36						
93	112.36						
94	111.36						
		Boring Terminated at 93.6'					
95	110.36	Well OW-1012 installed in this borehole.	19	93.5-95	50/1"	50/1"	
96	109.36						
97	108.36						
98	107.36						
99	106.36						
100	105.36						
101	104.36						
102	103.36						
103	102.36						
104	101.36						
105	100.36						
106	99.36						
107	98.36						
108	97.36						
109	96.36						
110	95.36						
111	94.36						
112	93.36						
113	92.36						
114	91.36						
115	90.36						
116	89.36						
117	88.36						
118							
119	86.36						
120	85.36						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1013
Sheet 1 of 4

SITE: Vogtle ALWR SSAR | HOLE DEPTH: 103.5 | SURF.ELEV.: 216.869
LOCATION: Burke County, Georgia | COORDINATES N: 1140805.4 | E: 621715.032
ANGLE: NA | BEARING: NA | CONTRACTOR: S&ME | DRILL NO.: CME 55
DRILLING METHOD: 4 1/4" Hollow stem auger | NO. SAMPLES: 20 | NO. U.D. SAMPLES: NA
WATER TABLE DEPTH: 49' | ELEV.: 167.239' | TIME AFTER COMP.: NA | DATE TAKEN: 6/9/2005
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 6/9/2005
DRILLER: Ted Miller | RECORDER: S. Bearce | APPROVED: NA | DRILLING COMP. DATE: 6/10/2005

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
0	216.87						
1	215.87						
2	214.87						
3	213.87						
4	212.87	Orange brown clayey SAND (SC)					
5	211.87		1	3.5-5	8-8-9	17	
6	210.87						
7	209.87						
8	208.87						
9	207.87						
10	206.87		2	8.5-10	5-10-9	19	
11	205.87						
12	204.87						
13	203.87						
14	202.87	Burgundy or hematitic clayey SAND (SC)					
15	201.87		3	13.5-15	2-2-3	5	
16	200.87						
17	199.87						
18	198.87						
19	197.87	Mottled orange, brown, and light gray sandy CLAY (CL)					
20	196.87		4	18.5-20	3-4-5	9	
21	195.87						
22	194.87						
23	193.87						
24	192.87	Burgundy hematite coated fine-grained to coarse-grained SAND (SW)					

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1013
Sheet 2 of 4

SITE Vogtle ALWR SSAR — TOTAL DEPTH 103.5 — SURF.ELEV. 216.869

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
25	191.87	Fine- to coarse-grsained SAND (SW) with minor amounts of clay, moist	5	23.5-25	4-5-6	11	
26	190.87						
27	189.87	Yellow brown fine SAND (SP) minor clay, moist					
28	188.87						
29	187.87						
30	186.87		6	28.5-30	2-3-5	8	
31	185.87						
32	184.87						
33	183.87						
34	182.87						
35	181.87		7	33.5-35	3-6-10	16	
36	180.87						
37	179.87						
38	178.87						
39	177.87						
40	176.87		8	38.5-40	3-6-9	15	
41	175.87						
42	174.87						
43	173.87						
44	172.87						
45	171.87	Same as above, wet	9	43.5-45	2-2-5	7	
46	170.87						
47	169.87						
48	168.87						
49	167.87						6/9/2005 ▼
50	166.87	Same as above - saturated	10	48.5-50	1-3-5	8	49 from ground surface
51	165.87						
52	164.87						
53	163.87	Yellow brown, wet, SAND (SC) clay content higher					
54	162.24						
55	161.87		11	53.5-55	3-2-5	7	
56	160.87						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1013
Sheet 3 of 4

SITE Vogtle ALWR SSAR TOTAL DEPTH 103.5 SURF.ELEV. 216.869

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
57	159.87						
58	158.87						
59	157.87						
60	156.87	No recovery	12	58.5-60	2-2-2	4	
61	155.87						
62	154.87						
63	153.87						
64	152.87	Same as above with clay blobs, saturated					
65	151.87		13	63.5-65	1-3-5	8	
66	150.87						
67	149.87						
68	148.87						
69	147.87						
70	146.87		14	68.5-70	2-3-4	7	
71	145.87						
72	144.87						
73	143.87						
74	142.87						
75	141.87		15	73.5-75	2-4-6	10	
76	140.87						
77	139.87						
78	138.87						
79	137.87						
80	136.87	Tan fine- to coarse-grained SAND (SW) with medium to coarse-grained black organic material	16	78.5-80	5-10-10	20	
81	135.87						
82	134.87						
83	133.87						
84	132.87						
85	131.87	Tan fine- to medium-grained SAND (SP-SM) with tan or gray clay "tubes" or bioturbation	17	83.5-85	3-2-4	6	
86	130.24						
87	129.87						
88	128.87						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1013
Sheet 4 of 4

SITE Vogtle ALWR SSAR — TOTAL DEPTH 103.5 — SURF.ELEV. 216.869

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
89	127.87	Light olive tan calcareous silty fine-grained SAND (SP - SM)					
90	126.87		18	88.5-90	6-7-9	16	
91	125.87						
92	124.87						
93	123.87						
94	122.87	light olive tan calcareous CLAY (CL), wet but not saturated					
95	121.87		19	93.5-95	4-19-15	24	
96	120.87						
97	119.87						
98	118.87						
99	117.87						
100	116.87	Greenish gray MARL	20	98.5-100	13-28-50/3	28/ 50/3"	
101	115.87						
102	114.87						
103	113.87						
104	112.87	Boring terminated at 103.5' Well OW-1013 installed in this borehole.					
105	111.87						
106	110.87						
107	109.87						
108	108.87						
109	107.87						
110	106.87						
111	105.87						
112	104.87						
113	103.87						
114	102.87						
115	101.87						
116	100.87						
117	99.87						
118							
119	97.87						
120	96.87						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1014
Sheet 1 of 7

SITE: Vogtle ALWR SSAR | HOLE DEPTH: 197.4 | SURF.ELEV.: 220.867
LOCATION: Burke County, Georgia | COORDINATES N: 1140565.502 | E: 623070.234
ANGLE: NA | BEARING: NA | CONTRACTOR: Prosonic | DRILL NO.: SR-083
DRILLING METHOD: Sonic | NO. SAMPLES: continuous | NO. U.D. SAMPLES: NA
WATER TABLE DEPTH: NA | ELEV.: NA | TIME AFTER COMP.: NA | DATE TAKEN: NA
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 6/11/2005
DRILLER: Michael | RECORDER: S Bearce | APPROVED: NA | DRILLING COMP. DATE: 6/11/2005

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	220.87								
1	219.87	This borehole was not sampled until 97'.							
2	218.87	OW-1014 is a well pair with OW-1015. See boring log OW-1015 fro description of the upper sediemnts.							
3	217.87								
4	216.87								
5	215.87								
6	214.87								
7	213.87								
8	212.87								
9	211.87								
10	210.87								
11	209.87								
12	208.87								
13	207.87								
14	206.87								
15	205.87								
16	204.87								
17	203.87								
18	202.87								
19	201.87								
20	200.87								
21	199.87								
22	198.87								
23	197.87								
24	196.87								

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1014

Sheet 2 of 7

SITE Vogtle ALWR SSAR TOTAL DEPTH 197.4 SURF.ELEV. 220.867

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
		See page 1							
25	195.87								
26	194.87								
27	193.87								
28	192.87								
29	191.87								
30	190.87								
31	189.87								
32	188.87								
33	187.87								
34	186.87								
35	185.87								
36	184.87								
37	183.87								
38	182.87								
39	181.87								
40	180.87								
41	179.87								
42	178.87								
43	177.87								
44	176.87								
45	175.87								
46	174.87								
47	173.87								
48	172.87								
49	171.87								
50	170.87								
51	169.87								
52	168.87								
53	167.87								
54									
55	165.87								
56	164.87								

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1014

Sheet 3 of 7

SITE Vogtle ALWR SSAR TOTAL DEPTH 197.4 SURF.ELEV. 220.867

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
57	163.87	See Page 1					
58	162.87						
59	161.87						
60	160.87						
61	159.87						
62	158.87						
63	157.87						
64	156.87						
65	155.87						
66	154.87						
67	153.87						
68	152.87						
69	151.87						
70	150.87						
71	149.87						
72	148.87						
73	147.87						
74	146.87						
75	145.87						
76	144.87						
77	143.87						
78	142.87						
79	141.87						
80	140.87						
81	139.87						
82	138.87						
83	137.87						
84	136.87						
85	135.87						
86							
87	133.87						
88	132.87						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1014
Sheet 4 of 7

SITE Vogtle ALWR SSAR TOTAL DEPTH 197.4 SURF.ELEV. 220.867

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
89	131.87	See page 1					
90	130.87						
91	129.87						
92	128.87						
93	127.87						
94	126.87						
95	125.87						
96	124.87						
97	123.87	Sampling begins at 97'					
98	122.87	Red orange silty clayey SAND					
99	121.87						
100	120.87	White-tan fine- to medium-grained SAND	1	98.5-100	NA	NA	
101	119.87						
102	118.87	Brownish-yellow silty CLAY with shell fragments					
103	117.87						
104	116.87	Light greenish-brown carbonaceous stiff CLAY with Limestone pieces					
105	115.87		2	103.5-105	NA	NA	
106	114.87						
107	113.87						
108	112.87						
109	111.87	Moderately stiff greenish-grey carbonaceous clay with shell hash					
110	110.87		3	108.5-110	NA	NA	fizz
111	109.87						
112	108.87						
113	107.87						
114	106.87	Greenish grey stiff calcareous CLAY with small shell fragments					
115	105.87		4	113.5-115	NA	NA	
116	104.87						
117	103.87						
118							
119	101.87						
120	100.87		5	118.5-120	NA	NA	

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1014
Sheet 5 of 7

SITE: Vogtle ALWR SSAR | TOTAL DEPTH: 197.4 | SURF.ELEV.: 220.867

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
121	99.87						
122	98.87						
123	97.87						
124	96.87	Greenish grey stiff calcareous CLAY with small shell fragments					
125	95.87		6	123.5-125	NA	NA	
126	94.87						
127	93.87						
128	92.87						
129	91.87						
130	90.87		7	128.5-130	NA	NA	
131	89.87						
132	88.87						
133	87.87						
134	86.87						
135	85.87	Same as above with coarse shell fragments and limestone chunks	8	133.5-135	NA	NA	
136	84.87						
137	83.87						
138	82.87						
139	81.87						
140	80.87		9	138.5-140	NA	NA	
141	79.87						
142	78.87						
143	77.87						
144	76.87						
145	75.87		10	143.5-145	NA	NA	
146	74.87						
147	73.87						
148	72.87						
149	71.87						
150	70.24		11	148.5-150	NA	NA	
151	69.87						
152	68.87						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1014
Sheet 6 of 7

SITE: Vogtle ALWR SSAR | TOTAL DEPTH: 197.4 | SURF.ELEV.: 220.867

Depth FT	Elev. FT.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To FT.	Blows	N Bbpf	Comments
153	67.87						
154	66.87						
155	65.87		12	153.5-155	NA	NA	
156	64.87	Greenish grey stiff calcareous CLAY with small shell fragments					
157	63.87						
158	62.87						
159	61.87						
160	60.87		13	158.5-160	NA	NA	
161	59.87						
162	58.87						
163	57.87						
164	56.87						
165	55.87		14	163.5-165	NA	NA	
166	54.87						
167	53.87						
168	52.87						
169	51.87	Light green slightly clayey SAND, turns light grey with brief (~1 hour) exposure to air, with bioturbation					
170	50.87	saturated	15	168.5-170	NA	NA	
171	49.87						
172	48.87						
173	47.87						
174	46.87		16	173.5-175	NA	NA	
175	45.87						
176	44.87	Bottom of carbonate clay or confining layer					
177	43.87	Dark grey silty SAND, (SM - SP), high organic content, saturated					
178	42.87						
179	41.87						
180	40.87		17	178.5-180	NA	NA	
181	39.87	Light grey, fine quartz SAND (SP), saturated					
182							
183	37.87						
184	36.87						

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1014
Sheet 7 of 7

SITE: Vogtle ALWR SSAR | TOTAL DEPTH: 197.4 | SURF.ELEV.: 220.867

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
185	35.87	Light grey, silty, fine-grained SAND (SM), saturated	18	183.5-185	NA	NA	
186	34.87	Dark grey fine sandy SILT (ML)					
187	33.87						
188	32.87						
189	31.87						
190	30.87	Grey poorly graded SAND with silt (SP-SM)	19	188.5-190	NA	NA	
191	29.87						
192	28.87						
193	27.87						
194	26.87						
195	25.87		20	193.5-195	NA	NA	
196	24.87						
197	23.87		21	195-197.4	NA	NA	
198	22.87	Boring terminated at 197.4'					
199	21.87	Well OW-1014 installed in this borehole.					
200	20.87						
201	19.87						
202	18.87						
203	17.87						
204	16.87						
205	15.87						
206	14.87						
206	14.87						
208	12.87						
209	11.87						
210	10.87						
211	9.87						
212	8.87						
213	7.87						
214							
215	5.87						
216	4.87						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1015
Sheet 1 of 4

SITE	Vogtle ALWR SSAR	HOLE DEPTH	120	SURF.ELEV.	220.427
LOCATION	Burke County, Georgia	COORDINATES N	1140550.576	E	623086.318
ANGLE	NA	BEARING	NA	CONTRACTOR	Greene
DRILL NO.	CME 75				
DRILLING METHOD	4 1/4" HSA	NO. SAMPLES	24	NO. U.D. SAMPLES	NA
WATER TABLE DEPTH	73'	ELEV.		TIME AFTER COMP.	
DATE TAKEN	5/30/2005				
TYPE GROUT	NA	QUANTITY	NA	MIX	NA
DRILLING START DATE	5/30/2005				
DRILLER	Greene , Dulong	RECORDER	S Bearce	APPROVED	NA
DRILLING COMP. DATE	6/3/2005				

Depth Ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To Ft.	Blows	N BPF	Comments
0	220.43						
1	219.43						
2	218.43						
3	217.43						
4	216.43	Brown, fine- to medium -grained SAND (SW) <5% silt					
5	215.43		1	3.5-5	3-9-8	17	
6	214.43						
7	213.43						
8	212.43						
9	211.43	Red-brown, hematitic clayey SAND (SC)					
10	210.43		2	8.5-10	8-10-13	23	
11	209.43						
12	208.43						
13	207.43						
14	206.43	Red and tan mottled fine- to medium-grained SAND (SP), traces of silt (<5%)					
15	205.43		3	13.5-15	9-9-13	22	
16	204.43						
17	203.43						
18	202.43						
19	201.43	Reddish-brown, sandy CLAY (CL) sand laminae are light tan					
20	200.43		4	18.5-20	10-11-14	25	
21	199.43						
22	198.43						
23	197.43						
24	196.43						

Form GS9901 7-26-2004

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1015
Sheet 2 of 4

SITE Vogtle ALWR SSAR — TOTAL DEPTH 120 — SURF.ELEV. 220.427

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
25	195.43	Reddish-brown, sandy CLAY (CL) sand laminae are light tan	5	23.5-25	8-11-14	25	
26	194.43						
27	193.43						
28	192.43						
29	191.43						
30	190.43	Orange-brown fine- to medium-grained SAND (SP) damp	6	28.5-30	6-7-8	15	
31	189.43						
32	188.43						
33	187.43						
34	186.43						
35	185.43		7	33.5-35	7-7-8	15	
36	184.43						
37	183.43						
38	182.43						
39	181.43						
40	180.43		8	38.5-40	6-8-14	22	
41	179.43						
42	178.43						
43	177.43						
44	176.43						
45	175.43		9	43.5-45	10-13-15	28	
46	174.43						
47	173.43						
48	172.43						
49	171.43	Yellowish brown sandy CLAY (CL-CH), moist					
50	170.43		10	48.5-50	6-7-9	16	
51	169.43						
52	168.43						
53	167.43						
54							
55	165.43		11	53.5-55	8-11-11	22	
56	164.43						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1015
Sheet 3 of 4

SITE Vogtle ALWR SSAR — TOTAL DEPTH 120 — SURF.ELEV. 220.427

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
57	163.43						
58	162.43						
59	161.43	Yellowish brown clayey SAND (SC) fine-grained, moist					6/2/2005
60	160.43		12	58.5-60	9-12-14	26	▼ Water Table 59.5
61	159.43						
62	158.43						
63	157.43	Tan fine- to coarse-grained SAND (SP) saturated					
64	156.43						
65	155.43	Yellow brown clayey SAND (SC) saturated	13	63.5-65	1-3-5	8	
66	154.43						
67	153.43						
68	152.43						
69	151.43						
70	150.43		14	68.5-70	5-6-9	15	
71	149.43						
72	148.43						
73	147.43						▼
74	146.43						Water Table during drilling 5/30/2005
75	145.43		15	73.5-75	3-11-13	26	
76	144.43						
77	143.43						
78	142.43						
79	141.43						
80	140.43	Same as above, though orange in appearance	16	78.5-80	3-3-5	8	
81	139.43						
82	138.43						
83	137.43						
84	136.43						
85	135.43	Yellow brown clayey SAND (SC) saturated	17	83.5-85	2-3-3	6	
86							
87	133.43						
88	132.43						

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG
GEOLOGICAL SERVICES

Hole No. OW-1015
Sheet 4 of 4

SITE Vogtle ALWR SSAR — TOTAL DEPTH 120 — SURF.ELEV. 220.427

Depth ft.	Elev. Ft.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To ft.	Blows	N BPF	Comments
89	131.43						
90	130.43	Yellow brown clayey SAND (SC) saturated	18	88.5-90	4-9-6	15	
91	129.43						
92	128.43						
93	127.43	Greyish white, fine- to medium-grained SAND (SP) saturated					
94	126.43						sand flowed up into augers. used water and SuperGel X to attempt to flush.
95	125.43		19	93.5-95	13-26-39	65	
96	124.43						
97	123.43						
98	122.43						
99	121.43						
100	120.43	Very light tan poorly graded SAND with silt (SP-SM)	20	98.5-100	10-13-6	19	
101	119.43						
102	118.43						
103	117.43						
104	116.43	Tan shelly (coarse) fine to medium grained clayey SAND (SC)					
105	115.43		21	103.5-105	8-9-16	25	
106	114.43						
107	113.43						
108	112.43						
109	111.43	Greenish Gray MARL					
110	110.43		22	108.5-110	6-12-33	45	
111	109.43						
112	108.43						Boring Terminated at 120'. Mixed fluid to clean auger and stabilize hole. Bentonite was additive. Approx. the volume of the ID of 125' of 4 1/4" ID auger was allowed to sit overnight. Cleaned hole with fresh water to remove mud. Volume of water used in hole was 200 gallons.
113	107.43						
114	106.43						
115	105.43		23	113.5-115	NA	NA	
116	104.43						
117	103.43						
118							
119	101.43						
120	100.43	Boring terminated at 120'	24	118.5-120	20-30-50/3"	30/ 50/3"	

Form GS9901 7-26-2004

APPENDIX F

ABANDONMENT FORMS

AND

AS BUILT
WELL CONSTRUCTION LOGS

WELL ABANDONMENT DATA

PROJECT: SOUTHERN ALWR ESP PROJECT	**WELL/HOLE NO:** **DEPTH:** **HOLE DIAMETER:**	OW-1001A 100' ~7 5/8"
ABANDONMENT BY: S&ME, Inc.	**DATE ABANDONED:**	6/5/2005
REASON FOR ABANDONMENT: This hole was drilled with incorrect size augers.	**VOLUME USED:**	32 cubic feet
REMARKS: 32 bags of grout were used to abandon this hole.		

PROJECT: SOUTHERN ALWR ESP PROJECT	**WELL/HOLE NO:** **DEPTH:** **HOLE DIAMETER:**	OW-1002A 108.5' ~7 5/8"
ABANDONMENT BY: S&ME, Inc.	**DATE ABANDONED:**	6/5/2005
REASON FOR ABANDONMENT: This hole was drilled with incorrect size augers.	**VOLUME USED:**	35 cubic feet
REMARKS: 35 bags of grout were used to abandon this hole.		

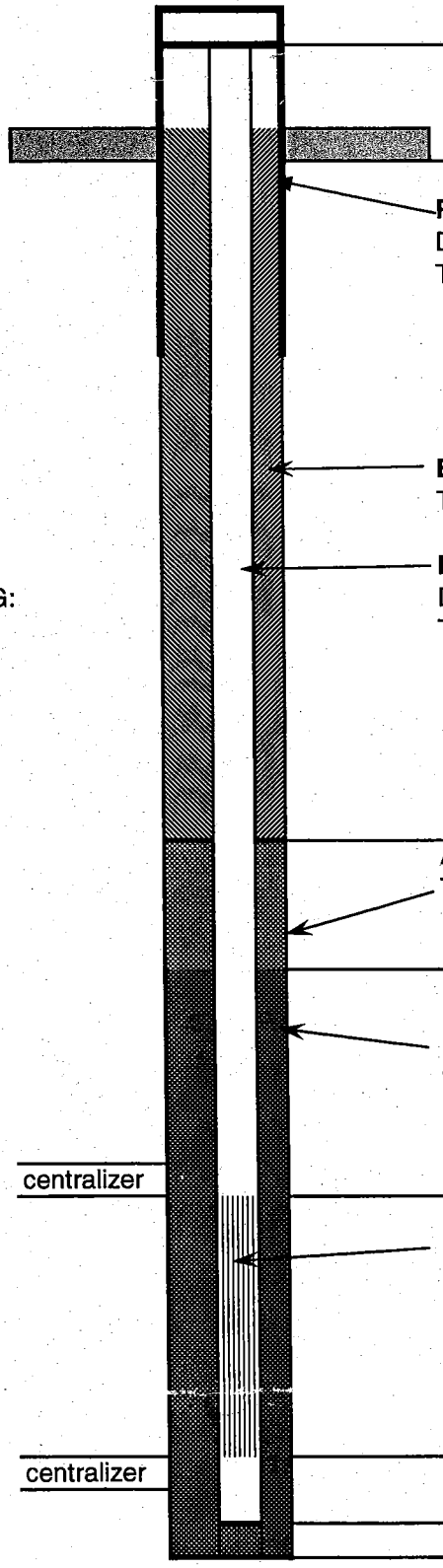
PROJECT: SOUTHERN ALWR ESP PROJECT	**WELL/HOLE NO:** **DEPTH:** **HOLE DIAMETER:**	OW-1003A 90.00' ~7 5/8"
ABANDONMENT BY: S&ME, Inc.	**DATE ABANDONED:**	5/25/2005
REASON FOR ABANDONMENT: This hole was drilled with incorrect size augers.	**VOLUME USED:**	25 cubic feet
REMARKS: 25 bags of grout were used to abandon this hole.		

PROJECT: SOUTHERN ALWR ESP PROJECT	**WELL/HOLE NO:** **DEPTH:** **HOLE DIAMETER:**	OW-1006A 125' ~7 5/8"
ABANDONMENT BY: S&ME, Inc.	**DATE ABANDONED:**	6/5/2005
REASON FOR ABANDONMENT: This hole was drilled with incorrect size augers.	**VOLUME USED:**	40 cubic feet
REMARKS: 40 bags of grout were used to abandon this hole.		

PROJECT: SOUTHERN ALWR ESP PROJECT	**WELL/HOLE NO:** **DEPTH:** **HOLE DIAMETER:**	OW-1005A 75' ~7 5/8"
ABANDONMENT BY: S&ME, Inc.	**DATE ABANDONED:**	6/5/2005
REASON FOR ABANDONMENT: This hole was drilled with incorrect size augers.	**VOLUME USED:**	25 cubic feet
REMARKS: 25 bags of grout were used to abandon this hole.		

SOUTHERN COMPANY GENERATION

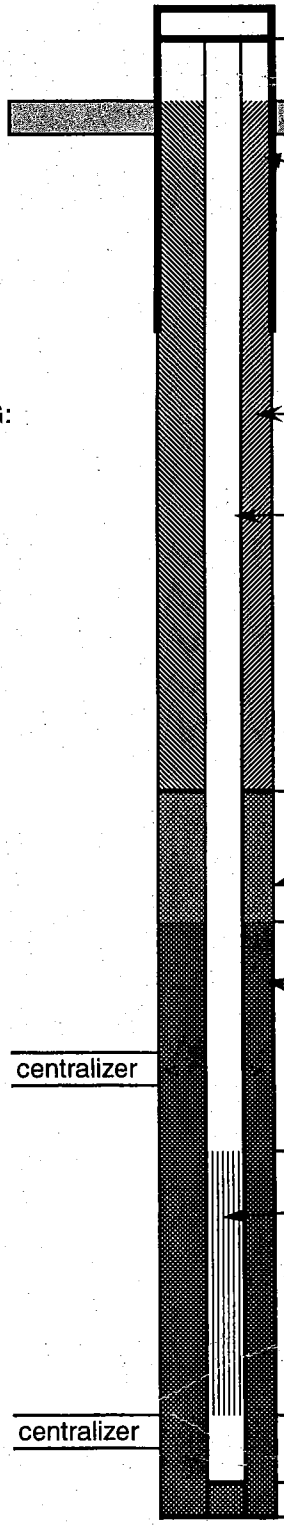
WELL CONSTRUCTION LOG		PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords:	N 1142888.724 E 620148.556	LOCATION	Burke County, Georgia	
DATE INSTALLED	5/29/2005		PREPARED 7/18/2005	OW-1001



	DEPTH (ft.)	ELEVATION (ft.)
Top of 2" PVC Casing		233.494
3' X 3' CONCRETE PAD 4-6" THICK GROUND SURFACE	0	230.854
PROTECTIVE CASING DIA 4" x 4" x 4" TYPE Plated steel		
BACKFILL MATERIAL TYPE Cement/bentonite grout		
RISER CASING DIA 2" TYPE Sch 40 PVC		
TOP OF SEAL	113	117.854
ANNULAR SEAL TYPE Cetco Goldseal 3/8" chips		
TOP Of FILTER PACK	116	114.854
FILTER PACK TYPE: JC50FS by Unimen		
BOTTOM OF RISER/ TOP OF SCREEN	121	109.854
SCREEN DIA 2" TYPE Sch 40 PVC OPENING WIDTH 0.01" spaced 0.125" OPENING TYPE machine slotted		
BOTTOM OF SCREEN	130	100.854
BOTTOM OF CASING	133	97.854
BOTTOM OF HOLE	133	97.854

SOUTHERN COMPANY GENERATION

WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords N 1142887.782 E 620189.341	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/6/2005		PREPARED 7/18/2005	OW-1002

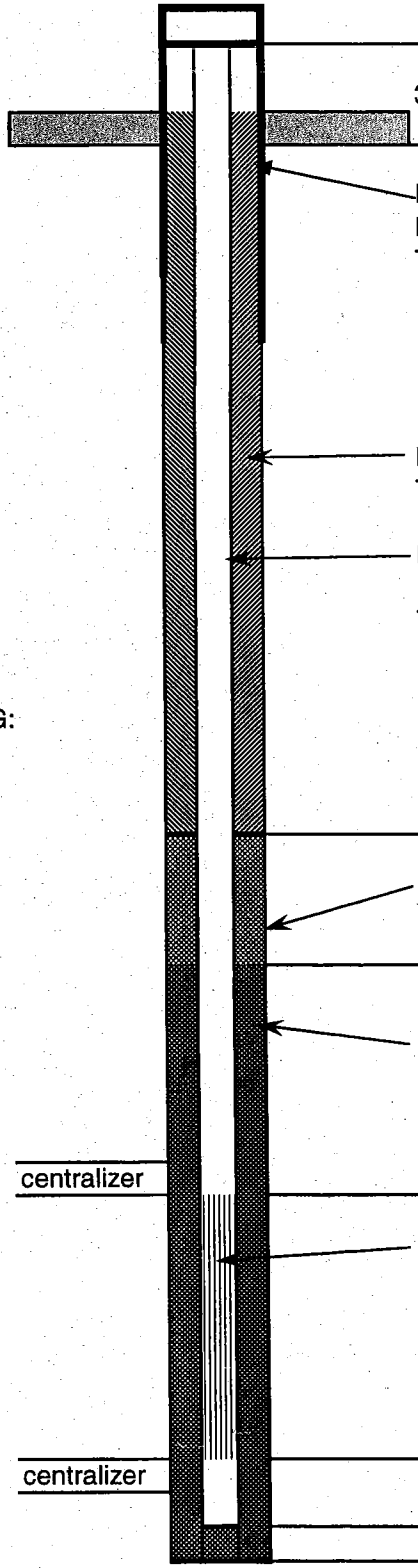


		DEPTH	ELEVATION
	Top of 2" PVC casing		230.502
3' X 3' CONCRETE PAD 4-6" THICK			
	GROUND SURFACE	0	227.442
PROTECTIVE CASING			
DIA	4"x4"x4'		
TYPE	Plated steel		
STANDUP CASING: hinge lid, welded			
BACKFILL MATERIAL			
TYPE	Cement/bentonite grout		
RISER CASING			
DIA	2"		
TYPE	Sch 80 PVC		
	TOP OF SEAL	212	15.442
ANNULAR SEAL			
TYPE	Cetco Goldseal 3/8" chips		
	TOP Of FILTER PACK	216	11.442
FILTER PACK			
TYPE:	1A by DSI		
	BOTTOM OF RISER/ TOP OF SCREEN	219	8.442
SCREEN			
DIA	2"		
TYPE	Sch 80 PVC		
OPENING WIDTH	0.01" spaced 0.125"		
OPENING TYPE	machine slotted		
	BOTTOM OF SCREEN	229	-1.558
	BOTTOM OF CASING	237	-9.558
	BOTTOM OF HOLE	237	-9.558

HOLE DIA: 6"

SOUTHERN COMPANY GENERATION

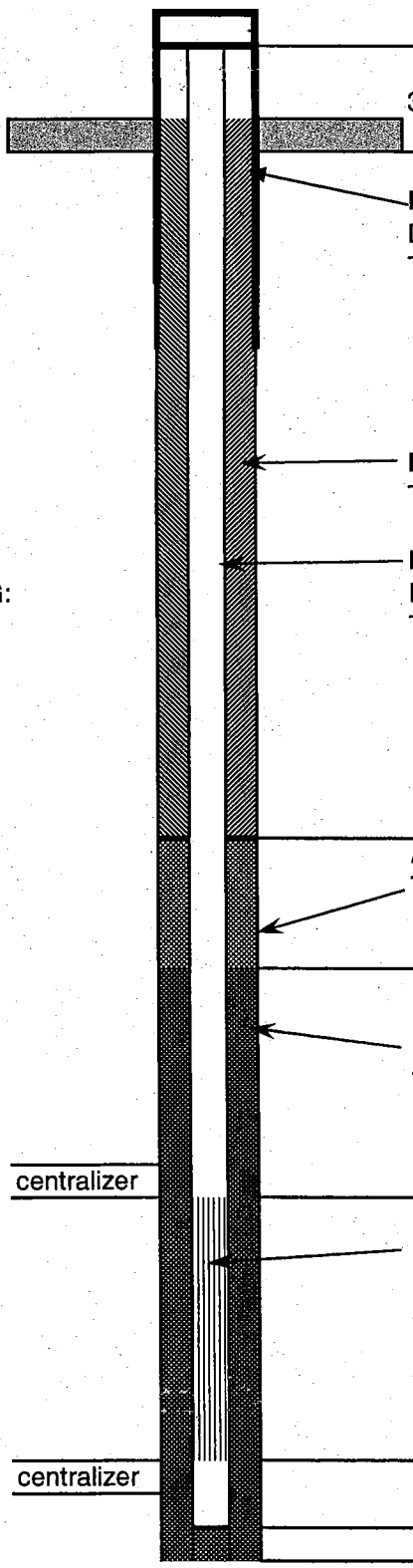
WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords N 1142864.05 E 621884.337	LOCATION	Burke County, Georgia	
DATE INSTALLED 5/26/2005		PREPARED 7/16/2005	OW-1003



	DEPTH (ft.)	ELEVATION (ft.)
Top of 2" PVC casing		226.284
3' X 3' CONCRETE PAD 4-6" THICK GROUND SURFACE	0	223.044
PROTECTIVE CASING DIA 4"x4"x4" TYPE Plated steel		
BACKFILL MATERIAL TYPE Cement/bentonite grout		
RISER CASING DIA 2" TYPE Sch 40 PVC		
TOP OF SEAL	68.5	154.544
ANNULAR SEAL TYPE Cetco Goldseal 3/8" chips		
TOP OF FILTER PACK	72	151.044
FILTER PACK TYPE: 1A by DSI		
BOTTOM OF RISER/ TOP OF SCREEN	75.5	147.544
SCREEN DIA 2" TYPE Sch 40 PVC OPENING WITH 0.01" spaced 0.125" OPENTING TYPE machine slotted		
BOTTOM OF SCREEN	84.8	138.244
BOTTOM OF CASING	90.5	132.544
BOTTOM OF HOLE	90.5	132.544

SOUTHERN COMPANY GENERATION

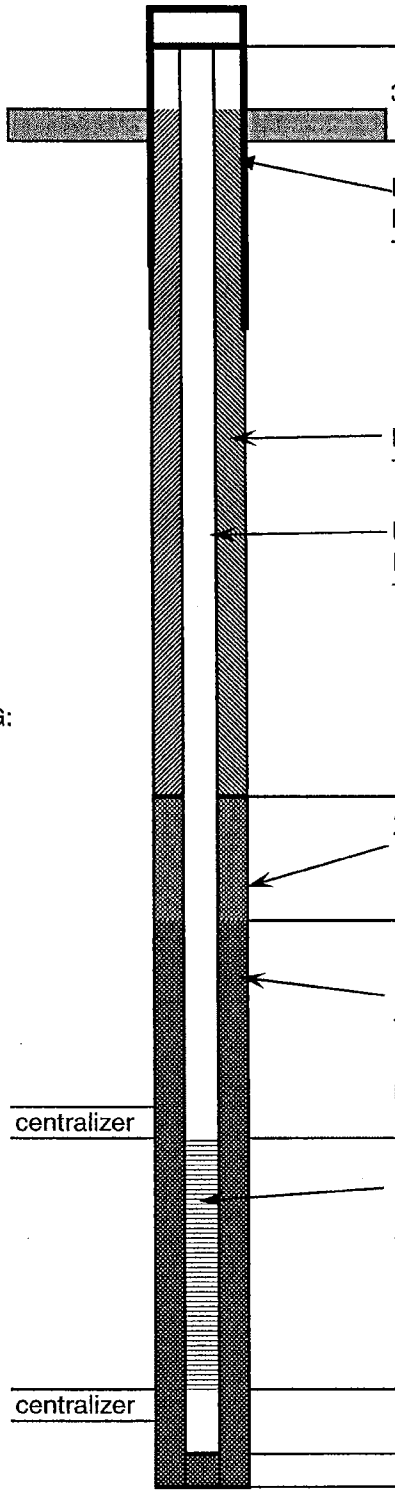
WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords N 1142842.17 E 621880.794	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/10/2005		PREPARED 7/18/2005	OW-1004



		DEPTH (ft.)	ELEVATION (ft.)
Top of 2" PVC CASING			225.671
3' X 3' CONCRETE PAD 4-6" THICK GROUND SURFACE		0	222.92
PROTECTIVE CASING			
DIA	4"X4"X4'		
TYPE	Plated steel		
BACKFILL MATERIAL			
TYPE	Cement/bentonite grout		
RISER CASING			
DIA	2"		
TYPE	Sch 80 PVC		
TOP OF SEAL		147	75.92
ANNULAR SEAL			
TYPE	Cetco Goldseal 3/8" chips		
TOP OF FILTER PACK		150	72.92
FILTER PACK			
TYPE:	1A by DSI		
BOTTOM OF RISER/ TOP OF SCREEN		153	69.92
SCREEN			
DIA	2"		
TYPE	Sch 80 PVC		
OPENING WIDTH	0.01" spaced 0.125"		
OPENING TYPE	Machine slotted		
BOTTOM OF SCREEN		163	59.92
BOTTOM OF CASING		169	53.92
BOTTOM OF HOLE		187	35.92

SOUTHERN COMPANY GENERATION

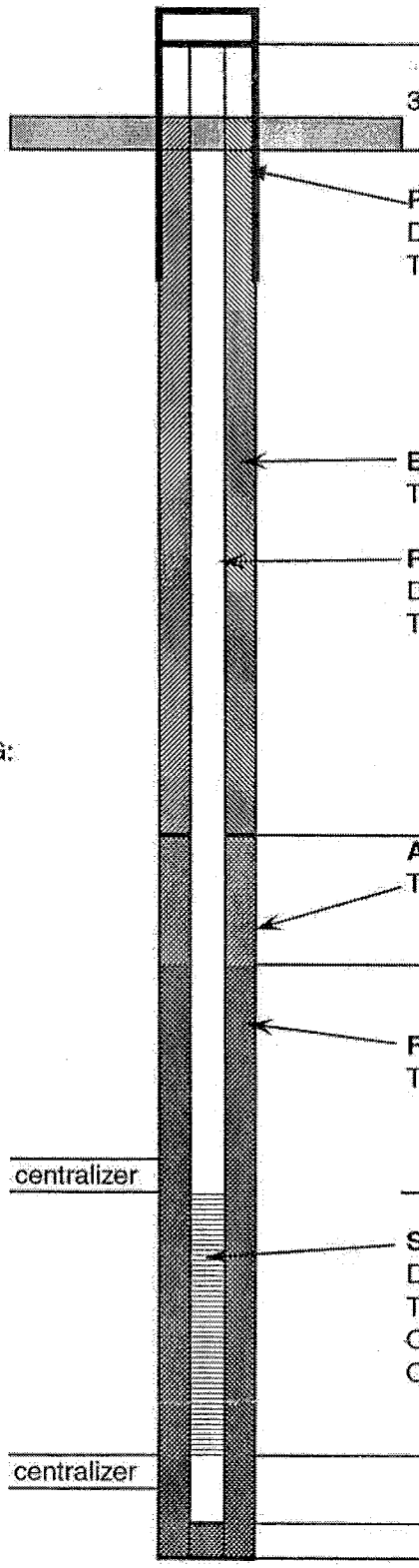
WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords N 1144047.86 E 620408.765	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/7/2005		PREPARED 7/18/2005	OW-1005



	DEPTH (ft.)	ELEVATION (ft.)
TOP OF 2" PVC CASING		267.289
3' X 3' CONCRETE PAD 4-6" THICK GROUND SURFACE	0	264.389
PROTECTIVE CASING DIA 4"X4"X4" TYPE Plated steel		
BACKFILL MATERIAL TYPE Cement/bentonite grout		
RISER CASING DIA 2" TYPE Sch 80 PVC		
STANDUP CASING: hinge lid, welded		
TOP OF SEAL	140	124.389
ANNULAR SEAL TYPE Cetco Goldseal 3/8" chips		
TOP OF FILTER PACK	143	121.389
FILTER PACK TYPE: 1A by DSI		
BOTTOM OF RISER/ centralizer TOP OF SCREEN	149	115.389
SCREEN DIA 2" TYPE Sch 80 PVC OPENING WIDTH 0.01" spaced 0.125" OPENING TYPE Machine slotted		
BOTTOM OF SCREEN	159	105.389
centralizer		
BOTTOM OF CASING	168.5	95.889
BOTTOM OF HOLE	168.5	95.889
HOLE DIA: 9"		

SOUTHERN COMPANY GENERATION

WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords N 1143817.85 E 619179.749	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/14-15/2005	PREPARED	7/18/2005	OW-1006

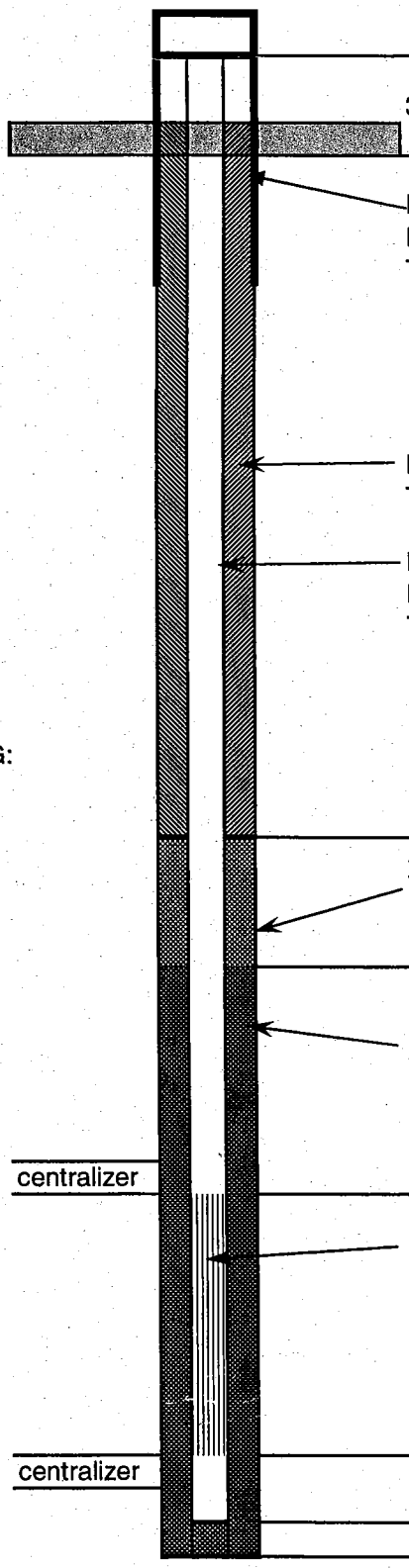


	DEPTH (ft.)	ELEVATION (ft.)
TOP OF 2" PVC CASING		230.601
3' X 3' CONCRETE PAD 4-6" THICK GROUND SURFACE	0	227.121
PROTECTIVE CASING DIA 4"X4"X4" TYPE Plated steel		
BACKFILL MATERIAL TYPE Cement/bentonite grout		
RISER CASING DIA 2" TYPE Sch 80 PVC		
STANDUP CASING: hinge lid, welded		
TOP OF SEAL	110	117.121
ANNULAR SEAL TYPE Cetco Goldseal 3/8" chips		
TOP OF FILTER PACK	113	114.121
FILTER PACK TYPE: 1A by DSI		
BOTTOM OF RISER/ TOP OF SCREEN	116	111.121
SCREEN DIA 2" TYPE Sch 80 PVC OPENING WIDTH 0.01" spaced 0.125" OPENING TYPE Machine slotted		
BOTTOM OF SCREEN	126	101.121
BOTTOM OF CASING	136	91.121
BOTTOM OF HOLE	136	91.121

HOLE DIA: 9"

SOUTHERN COMPANY GENERATION

WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO
Coords N 1142383.76 E 619301.009	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/7/2005		PREPARED 7/18/2005	OW-1007



	DEPTH (Ft.)	ELEVATION (ft.)
TOP OF 2" PVC CASING		219.96
3' X 3' CONCRETE PAD 4-6" THICK GROUND SURFACE	0	216.91
PROTECTIVE CASING DIA 4"X4"X4" TYPE Plated steel		
BACKFILL MATERIAL TYPE Cement/bentonite grout		
RISER CASING DIA 2" TYPE Sch 40 PVC		
TOP OF SEAL	96	120.91
ANNULAR SEAL TYPE Cetco Goldseal 3/8" chips		
TOP OF FILTER PACK	99	117.91
FILTER PACK TYPE: 1A by DSI		
BOTTOM OF RISER/ TOP OF SCREEN	102	114.91
SCREEN DIA 2" TYPE Sch 40 PVC OPENING WIDTH 0.01" spaced 0.125" OPENING TYPE Machine slotted		
BOTTOM OF SCREEN	112	104.91
BOTTOM OF CASING	120	96.91
BOTTOM OF HOLE	120	96.91

STANDUP CASING:
hinge lid, welded

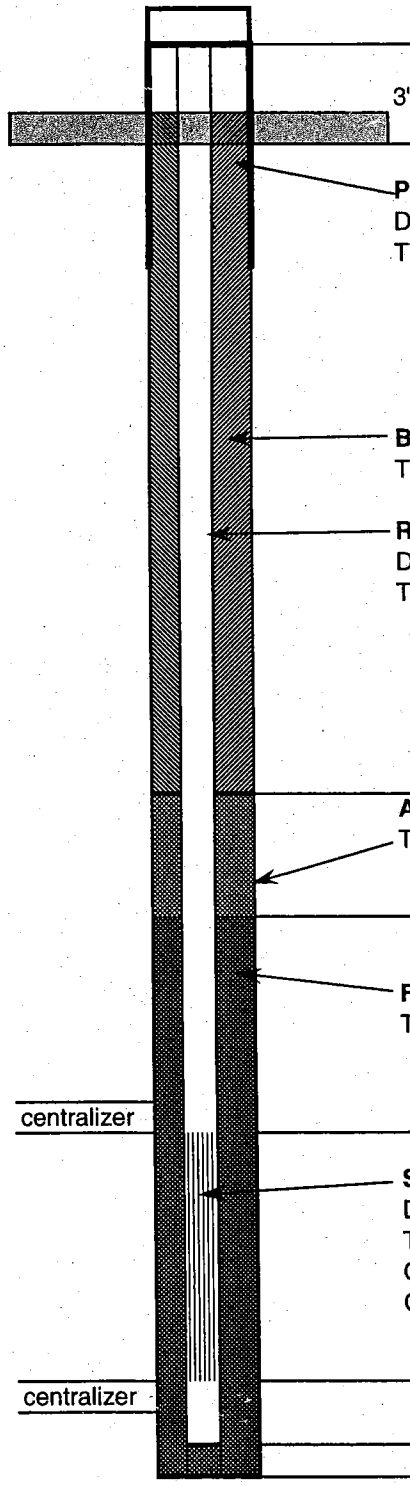
centralizer

centralizer

HOLE DIA: 9"

SOUTHERN COMPANY GENERATION

WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords N 1142347.93 E 619306.686	LOCATION	Burke County, Georgia	
DATE STARTED 6/1/2005		PREPARED 7/18/2005	OW-1008



		DEPTH (ft.)	ELEVATION (ft.)
	TOP OF 2" PVC CASING		219.71
3' X 3' CONCRETE PAD 4-6" THICK	GROUND SURFACE	0	216.65
PROTECTIVE CASING			
DIA	4"X4"X4"		
TYPE	Plated steel		
BACKFILL MATERIAL			
TYPE	Cement/bentonite grout		
RISER CASING			
DIA	2"		
TYPE	Sch 80 PVC		
	TOP OF SEAL	224	-7.35
ANNULAR SEAL			
TYPE	Cetco Goldseal 3/8" chips		
	TOP OF FILTER PACK	226	-9.35
FILTER PACK			
TYPE:	1A by DSI		
	BOTTOM OF RISER/ TOP OF SCREEN	230	-13.35
SCREEN			
DIA	2"		
TYPE	Sch 80 PVC		
OPENING WIDTH	0.01" spaced 0.125"		
OPENING TYPE	Machine slotted		
	BOTTOM OF SCREEN	240	-23.35
	BOTTOM OF CASING	245	-28.35
	BOTTOM OF HOLE	247	-30.35

STANDUP CASING:
hinge lid, welded

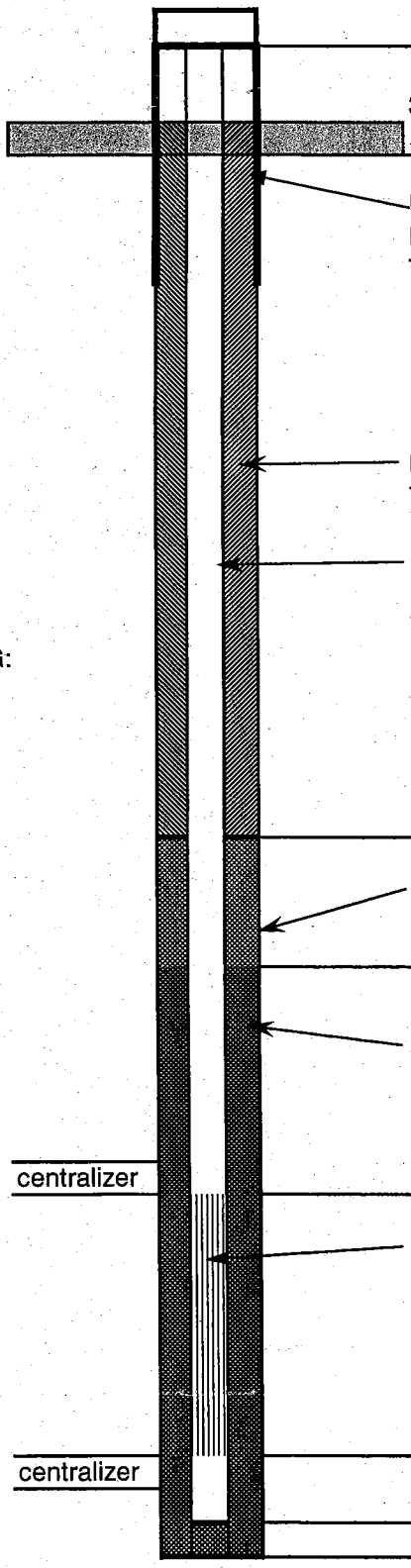
centralizer

centralizer

HOLE DIA: 6"

SOUTHERN COMPANY GENERATION

WELL CONSTRUCTION LOG	PROJECT	Vogtle AL WR SSAR	WELL NO.
Coords N 1141891.64 E 620888.608	LOCATION	Burke County, Georgia	
DATE INSTALLED 5/27/2005		PREPARED 7/18/2005	OW-1009



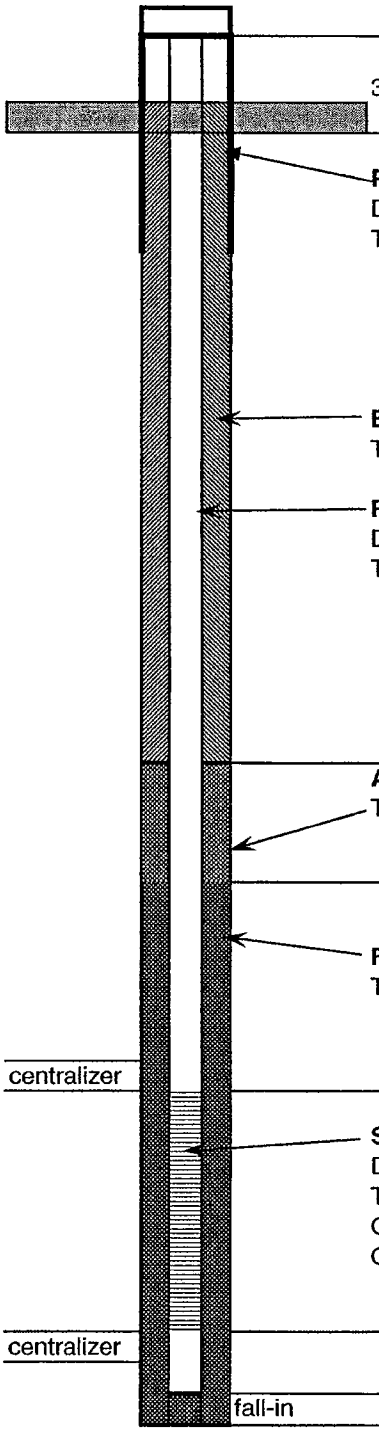
	DEPTH (ft.)	ELEVATION (ft.)
TOP OF 2" PVC CASING		223.647
3' X 3' CONCRETE PAD 4-6" THICK GROUND SURFACE	0	220.887
PROTECTIVE CASING DIA 4"X4"X4" TYPE Plated steel		
BACKFILL MATERIAL TYPE Cement/bentonite grout		
RISER CASING DIA 2" TYPE Sch 40 PVC		
TOP OF SEAL	78	142.887
ANNULAR SEAL TYPE Cetco Goldseal 3/8" chips		
TOP OF FILTER PACK	81	139.887
FILTER PACK TYPE: 1A by DSI		
BOTTOM OF RISER/ TOP OF SCREEN	84	136.887
SCREEN DIA 2" TYPE Sch 40 PVC OPENING WIDTH 0.01" spaced 0.125" OPENING TYPE Machine slotted		
BOTTOM OF SCREEN	94	126.887
BOTTOM OF CASING	98	122.887
BOTTOM OF HOLE	98	122.887

STANDUP CASING:
hinge lid, welded

HOLE DIA: 9"

SOUTHERN COMPANY GENERATION

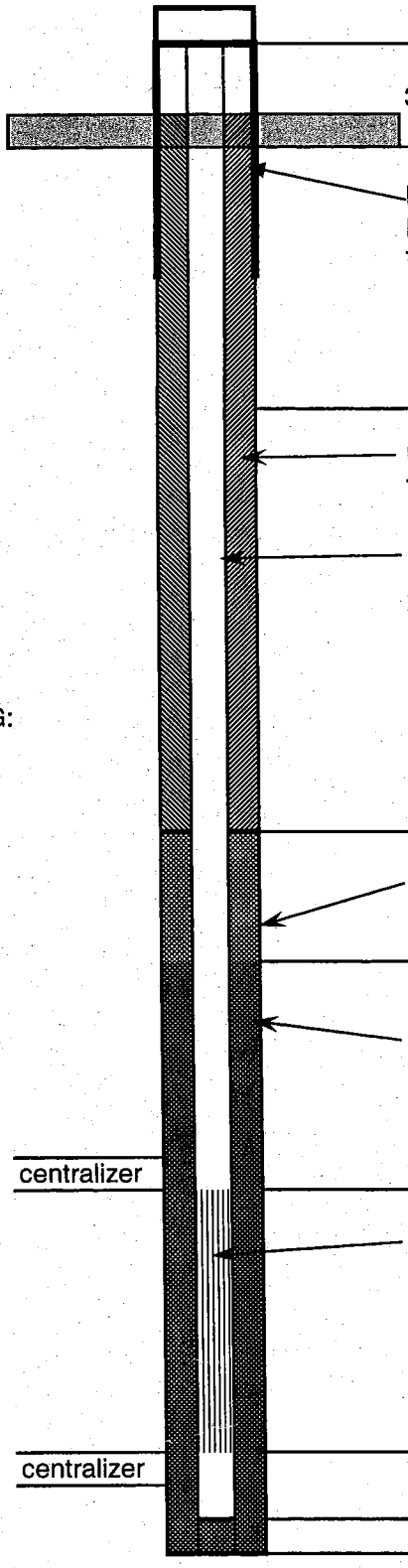
WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords N 1140808.98 E 620051.708	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/1/2005		PREPARED 7/18/2005	OW-1010



		DEPTH (ft.)	ELEVATION (ft.)
	TOP OF 2" PVC CASING		219.905
3' X 3' CONCRETE PAD 4-6" THICK	GROUND SURFACE	0	216.895
PROTECTIVE CASING DIA 4"X4"X4" TYPE Plated steel			
BACKFILL MATERIAL TYPE Cement/bentonite grout			
RISER CASING DIA 2" TYPE Sch 40 PVC			
STANDUP CASING: hinge lid, welded			
	TOP OF SEAL	67.0	149.895
ANNULAR SEAL TYPE Cetco Goldseal 3/8" chips			
	TOP OF FILTER PACK	70.1	146.795
FILTER PACK TYPE: 1A by DSI			
centralizer	BOTTOM OF RISER/ TOP OF SCREEN	73	143.895
SCREEN DIA 2" TYPE Sch 40 PVC OPENING WIDTH 0.01" spaced 0.125" OPENING TYPE Machine slotted			
	BOTTOM OF SCREEN	83	133.895
centralizer			
	BOTTOM OF CASING	92	124.895
fall-in	BOTTOM OF HOLE	94	122.895
HOLE DIA: 9"			

SOUTHERN COMPANY GENERATION

WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords N 1139956.24 E 621033.045	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/13/2005		PREPARED 7/18/2005	OW-1011



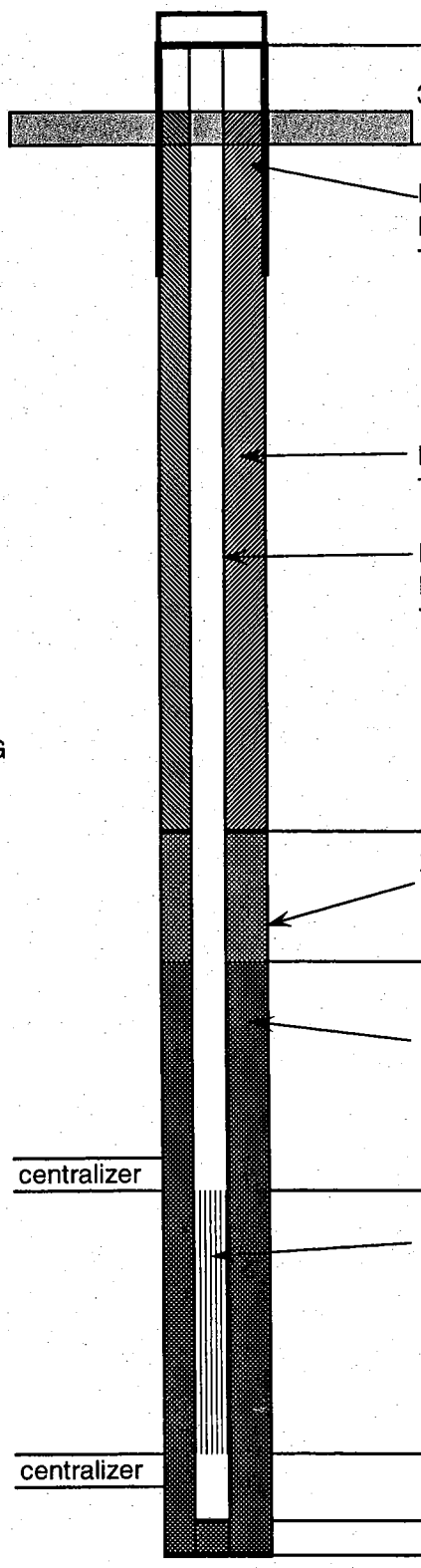
	DEPTH (ft.)	ELEVATION (ft.)
TOP OF 2" PVC CASING		209.043
3' X 3' CONCRETE PAD 4-6" THICK GROUND SURFACE	0	205.785
PROTECTIVE CASING DIA 4"X4"X4" TYPE Plated steel		
BACKFILL MATERIAL TYPE Cement/bentonite grout		
RISER CASING DIA 2" TYPE Sch 80 PVC		
TOP OF SEAL	193	12.785
ANNULAR SEAL TYPE Cetco Puregold med chips		
TOP Of FILTER PACK	197	8.785
FILTER PACK TYPE: Foster Dixiana		
BOTTOM OF RISER/ TOP OF SCREEN	200	5.785
SCREEN DIA 2" TYPE Sch 80 PVC OPENING WIDTH 0.01" spaced 0.125" OPENING TYPE Machine slotted		
BOTTOM OF SCREEN	210	-4.215
BOTTOM OF CASING	218	-12.215
BOTTOM OF HOLE	218	-12.215

STANDUP CASING:
hinge lid, welded

HOLE DIA: 6"

SOUTHERN COMPANY GENERATION

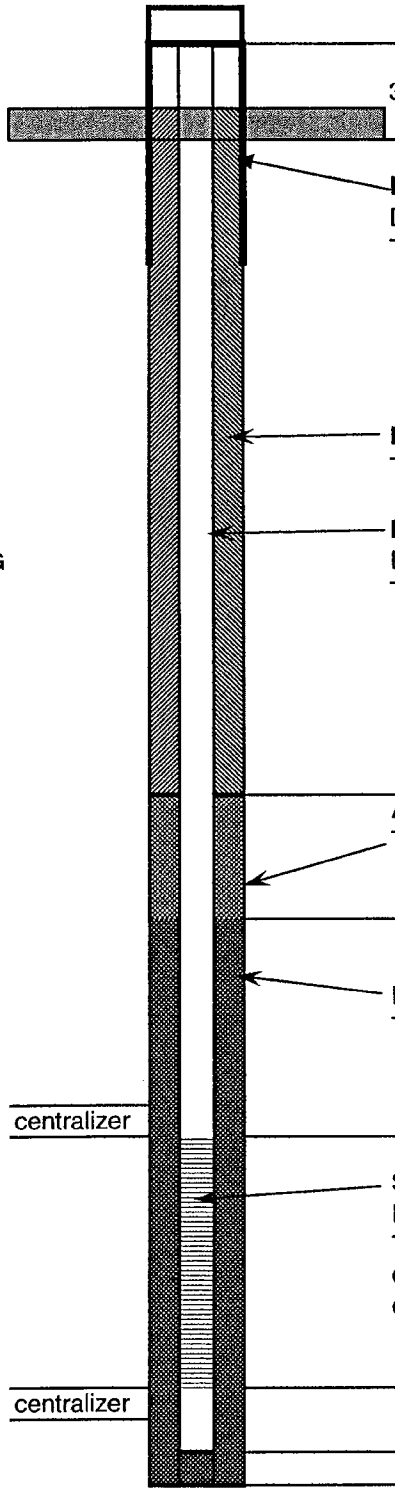
WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords N 1139969.49 E 621045.924	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/1/2005		PREPARED 7/18/2005	OW-1012



	DEPTH (ft.)	ELEVATION (ft.)
TOP OF 2" PVC CASING		208.684
3' x 3' CONCRETE PAD 4 - 6" THICK GROUND SURFACE	0	205.355
PROTECTIVE CASING DIA 4"X4"X4" TYPE Plated steel		
BACKFILL MATERIAL TYPE Cement/bentonite grout		
RISER CASING DIA 2" TYPE Sch 40 PVC		
TOP OF SEAL	67.0	138.355
ANNULAR SEAL TYPE Cetco Goldseal 3/8" chips		
TOP OF FILTER PACK	71	134.355
FILTER PACK TYPE: 1A BY DSI		
BOTTOM OF RISER/ TOP OF SCREEN	74.0	131.355
SCREEN DIA TYPE 2" TYPE Sch 40 PVC OPENING WIDTH 0.01" spaced 0.125" OPENING TYPE Machine slotted		
BOTTOM OF SCREEN	83	122.355
BOTTOM OF CASING	94	111.355
BOTTOM OF HOLE	94	111.355

SOUTHERN COMPANY GENERATION

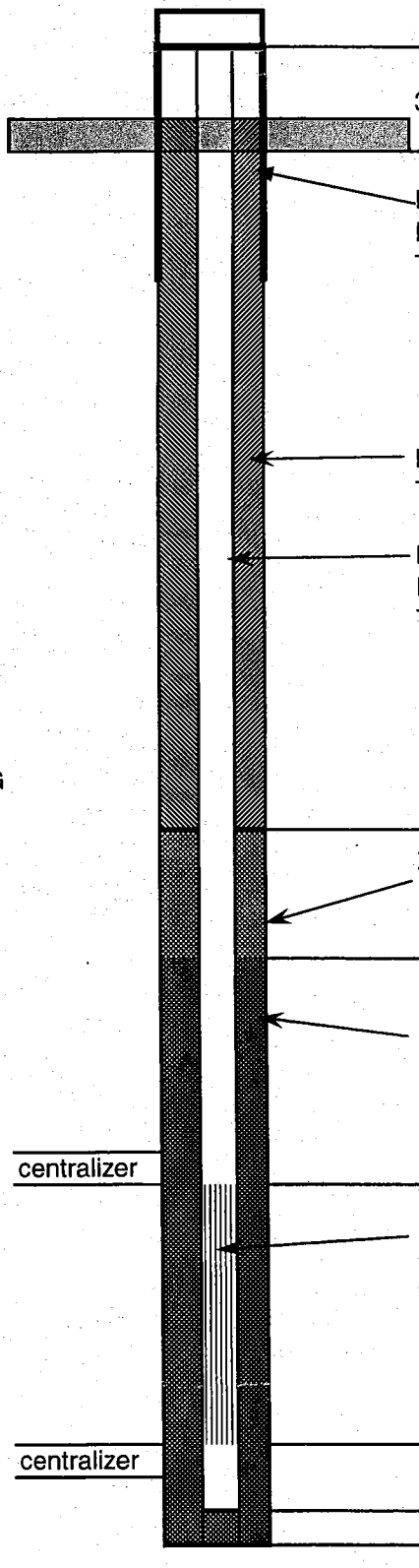
WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords N 1140805.4 E 621715.032	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/10/2005		PREPARED 7/18/2005	OW-1013



		DEPTH (ft.)	ELEVATION (ft.)
TOP OF 2" PVC CASING			219.809
3' x 3' CONCRETE PAD 4 - 6" THICK			
GROUND SURFACE		0	216.869
PROTECTIVE CASING			
DIA	4"X4"X4"		
TYPE	Plated steel		
BACKFILL MATERIAL			
TYPE	Cement/bentonite grout		
RISER CASING			
DIA	2"		
TYPE	Sch 40		
TOP OF SEAL		78	138.369
ANNULAR SEAL			
TYPE	Cetco Goldseal 3/8" chips		
TOP OF FILTER PACK		81.0	135.869
FILTER PACK			
TYPE:	1A by DSI		
BOTTOM OF RISER/ TOP OF SCREEN		84	132.369
SCREEN			
DIA	2"		
TYPE	Sch 40 PVC		
OPENING WIDTH	0.01" spaced 0.125"		
OPENING TYPE	Machine slotted		
BOTTOM OF SCREEN		94	122.869
BOTTOM OF CASING		104	112.869
BOTTOM OF HOLE		104	112.869

SOUTHERN COMPANY GENERATION

WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO.
Coords: N 1140565.502 E 623070.234	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/11/2005		PREPARED 7/18/2005	OW-1014

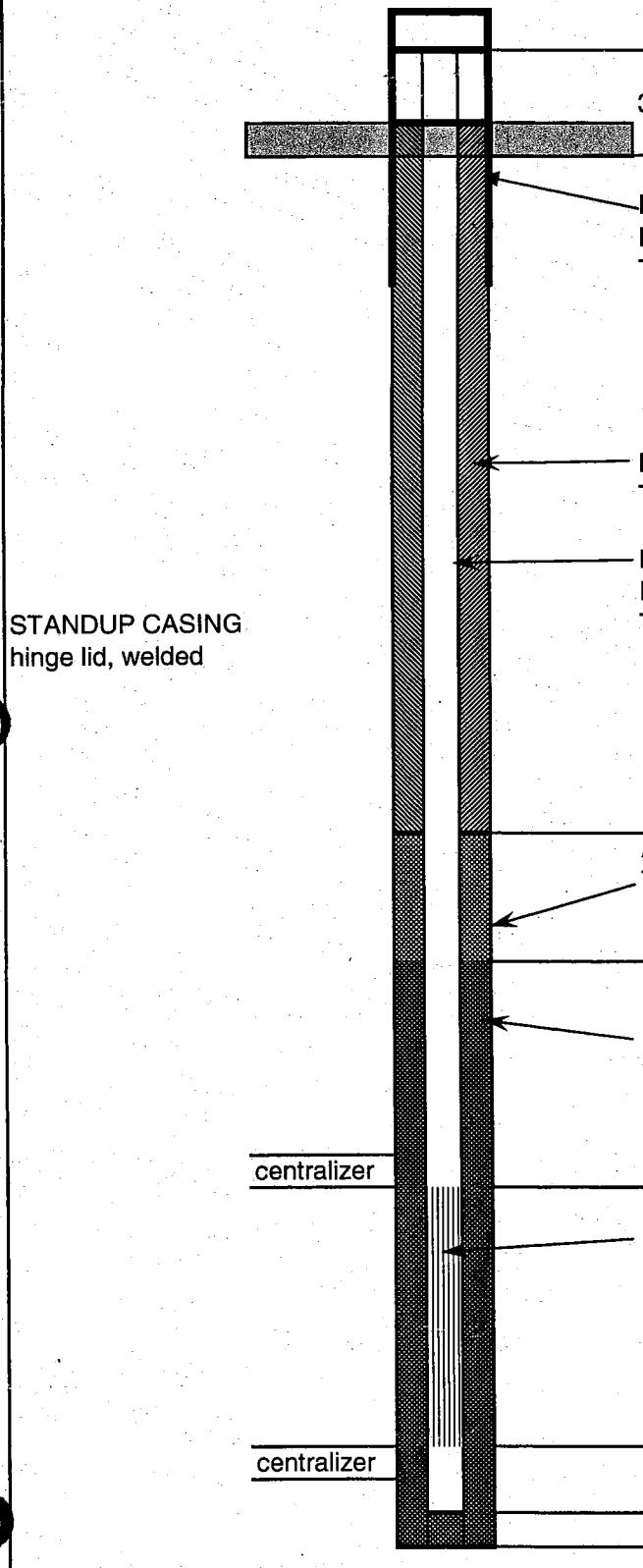


		DEPTH (ft.)	ELEVATION (ft.)
TOP OF 2" PVC CASING			223.856
3' x 3' CONCRETE PAD 4 - 6" THICK GROUND SURFACE		0	220.867
PROTECTIVE CASING			
DIA	4"X4"X4"		
TYPE	Plated steel		
BACKFILL MATERIAL			
TYPE	Cement/bentonite grout		
RISER CASING			
DIA	2"		
TYPE	Sch 80 PVC		
STANDUP CASING hinge lid, welded			
TOP OF SEAL		176	44.867
ANNULAR SEAL			
TYPE	Cetco Puregold 3/8" chips		
TOP Of FILTER PACK		179	41.867
FILTER PACK			
TYPE:	Foster Dixiana Filter Sand		
centralizer BOTTOM OF RISER/ TOP OF SCREEN		182	38.867
SCREEN			
DIA	2"		
TYPE	Sch 80 PVC		
OPENING WIDTH	0.01" spaced 0.125"		
OPENING TYPE	Machine slotted		
BOTTOM OF SCREEN		192	28.867
centralizer BOTTOM OF CASING		197	23.867
BOTTOM OF HOLE		197	23.867

HOLE DIA: 6"

SOUTHERN COMPANY GENERATION

WELL CONSTRUCTION LOG	PROJECT	Vogtle ALWR SSAR	WELL NO
Coords N 1140550.57 E 623086.318	LOCATION	Burke County, Georgia	
DATE INSTALLED 6/3/2005		PREPARED 7/18/2005	OW-1015



	DEPTH (ft.)	ELEVATION (ft.)
TOP OF 2" PVC CASING		223.157
3' x 3' CONCRETE PAD 4 - 6" THICK GROUND SURFACE	0	220.427
PROTECTIVE CASING DIA 4"X4"X4" TYPE Plated steel		
BACKFILL MATERIAL TYPE Cement/bentonite grout		
RISER CASING DIA 2" TYPE Sch 40 PVC		
TOP OF SEAL	86	134.427
ANNULAR SEAL TYPE Cetco Goldseal 3/8" chips		
TOP OF FILTER PACK	89.6	130.827
FILTER PACK TYPE: 1A BY DSI		
BOTTOM OF RISER/ TOP OF SCREEN	93	127.427
SCREEN DIA 2" TYPE Sch 40 PVC OPENING WIDTH 0.01" spaced 0.125" OPENING TYPE Machine slotted		
BOTTOM OF SCREEN	103	117.427
BOTTOM OF CASING	120	100.427
BOTTOM OF HOLE	120	100.427

APPENDIX G

WELL DEVELOPMENT FORMS

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voatle SSAR	Burke	27
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other _____	☒ [redacted]

3. Time spent developing well _____ min.

4. Depth of well (from top of well casing) 190.55' ft.

5. Inside diameter of well 1¾" or 1½" in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well _____ gal.

8. Volume of water added (if any) NONE gal.

9. Source of water added None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 124.85' ft.	ft.
Date	b. 6-2-05	
Time	c.	
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY, RICK FREDRICK } SAME

17. Additional comments on development:
WELL COULD NOT BE PURGED DUE TO DIAMETER SIZE OF PVC CASING. PUMP WOULD NOT FIT INTO CASING.

Facility Address or Owner/Responsible Party Address

Name: _____

Firm: _____

Street: _____

City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: _____

Firm: _____

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle SSAR	Burke	142
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? [X] Yes [ ] No

2. Well development method:

surged with bailer and bailed	[ ] 41
surged with bailer and pumped	[ ] 61
surged with block and bailed	[ ] 42
surged with block and pumped	[ ] 62
surged with block, bailed, and pumped	[ ] 70
compressed air	[X] 20
bailed only	[ ] 10
pumped only	51
pumped slowly	[ ] 50
other	[X] [redacted]

3. Time spent developing well: 15 min.

4. Depth of well (from top of well casing): 97.0' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 4.4 gal.

7. Volume of water removed from well: Approx 13.0 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? [ ] Yes [X] No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	70.10' ft.	Dry ft.
Date b.	6-15-05	6-15-05
Time c.	9:30 AM	9:45 AM
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear [X] 10 Turbid [ ] 15	Clear [X] 20 Turbid [ ] 25
(Describe)	WATER WAS CLEAR DURING DEVELOPMENT † WHEN DRY AFTER APPROX 1 WELL VOLUME REMOVED.	(Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Tim Kelly
Ricil Fredrick
S & MG

17. Additional comments on development:
Well developed using air compressor
≈ 50 psi of pressure at bottom of well

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voatle SSAR	Burke	179
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☒ 20
bailed only	☐ 10
pumped only	51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 20 min.

4. Depth of well (from top of well casing): 133.62' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 1.0 gal.

7. Volume of water removed from well: Approx 3.0 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 127.17 ft.	Dry ft.
Date	b. 6-15-05	6-15-05
Time	c. 11:40 Am	11:55 Am
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 / Turbid ☒ 15	Clear ☒ 20 / Turbid ☐ 25
(Describe)	Slightly turbid	WATER BECAME MORE CLEAR AFTER 3 WELL VOLUMES REMOVED

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Tim Kelly
Rick Fredrick
S & ME

17. Additional comments on development:
WELL DEVELOPED USING AIR COMPRESSOR
≈ 50 PSI OF PRESSURE AT BOTTOM OF WELL

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street: ~~2.4A 146~~

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voglle SSAR	Burke	179
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well ____ min.

4. Depth of well (from top of well casing) 133.62' ft.

5. Inside diameter of well 1¾" or 1½" in.

6. Volume of water in filter pack and well casing ____ gal.

7. Volume of water removed from well ____ gal.

8. Volume of water added (if any) NONE gal.

9. Source of water added None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 127.26' ft.	ft.
Date	b. 6-1-05	
Time	c.	
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY, RICK FREDERICK } S:ME

17. Additional comments on development:
WELL COULD NOT BE PURGED DUE TO DIAMETER SIZE OF PVC CASING. PUMP WOULD NOT FIT INTO CASING.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voatle 55AR	Burke	803A
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 30 min.

4. Depth of well (from top of well casing): 89.20' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 4.7 gal.

7. Volume of water removed from well: 21 gal.

8. Volume of water added (if any): NONE gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	60.23 ft.	Dry ft.
Date b.	5/26/05	5/26/05
Time c.	2:30 pm	3:00 pm
12. Sediment in well bottom	89.20' inches	89.20' inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) TURBID (cloudy)	Clear ☒ 20 Turbid ☐ 25 (Describe) TURBID (cloudy)
14. Total suspended solids	~~mg/l~~	~~mg/l~~
15. COD	~~mg/l~~	~~mg/l~~

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Person's Name and Firm
TIM KELLY - SME
RICK FREDRICK - SME

17. Additional comments on development:
Min 3 Well Volumes Required
Max 4 Well Volumes Removed (Dry) 1st DEVELOPMENT
Noted: Pump Rate ≈2.0 gal/m per min
Allowed well to recharge from 3:00 pm to 4:30 pm Pg 1 of 2

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street: ~~2.4A-148~~

City/State/Zip:

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voafle 55AR	Burke	803 A
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 20 min.

4. Depth of well (from top of well casing): 89.20' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 4.7 gal.

7. Volume of water removed from well: 20 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	60.30' ft.	Dry ft.
Date b.	5/26/05	5/26/05
Time c.	4:30	4:50
12. Sediment in well bottom	89.20' inches	89.20 inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Turbid (cloudy)	Clear ☐ 20 Turbid ☒ 25 (Describe) Turbid (cloudy)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm

17. Additional comments on development:
Min of 3 well Volumes Required
Max of 4 removed (Dry) 2nd DEVELOPMENT
Note! Pump RATE ≈ 2.0 gallon per min.

Pg 2 of 2

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle SSAR	Burke	804
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 20 min.

4. Depth of well (from top of well casing): 95.09' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in [redacted] well casing: 5.3 gal.

7. Volume of water removed from well: 16.0 gal.

8. Volume of water added (if any): NONE gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	62.31' ft.	63.10' ft.
Date b.	6-1-05	6-1-05
Time c.	4:45 pm	5:05 pm
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	VERY CLOUDY	WATER CLEARED AFTER APPROX 1 WELL VOLUME REMOVED.
14. Total suspended solids	~~—~~ mg/l	~~—~~ mg/l
15. COD	~~—~~ mg/l	~~—~~ mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Person's Name and Firm
TIM KELLY, RICK FREDRICK } SAME

17. Additional comments on development:
3 WELL VOLUMES REMOVED
PUMP RATE ≈ 1.0 gal per min.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle SSAR	Burke	805A
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 55 min.

4. Depth of well (from top of well casing): 127.0' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in [redacted] well casing: 8.0 gal.

7. Volume of water removed from well: 24.0 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	77.69' ft.	78.20' ft.
Date b.	6-1-05	6-1-05
Time c.	6:20 pm	7:15 pm
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☑ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	GRAY COLOR VERY TURBID	CLEAR AFTER 1 WELL VOLUME REMOVED.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY, RICK FREDRICK } S&ME

17. Additional comments on development:
3 WELL VOLUMES REMOVED
PUMP RATE ≈ 1.0 gal per min.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of knowledge.

Signature:

Print Name:

Firm:

SCS Field Form

MONITORING WELL DEVELOPMENT

Gallons per foot 0.163

Facility/Project Name	County	Well Name
Voglle SSAR	Burke	809
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ ■

3. Time spent developing well: 20 min.

4. Depth of well (from top of well casing): 93.00 ft.

5. Inside diameter of well: 2" in.

6. Volume of water in filterpack and well casing: 3.5 gal.

7. Volume of water removed from well: 20 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: ~~None~~

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	71.50' ft.	71.66' ft.
Date b.	5/26/05	5/26/05
Time c.	1:45 pm	2:00 pm
12. Sediment in well bottom	94.35' (SEE INSP. REPORT) − 93.00' = 1.35'	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) SLIGHTLY TURBID	Clear ☒ 20 Turbid ☐ 25 (Describe) CLEAR

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids: ~~mg/l~~ mg/l

15. COD: ~~mg/l~~ mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY, RICK FREDRICK } SME, INC

17. Additional comments on development:
MIN. 3 well Volumes Required
MAX. 6 well Volumes Removed
NOTED: Pump Rate = 2.0 gallon per min.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voatle SSAR	Burke	850 A
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 55 min.

4. Depth of well (from top of well casing): 193.21' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter packed~~ well casing: 11.1 gal.

7. Volume of water removed from well: 33.4 gal.

8. Volume of water added (if any): NONE gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	124.90 ft.	125.26' ft.
Date b.	6-2-05	6-2-05
Time c.	3:15 pm	4:10 p.m
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☑ 15 (Describe): SLIGHTLY TURBID	Clear ☑ 20 Turbid ☐ 25 (Describe): CLEAR AFTER 2 gallons REMOVED.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY
RICK FREDRICK
SME

17. Additional comments on development:
3 WELL VOLUMES REMOVED
PUMP RATE ≈ 1.0 gal Per Min.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle SSAR	Burke	852
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 90 min.

4. Depth of well (from top of well casing): 221.63' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in [redacted] well casing: 21.7 gal.

7. Volume of water removed from well: 65 gal.

8. Volume of water added (if any): NONE gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	88.62' ft.	96.13' ft.
Date b.	6-2-05	6-2-05
Time c.	10:10 AM	11:40 AM
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☑ 10 Turbid ☐ 15 (Describe)	Clear ☑ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Tim Kelly
Rick Fredrick
} SME

17. Additional comments on development:
3 well volumes removed
Pump rate ≈ 1.0 gal per min.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle SSAR	Burke	853
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 55 min.

4. Depth of well (from top of well casing): 224.0' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in [redacted] well casing: 16.2 gal.

7. Volume of water removed from well: 55 gal.

8. Volume of water added (if any): NONE gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	124.50' ft.	124.62' ft.
Date b.	6-1-05	6-1-05
Time c.	12:30 pm	1:25 pm
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe): SLIGHTLY TURBID	Clear ☒ 20 Turbid ☐ 25 (Describe): CLEAR AFTER ≈2 gallons Removed

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY, RICK FREDRICK } SSME

17. Additional comments on development:

3 WELL VOLUMES REMOVED
PUMP RATE 1.0 gal per min.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle SSAR	Burke	854
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No (SEE COMMENTS)

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒

3. Time spent developing well: 10 min.

4. Depth of well (from top of well casing): 221.31' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~first packed~~ well casing: 14.4 gal.

7. Volume of water removed from well: 10.0 gal.

8. Volume of water added (if any): NONE gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	132.99' ft.	140.0' ft.
Date b.	6-1-05	6-1-05
Time c.	3:00 pm	3:10 pm
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☑ 15 (Describe) SLIGHTLY TURBID	Clear ☑ 20 Turbid ☐ 25 (Describe) AFTER 10 gals REMOVED.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY
RICK FREDRICK
SCME

17. Additional comments on development:
THE PUMP WOULD NOT GO DEEPER THAN APPRX 140.0' SOME TYPE OF OBSTRUCTION IN WELL.
APPRX 10.0 gallons REMOVED AND THEN WENT DRY.
PUMP RATE 1.0 gal per min.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voatle 55AR	Burke	B55
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other _____	☒ [redacted]

3. Time spent developing well: 65 min.

4. Depth of well (from top of well casing): 225.50' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter packed~~ well casing: 17.2 gal.

7. Volume of water removed from well: 51.6 gal.

8. Volume of water added (if any): NONE gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	120.04' ft.	120.64' ft.
Date b.	6-2-05	6-2-05
Time c.	8:45 AM	9:50 AM
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☑ 10 Turbid ☐ 15 (Describe)	Clear ☑ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY, RICK FREDRICK } SME

17. Additional comments on development:
3 WELL VOLUMES REMOVED
PUMP RATE ≈ 1.0 gal per min.

Facility Address or Owner/Responsible Party Address

Name: _____

Firm: _____

Street: _____

City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature: _____

Print Name: _____

Firm: _____

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voatle SSAR	Burke	B56
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 25 min.

4. Depth of well (from top of well casing): 120.45' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in [redacted] well casing: 7.4 gal.

7. Volume of water removed from well: 22.2 gal.

8. Volume of water added (if any): NONE gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	75.11' ft.	DRY ft.
Date b.	6-1-05	6-1-05
Time c.	5:35 pm	6:00 pm
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☑ 10 Turbid ☐ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY } SAME
RICK FREDERICK }

17. Additional comments on development:
APPROX 2 WELL VOLUMES REMOVED BEFORE GOING DRY
PUMP RATE ≈ 1.0 gal per min.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle SSAR	Burke	1001
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 15 min.

4. Depth of well (from top of well casing): 137.15' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 4.44 gal.

7. Volume of water removed from well: 8.0 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 109.93 ft.	Dry ft.
Date	b. 6-6-05	
Time	c. 2:30pm	
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Gray in Color	Clear ☐ 20 Turbid ☐ 25 (Describe)
14. Total suspended solids	/ mg/l	/ mg/l
15. COD	/ mg/l	/ mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Person's Name and Firm
Tim Kelly
Rick Fredrick
S&ME

17. Additional comments on development:
WELL WHEN DRY AFTER ONLY 8 gallons REMOVED.
WATER LEVEL @ 125.49' @ 5:10pm (6-6-05)
WATER LEVEL @ 125.39' @ 5:50pm (6-6-05)
WATER LEVEL @ 124.62 (6-7-05

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street: 2AA 150

City/State/Zip:

I hereby certify that the above information is true and correct to the best of r knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voglle 55AR	Burke	1002
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☒ 20
bailed only	☐ 10
pumped only	51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 25 min.

4. Depth of well (from top of well casing): 245.60 ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack~~ and well casing: 22.3 gal.

7. Volume of water removed from well: Apprx. 70 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	109.05' ft.	112.68' ft.
Date b.	6-14-05	6-14-05
Time c.	3:35	4:00
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 / Turbid ☒ 15	Clear ☒ 20 / Turbid ☐ 25
(Describe)	TURBID UNTIL 1 WELL VOLUME REMOVED	WATER CLEAR WHEN DEVELOPMENT COMPLETED.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Tim. Kelly
Rick Fredrick
SAME

17. Additional comments on development:
WELL WAS DEVELOPED USING AIR COMPRESSOR
≈ 50 PSI OF PRESSURE AT BOTTOM OF WELL

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle 5SAR	Burke	1003
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other _____	☒ ■

3. Time spent developing well: 65 min.

4. Depth of well (from top of well casing): 97.0' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in filter pack and well casing: 4.2 gal.

7. Volume of water removed from well: 13.0 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	71.06' ft.	DRY ft.
Date b.	6-3-05	6-3-05
Time c.	8:35 Am	9:40 Am
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe): SLIGHTLY TURBID	Clear ☒ 20 Turbid ☐ 25 (Describe): CLEAR AFTER 2ND WELL VOLUME REMOVED

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY
RICK FREDRICK
SIME

17. Additional comments on development:
3 WELL VOLUMES REMOVED. THE WELL WENT DRY AFTER EACH VOLUME REMOVED ALLOWED THE WELL TO RECHARGE & PURGE 3 TIMES.
PUMP RATE ≈ 1.0 gallon PER MIN.

Facility Address or Owner/Responsible Party Address

Name: _____

Firm: _____

Street: _____

City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: _____

Firm: _____

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voaffe 55AR	Burke	1004
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☒ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 15 min.

4. Depth of well (from top of well casing): 175.0' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter packed~~ well casing: 9.3 gal.

7. Volume of water removed from well: APPROX 20 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 117.80 ft.	Dry ft.
Date	b. 6-14-05	
Time	c. 1:00	1:15
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☒ 10 / Turbid ☐ 15	Clear ☒ 20 / Turbid ☐ 25
(Describe)	WATER WAS CLEAR AT TIME OF DEVELOP.	WATER WAS CLEAR WHEN WELL WENT DRY.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	~~mg/l~~	~~mg/l~~
15. COD	~~mg/l~~	~~mg/l~~

16. Well developed by: Person's Name and Firm
TIM KELLY / RICK FREDRICK / SAME

17. Additional comments on development:
WELL WAS DEVELOPED USING AIR COMPRESSOR
≈ 50 PSI OF PRESSURE USED AT BOTTOM OF WELL

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voafle 55AR	Burke	1005
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☒ 20
bailed only	☐ 10
pumped only	51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 20 min.

4. Depth of well (from top of well casing): 173.05' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 7.0 gal.

7. Volume of water removed from well: 25 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	~~173.05~~ 130.07' ft.	171.33' ft.
Date b.	6-15-05	6-15-05
Time c.	8:55 AM	9:15 AM
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) SLIGHTLY TURBID	Clear ☒ 20 Turbid ☐ 25 (Describe) CLEAR AFTER 3 WELL VOLUMES REMOVED.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY
RICK FREDRICK
SIME

17. Additional comments on development:
WELL DEVELOPED USING AIR COMPRESSOR
≈ 50 PSI OF PRESSURE AT BOTTOM OF WELL

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voatle SSAR	Burke	1006
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☒ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 25 min.

4. Depth of well (from top of well casing): 139.00' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 9.7 gal.

7. Volume of water removed from well: 30.0 gal.

8. Volume of water added (if any): gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	79.81' ft.	85.14 ft.
Date b.	6-16-05	6-16-05
Time c.	7:50 AM	8:15 AM
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe): SLIGHTLY TURBID CLEARED AFTER 1 VOLUME REMOVED	Clear ☒ 20 Turbid ☐ 25 (Describe): CLEAR AT COMPLETION

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM. KELLY
RICK FREDRICK } SSAR

17. Additional comments on development:
WELL DEVELOPED USING AIR COMPRESSOR
@ 50PSI OF PRESSURE AT BOTTOM OF WELL

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle SSAR	Burke	1007
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☒ 20
bailed only	☐ 10
pumped only	51
pumped slowly	☐ 50
other	☒ [redacted]

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	68.09 ft.	68.47' ft.
Date b.	6-14-05	6-14-05
Time c.	5:40	5:55
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)

SLIGHTLY TURBID. WATER CLEAR AFTER DEVELOPMENT COMPLETED.

3. Time spent developing well: 15 min.

4. Depth of well (from top of well casing): 115.0' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 7.6 gal.

7. Volume of water removed from well: APPROX 30 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY
RICK FREDRICK
SSMC

17. Additional comments on development:
WELL DEVELOPED USING AIR COMPRESSOR
≈ 50 PSI OF PRESSURE AT BOTTOM OF WELL

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voalle 55AR	Burke	100B
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☒ 20
bailed only	☐ 10
pumped only	51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 25 min.

4. Depth of well (from top of well casing): 252.8 ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 26.0 gal.

7. Volume of water removed from well: APPRX 80 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	93.52 ft.	94.85 ft.
Date b.	6-14-05	6-14-05
Time c.	5:00 pm	5:25 pm
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)

SLIGHTLY TURBID CLEAR WATER WHEN DEVELOPMENT COMPLETED.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY
RICK FREDRICK
SME

17. Additional comments on development:
WELL DEVELOPED USING AIR COMPRESSOR
≈ 50 PSI OF PRESSURE AT BOTTOM OF WELL

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voatle SSAR	Burke	1009
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒

3. Time spent developing well	48	min.
4. Depth of well (from top of well casing)	97.0'	ft.
5. Inside diameter of well	2"	in.
6. Volume of water in ~~filter pack and~~ well casing	5.9	gal.
7. Volume of water removed from well	35.4	gal.
8. Volume of water added (if any)	None	gal.
9. Source of water added	None	

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	60.78' ft.	69.93' ft.
Date b.	6-3-05	6-3-05
Time c.	7:35 AM	8:23 AM
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	TAN IN COLOR	CLEAR AFTER 6 WELL VOLUMES REMOVED.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY
RICK FREDRICK
SAIC

17. Additional comments on development:
6 - Well Volumes Removed
Pump Rate ≈ 1.0 gallon per min.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voaffe 55AR	Burke	1010
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other _____	☒ [redacted]

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	55.41' ft.	90.52' ft.
Date b.	6-3-05	6-3-05
Time c.	11:30 AM	12:40 pm
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☑ 15 (Describe) VERY TURBID	Clear ☐ 20 Turbid ☑ 25 (Describe) SLIGHTLY TURBID AFTER 6 WELL VOLUMES REMOVED

3. Time spent developing well: 80 min.

4. Depth of well (from top of well casing): 92.0' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~[redacted]~~ well casing: 6.0 gal.

7. Volume of water removed from well: 36.0 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No (If yes, attach results)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Tim Kelly
Rick Fredrick
} S&ME

17. Additional comments on development:

6 WELL VOLUMES REMOVED — THE WELL WAS STILL SLIGHTLY TURBID AFTER 6-WELL VOLUMES REMOVED.

PUMP RATE ≈ 1.0 gallon per min.

Facility Address or Owner/Responsible Party Address

Name: _____

Firm: _____

Street: _____

City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature: _____

Print Name: _____

Firm: _____

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voaffe 55AR	Burke	1011
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☒ 20
bailed only	☐ 10
pumped only	51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 25 min.

4. Depth of well (from top of well casing): 225.0' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 22.7 gal.

7. Volume of water removed from well: Approx 70 gal.

8. Volume of water added (if any): gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	86.12 ft.	90.10' ft.
Date b.	6-14-05	6-14-05
Time c.	2:40 pm	3:05 pm
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)

TURBID UNTIL APPROX 1 WELL VOLUME REMOVED — WATER CLEAR WHEN DEVELOPMENT COMPLETE

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Tim Kelly
Rick Fredrick
S & ME

17. Additional comments on development:
WELL WAS DEVELOPED USING AIR COMPRESSOR
≈ 50 PSI OF PRESSURE USED AT BOTTOM OF WELL

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voatle SSAR	Burke	1012
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 40 min.

4. Depth of well (from top of well casing): 98.0' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 8.5 gal.

7. Volume of water removed from well: 26.0 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	45.85' ft.	52.78' ft.
Date b.	6-3-05	6-3-05
Time c.	9:55 A	10:35 A
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 / Turbid ☒ 15	Clear ☒ 20 / Turbid ☐ 25
(Describe)	VERY TURBID TAN COLOR	CLEAR AFTER 1 WELL VOLUME REMOVED.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY
RICK FREDRICK
S&ME

17. Additional comments on development:

3 WELL VOLUMES REMOVED
PUMP RATE ≈1.0 gallon per min.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle 55AR	Burke	1013
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other _____	☒ [redacted]

3. Time spent developing well: 150 min.

4. Depth of well (from top of well casing): 108.25 ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack~~ and well casing: 8.7 gal.

7. Volume of water removed from well: 28 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	54.86' ft.	69.96' ft.
Date b.	6-15-05	6-15-05
Time c.	7:40 AM	8:30
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) SLIGHTLY TURBID	Clear ☒ 20 Turbid ☐ 25 (Describe) CLEAR AFTER 3 WELL VOLUMES REMOVED.
14. Total suspended solids	~~—~~ mg/l	~~—~~ mg/l
15. COD	~~—~~ mg/l	~~—~~ mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Person's Name and Firm
TIM. KELLY
RICK FREDRICK } S&ME

17. Additional comments on development:
APPROX 3 WELL VOLUMES REMOVED
PUMP RATE AT 1.0 gallon PER MIN.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Voglle 55AR	Burke	1014
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☒ 20
bailed only	☐ 10
pumped only	51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 25 min.

4. Depth of well (from top of well casing): 205' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in ~~filter pack and~~ well casing: 15.0 gal.

7. Volume of water removed from well: APPRX 45 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	113.0' ft.	119.51' ft.
Date b.	6-14-05	6-14-05
Time c.	1:50 pm	2:15 pm
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) WATER CLEAR AFTER 10 MIN. OF DEVELOPMENT	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
TIM KELLY } SAME
RICK FREDRICK

17. Additional comments on development:
WELL WAS DEVELOPED USING AIR COMPRESSOR
~ 50 PSI OF PRESSURE USED AT BOTTOM OF WELL

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

MONITORING WELL DEVELOPMENT

Facility/Project Name	County	Well Name
Vogtle SSAR	Burke	1015
Facility License, Permit or Monitoring Number		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method:

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed, and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
other	☒ [redacted]

3. Time spent developing well: 60 min.

4. Depth of well (from top of well casing): 122.40' ft.

5. Inside diameter of well: 2" in.

6. Volume of water in [redacted] well casing: 9.6 gal.

7. Volume of water removed from well: 30.0 gal.

8. Volume of water added (if any): None gal.

9. Source of water added: None

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	63.47' ft.	70.97' ft.
Date b.	6-3-05	6-3-05
Time c.	1:30 pm	2:30 pm
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	VERY MUDDY THICK BROWN IN COLOR	WATER BECAME CLEAR AFTER ≈ 3 WELL VOLUMES REMOVED.

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Tim Kelly
Rick Fredrick
} SIME

17. Additional comments on development:

3 WELL VOLUMES REMOVED

PUMP RATE ≈ 1.0 gal/m PER MIN.

Facility Address or Owner/Responsible Party Address

Name:

Firm:

Street:

City/State/Zip:

I hereby certify that the above information is true and correct to the best of m knowledge.

Signature:

Print Name:

Firm:

APPENDIX H

WELL INSPECTION FORMS

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number LT-1B Well Status active

Inspected by S.C. Beale Date 6/16/05

Company SCS

Well Surface Description:

Stickup (ground surface to top of riser casing): 2.61'

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.55'

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity:

Remarks:

Well Description:

Depth to water (measured from top of riser casing): 66.36'

Well depth (measured from top of riser casing to bottom of well): 93.48'

Evidence of sediment in bottom of well: ✓ Yes ____ No ____ Maybe

Remarks: ~ 0.2' red mud on bottom

Recommended for Development: ____ Yes ✓ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number LT-7A Well Status active

Inspected by S.C. Beard Date 6/16/05

Company SCS

Well Surface Description:

Stickup (ground surface to top of riser casing): 1.74'

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.55

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity:

Remarks: no concrete surround

Well Description:

Depth to water (measured from top of riser casing): 64.80'

Well depth (measured from top of riser casing to bottom of well): 89.02

Evidence of sediment in bottom of well: ____ Yes ✓ No ____ Maybe

Remarks:

Recommended for Development: ____ Yes ✓ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number LT-12 Well Status active

Inspected by S.C. Barker Date 6/16/05

Company SCS

Well Surface Description:

Stickup (ground surface to top of riser casing): 0.18'

Riser casing diameter: 2" ND

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.55

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity:

Remarks: no concrete surround

Well Description:

Depth to water (measured from top of riser casing): 61.44'

Well depth (measured from top of riser casing to bottom of well): 88.35'

Evidence of sediment in bottom of well: ✓ Yes ____ No ____ Maybe

Remarks: little sediment on end of probe after recording water level

Recommended for Development: ____ Yes ✓ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number LT-13 Well Status active

Inspected by SCBeasce/L. Headland Date 6/16/05

Company SCS / Bechtel

Well Surface Description:

Stickup (ground surface to top of riser casing): 2.26 - 0.52

Riser casing diameter: 4" ND sch 40 4"ND sched 40 PVC

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: .55 0.55

Cap: — Yes ✓ No Locked: ✓ Yes — No

Concrete surface seal: ✓ Yes ____ No

Surface seal condition/integrity:

Remarks: difficult positioning because of sleeves level recorder. In small steel building

Well Description:

Depth to water (measured from top of riser casing): 64.60

Well depth (measured from top of riser casing to bottom of well): 90.65

Evidence of sediment in bottom of well: ✓ Yes ____ No ____ Maybe

Remarks: ____

Recommended for Development: ____ Yes ✓ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 27 Well Status inactive

Inspected by John Pugh Date 5-18-05

Company Southern Company Services 12:38 EDT

Well Surface Description:

Stickup (ground surface to top of riser casing): 1.4 ft

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.7 ft

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 126.40 FT

Well depth (measured from top of riser casing to bottom of well): 190.40 ft

Evidence of sediment in bottom of well: ____ Yes ✓ No ____ Maybe

Remarks: NO EVIDENCE OF SEDIMENT OBSERVED

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 29 Well Status Inactive

Inspected by John Pugh / L. Headland Date 5/19/05

Company SCS / Bechtel

Well Surface Description:

Stickup (ground surface to top of riser casing): 1.9' - 0.12' = 1.78'

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.66'

Cap: ✓ Yes ____ No Locked: ____ Yes ✓ No (lock on top of well)

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 211.94'

Well depth (measured from top of riser casing to bottom of well): 99.6'

Evidence of sediment in bottom of well: ____ Yes ✓ No ____ Maybe

Remarks: tip clear.

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 142 Well Status Inactive

Inspected by J. Pugh / L. Haelland Date 5/19/05

Company SCS / Bechtel 11:55 AM

Well Surface Description:

Stickup (ground surface to top of riser casing): 1.94' - 0.58' = 1.36'

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.66'

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No (lock cut)

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: Borehole casing diameter (steel) = 0.33'
well consists of :- protective casing, borehole casing + riser casing.

Well Description:

Depth to water (measured from top of riser casing): 70.5'

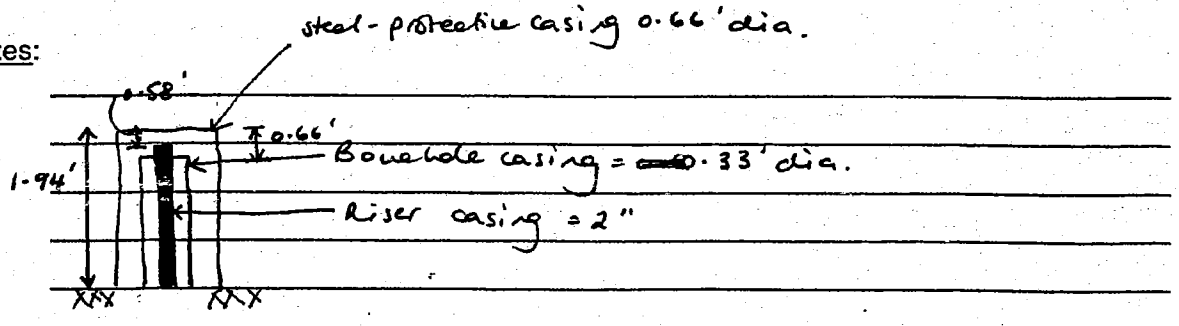
Well depth (measured from top of riser casing to bottom of well): 97.37'

Evidence of sediment in bottom of well: ____ Yes ✓ No ____ Maybe

Remarks: clean tip

Recommended for Development: ✓ Yes ____ No

Notes:



SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 179 Well Status Inactive

Inspected by JOHN PUGH Date 05/18/05 16:44

Company SOUTHERN COMPANY SERVICES

Well Surface Description:

Stickup (ground surface to top of riser casing): 0.25 FT

Riser casing diameter: 2 IN.

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.71 FT

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 127.23 FT

Well depth (measured from top of riser casing to bottom of well): 132.62 FT

Evidence of sediment in bottom of well: ✓ Yes ____ No ____ Maybe

Remarks: PROBE STAINED W/ VERY FINE SILT

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 802A Well Status active

Inspected by SBearce / JHeadland Date 6/16/05

Company SCS / Bechtel

Well Surface Description:

Stickup (ground surface to top of riser casing): 3.27 - 0.49 = 2.78'

Riser casing diameter: 4" ND sch 40 PVC

Steel surface protective casing: ✓ Yes — No

Protective casing diameter: 0.55'

Cap: — Yes Y No Locked: Y Yes — No

Concrete surface seal: — Yes Y No

Surface seal condition/integrity: cover in good shape

Remarks: needs casing cap

Well Description:

Depth to water (measured from top of riser casing): 61.01

Well depth (measured from top of riser casing to bottom of well): 90.50

Evidence of sediment in bottom of well: Y Yes — No — Maybe

Remarks: no sediment on probe

Recommended for Development: _____ Yes _____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 803A Well Status Inactive

Inspected by John Pugh + Laiselkadlool Date 5-19-05

Company Southern Company 9:30 AM EST

Well Surface Description:

Stickup (ground surface to top of riser casing): 1.53' - 0.42' = 1.11'

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.83'

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No (construction)

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A four surveying posts

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 60.25'

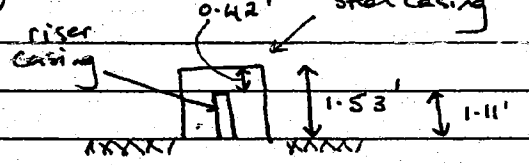
Well depth (measured from top of riser casing to bottom of well): 89.51'

Evidence of sediment in bottom of well: ____ Yes ____ No ✓ Maybe

Remarks: Soft @ bottom, silt on tip of dipmeter

Recommended for Development: ✓ Yes ____ No

Notes: Current riser casing / protective casing measurements (5-19-05 - 5/18/05)



SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 804 Well Status Inactive

Inspected by John Pugh / L. Headlcol Date 5/19/05

Company SCS 9.55 AM

Well Surface Description:

Stickup (ground surface to top of riser casing): 2.11' - 0.39' = 1.72'

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.83'

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A For concrete posts surrounding well.

Remarks:

Well Description:

Depth to water (measured from top of riser casing): 62.13'

Well depth (measured from top of riser casing to bottom of well): 95.2'

Evidence of sediment in bottom of well: ✓ Yes ____ No ____ Maybe

Remarks: silt on tip of dipmeter

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 805A Well Status Inactive

Inspected by J. Pugh | L. Heald and Date 5/19/05

Company SCS | Bechtel

Well Surface Description:

Stickup (ground surface to top of riser casing): 2.0 - 0.42 = 1.58'

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.83'

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 77.72'

Well depth (measured from top of riser casing to bottom of well): 128.55'

Evidence of sediment in bottom of well: ✓ Yes ____ No ____ Maybe

Remarks: soft ~silt on tip.

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 806B Well Status active

Inspected by S. Beard Date _____

Company SCS

Well Surface Description:

Stickup (ground surface to top of riser casing): 1.8 − 0.65 = 1.15

Riser casing diameter: 2" ND Sch 40 PVC

Steel surface protective casing: ✓ Yes — No

Protective casing diameter: 0.95'

Cap: — Yes ✓ No Locked: ✓ Yes — No

Concrete surface seal: — Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: _____

Well Description:

Depth to water (measured from top of riser casing): 60.42

Well depth (measured from top of riser casing to bottom of well): 69.35

Evidence of sediment in bottom of well: — Yes ✓ No — Maybe

Remarks: hard bottom tag

Recommended for Development: _____ Yes ✓ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 808 Well Status active

Inspected by SBeare/LHeadland Date 6/14/05

Company SCS

Well Surface Description:

0.98 | -0.12

Stickup (ground surface to top of riser casing): .98+.98-.12= 0.98

Riser casing diameter: 4" ND Sch 40 PVC

Steel surface protective casing: ✓ Yes — No

Protective casing diameter: 0.55

Cap: — Yes ✓ No Locked: ✓ Yes ✓ No

Concrete surface seal: ✓ Yes — No — 5 dB.

Surface seal condition/integrity: good

Remarks: In Steel building

Well Description:

Depth to water (measured from top of riser casing): 57.52

Well depth (measured from top of riser casing to bottom of well): ~75.40

Evidence of sediment in bottom of well: ✓ Yes ____ No ____ Maybe

Remarks: soft bottom

Recommended for Development: ____ Yes ✓ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 809 Well Status inactive

Inspected by John Pugh Date 5-18-05

Company Southern Company Services

Well Surface Description:

Stickup (ground surface to top of riser casing): 1.23 ft

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.56 ft

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: ____

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 71.41 ft

Well depth (measured from top of riser casing to bottom of well): 94.35 ft

Evidence of sediment in bottom of well: X Yes ____ No ____ Maybe

Remarks: brown substance on point of water level indicator when bottom was measured

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 850 A Well Status inactive

Inspected by John Pugh Date 5-18-05 15:30 EDT

Company Southern Company Services

Well Surface Description:

Stickup (ground surface to top of riser casing): 1.96 ft

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.56 ft

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: ____

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 126.12 ft

Well depth (measured from top of riser casing to bottom of well): 193.68

Evidence of sediment in bottom of well: ____ Yes X No ____ Maybe

Remarks: ____

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 85/A Well Status inactive

Inspected by JOHN PUGH Date 05/18/05 17:00 EDT

Company SOUTHERN COMPANY SERVICES

Well Surface Description:

Stickup (ground surface to top of riser casing): 2.0 FT

Riser casing diameter: 2 IN.

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.56 FT

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 149.65 FT

Well depth (measured from top of riser casing to bottom of well): 285.18 FT

Evidence of sediment in bottom of well: ____ Yes ✓ No ____ Maybe

Remarks: ____

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 852 Well Status inactive

Inspected by John Pugh Date 5-18-05
13:19 EDT

Company Southern Company Services

Well Surface Description:

Stickup (ground surface to top of riser casing): 2.0 FT

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.52 FT

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 89.27 FT

Well depth (measured from top of riser casing to bottom of well): 222.90 FT

Evidence of sediment in bottom of well: ____ Yes ✓ No ____ Maybe

Remarks: NO EVIDENCE OF SEDIMENT OBSERVED

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 853 Well Status inactive

Inspected by JOHN BUSH Date 05/18/05 16:10 EDT

Company SOUTHERN COMPANY SERVICES

Well Surface Description:

Stickup (ground surface to top of riser casing): 1.86 FT

Riser casing diameter: 2 IN.

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.56 FT

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 125.69 FT

Well depth (measured from top of riser casing to bottom of well): 220.86 FT

Evidence of sediment in bottom of well: ✓ Yes ____ No ____ Maybe

Remarks: FINE SAND & ORGANIC MTL. ON PROBE

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 854 Well Status inactive

Inspected by JOHN PUGH Date 05/18/05

Company SOUTHERN COMPANY SERVICES ~~14:24~~ EDT 16:24

Well Surface Description:

Stickup (ground surface to top of riser casing): 1.85 FT

Riser casing diameter: 2 IN.

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.56 FT

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 134.24 FT

Well depth (measured from top of riser casing to bottom of well): 222.33

Evidence of sediment in bottom of well: ✓ Yes ____ No ____ Maybe

Remarks: SOFT BOTTOM BELOW SCREENED INTERVAL
PROBE CONTAINS ORGANIC & SILT MATERIAL TRACES

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 855 Well Status inactive

Inspected by John Pugh Date 5-18-05

Company Southern Co. Services 12:58 EDT

Well Surface Description:

Stickup (ground surface to top of riser casing): 2.0 FT.

Riser casing diameter: 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.52 FT

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 120.40FT

Well depth (measured from top of riser casing to bottom of well): 224.50FT

Evidence of sediment in bottom of well: ____ Yes ____ No ____ Maybe

Remarks: NO EVIDENCE OF SEDIMENT OBSERVED --- HOWEVER, MEASURED DEPTH OF 224.50 FT IS LESS THAN DOCUMENTED BOTTOM OF SCREENED INTERVAL.

Recommended for Development: ✓ Yes ____ No

Notes:

SNC ALWR ESP PROJECT
EXISTING OBSERVATION WELL INSPECTION REPORT

Well Number 856 Well Status inactive

Inspected by JOHN RUGH Date 05/18/05 13:47 EDT

Company SOUTHERN COMPANY SERVICES

Well Surface Description:

Stickup (ground surface to top of riser casing): 2.0 FT

Riser casing diameter: ~~0.52 FT~~ 2"

Steel surface protective casing: ✓ Yes ____ No

Protective casing diameter: 0.52 FT

Cap: ✓ Yes ____ No Locked: ✓ Yes ____ No

Concrete surface seal: ____ Yes ✓ No

Surface seal condition/integrity: N/A

Remarks: ____

Well Description:

Depth to water (measured from top of riser casing): 75.70 FT

Well depth (measured from top of riser casing to bottom of well): 182.14 FT

Evidence of sediment in bottom of well: ____ Yes ____ No ____ Maybe

Remarks: MEASURED DEPTH LESS THAN ORIGINAL BOTTOM OF SCREENED INTERVAL. NO EVIDENCE OF SEDIMENT OBSERVED ON PROBE

Recommended for Development: ✓ Yes ____ No

Notes:

APPENDIX I

LABORATORY DATA

Intracompany Correspondence

SOUTHERN COMPANY
Energy to Serve Your World®

Date: August 24, 2005

To: Ms. Rhonda Tinsley

From: Mr. Bobby Williams

Subject: Plant Vogtle ESP

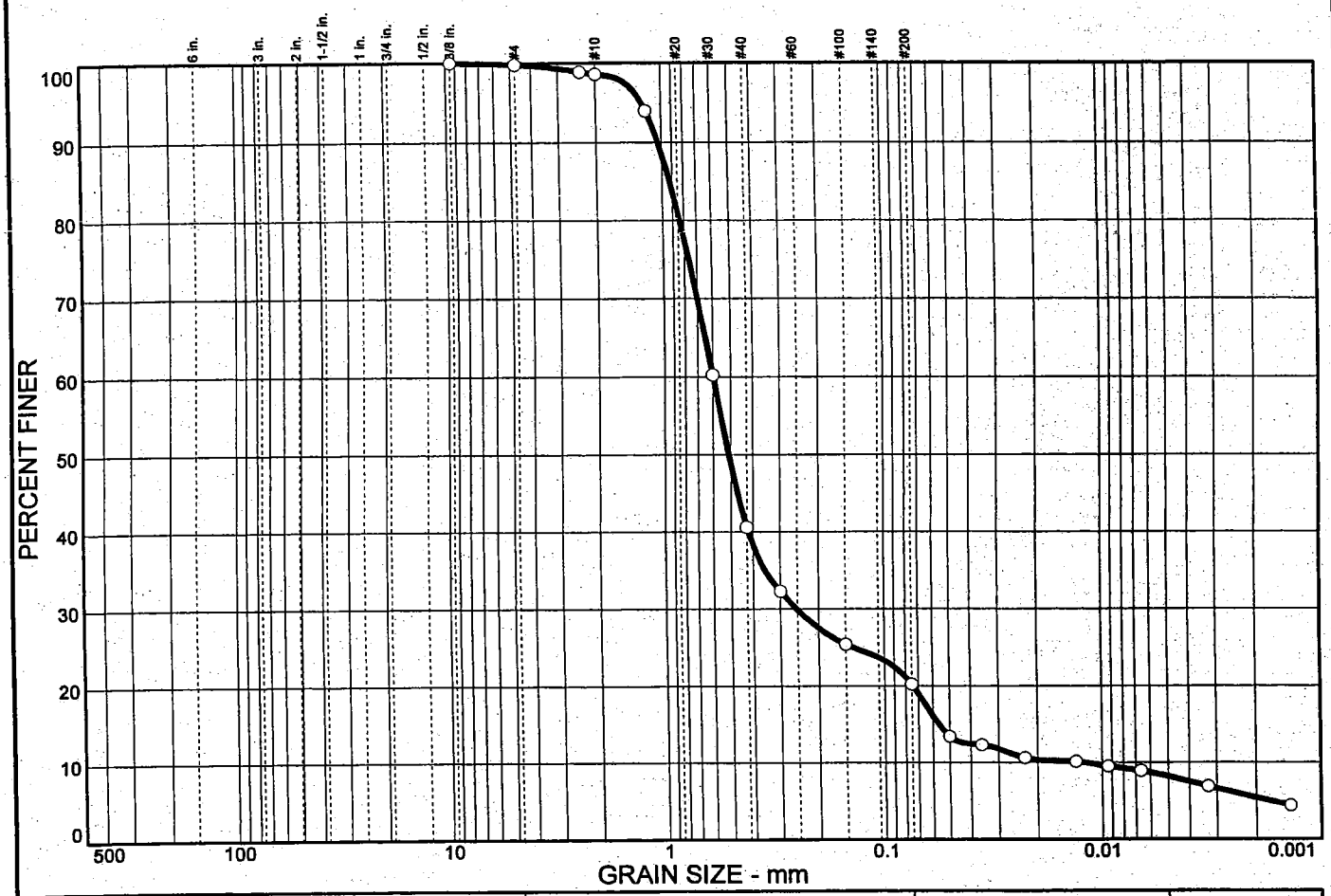
Enclosed are the test results for the Plant Vogtle ESP Project soil samples delivered to the Southern Company Central Laboratory on July 28, 2005. Tests performed include, Soil Particle Size Analysis with Hydrometer (ASTM D-422), and Specific Gravity of Soil (ASTM D-854).

We appreciate the opportunity to assist you on this project. If there are any questions, or if we can be of any further assistance, please call me at 8-255-6508 or Sam Moore at 8-255-6061.

Sincerely,

Bobby Williams, PE
Geostructural Services

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.2	79.6	12.0	8.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	99.8		
#8	98.9		
#10	98.6		
#16	94.0		
#30	60.2		
#40	40.6		
#50	32.3		
#100	25.4		
#200	20.2		

* (no specification provided)

Soil Description

Light Gray Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.925 D_{60}= 0.598 D_{50}= 0.510
D_{30}= 0.252 D_{15}= 0.0564 D_{10}= 0.0122
C_u= 49.11 C_c= 8.71

Classification

USCS= SM AASHTO=

Remarks

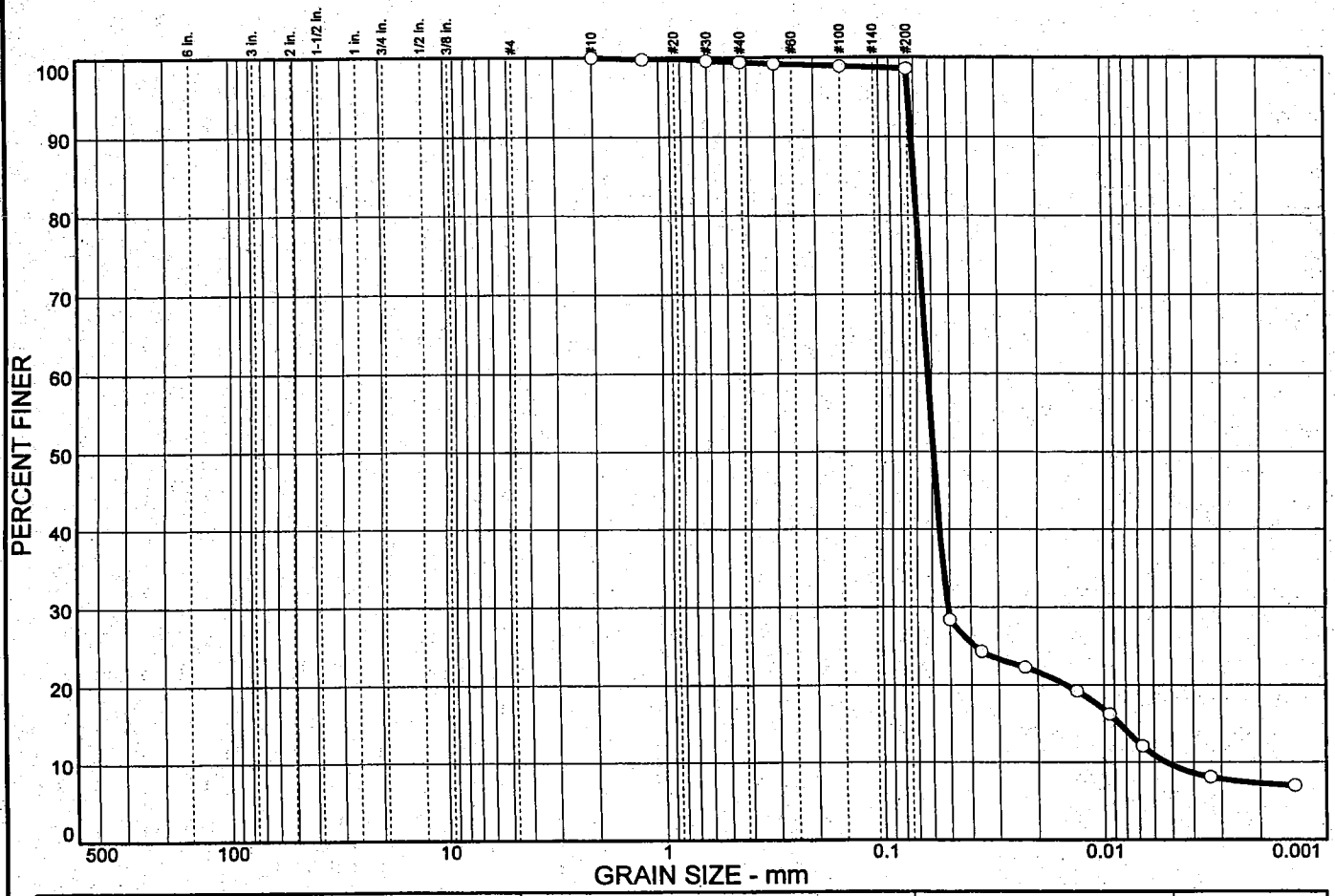
Bag Sample
Specific Gravity - 2.65

Sample No.: #27 **Source of Sample:** **Date:** 08/22/05
Location: Boring #1002 **Elev./Depth:** 218.5'-220.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 1

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	1.4	89.0	9.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#16	99.8		
#30	99.6		
#40	99.4		
#50	99.2		
#100	98.9		
#200	98.6		

* (no specification provided)

Soil Description

Dark Gray Silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.0705 D_{60}= 0.0624 D_{50}= 0.0590
D_{30}= 0.0509 D_{15}= 0.0086 D_{10}= 0.0053
C_u= 11.73 C_c= 7.81

Classification

USCS= ML AASHTO=

Remarks

Bag Sample
Specific Gravity - 2.62

Sample No.: #29 **Source of Sample:** **Date:** 08/22/05
Location: Boring #1002 **Elev./Depth:** 237'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No.: V003-DE **Lab#** 2

Particle Size Distribution Report

% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	65.1	13.4	21.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#8	99.9		
#10	99.8		
#16	98.1		
#30	88.8		
#40	76.9		
#50	65.5		
#100	44.3		
#200	34.9		

* (no specification provided)

Soil Description

Reddish Brown Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.533 D_{60}= 0.254 D_{50}= 0.186
D_{30}= 0.0487 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

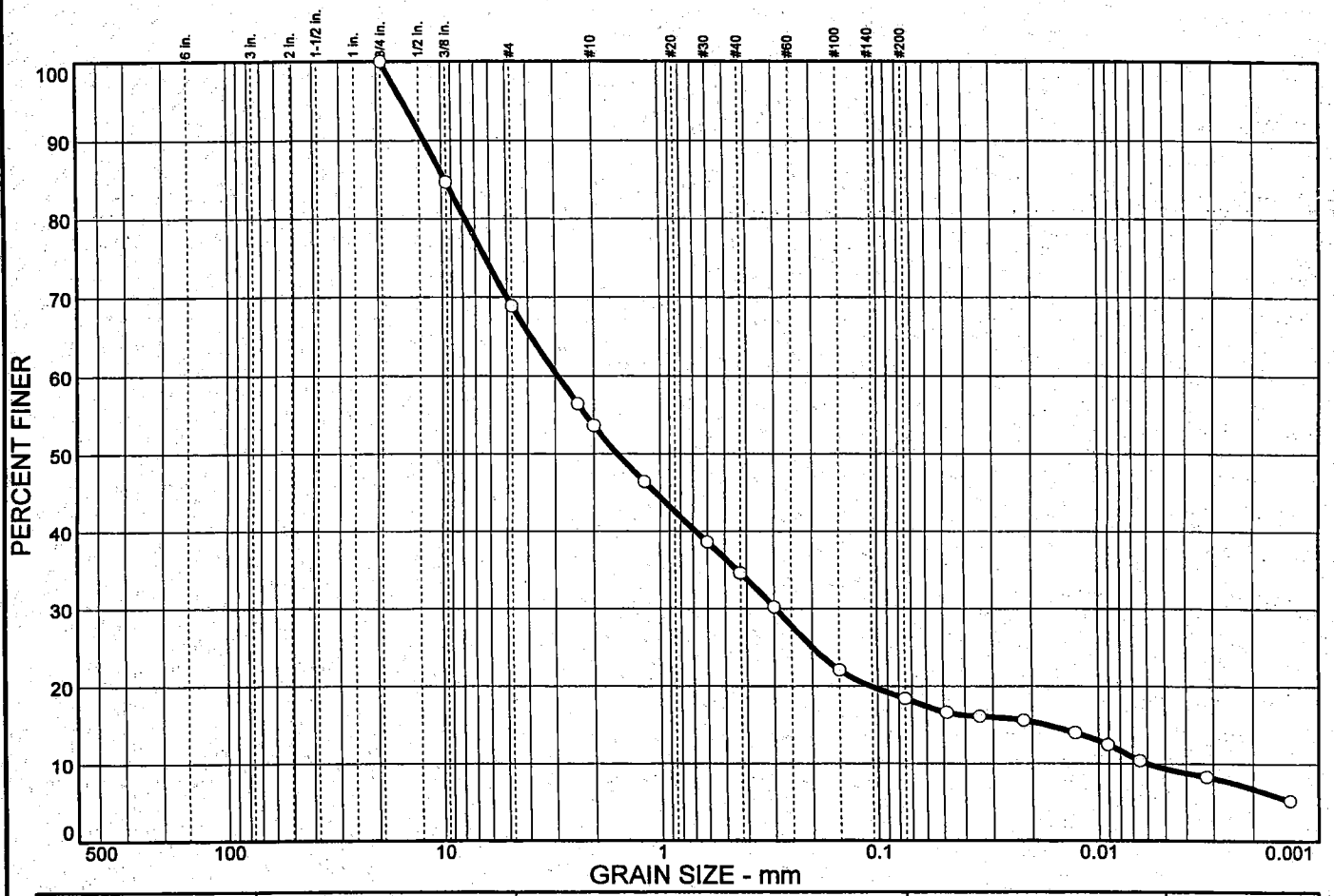
Jar Sample
Specific Gravity - 2.69

Sample No.: #16 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1003 **Elev./Depth:** 78.5'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 3

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	31.1	50.5	9.1	9.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.75 in.	100.0		
.375 in.	84.7		
#4	68.9		
#8	56.4		
#10	53.6		
#16	46.4		
#30	38.6		
#40	34.6		
#50	30.2		
#100	22.1		
#200	18.4		

* (no specification provided)

Soil Description

Light Tan Silty sand with gravel

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 9.65 D_{60}= 2.92 D_{50}= 1.57
D_{30}= 0.295 D_{15}= 0.0171 D_{10}= 0.0060
C_u= 486.69 C_c= 4.99

Classification

USCS= SM AASHTO=

Remarks

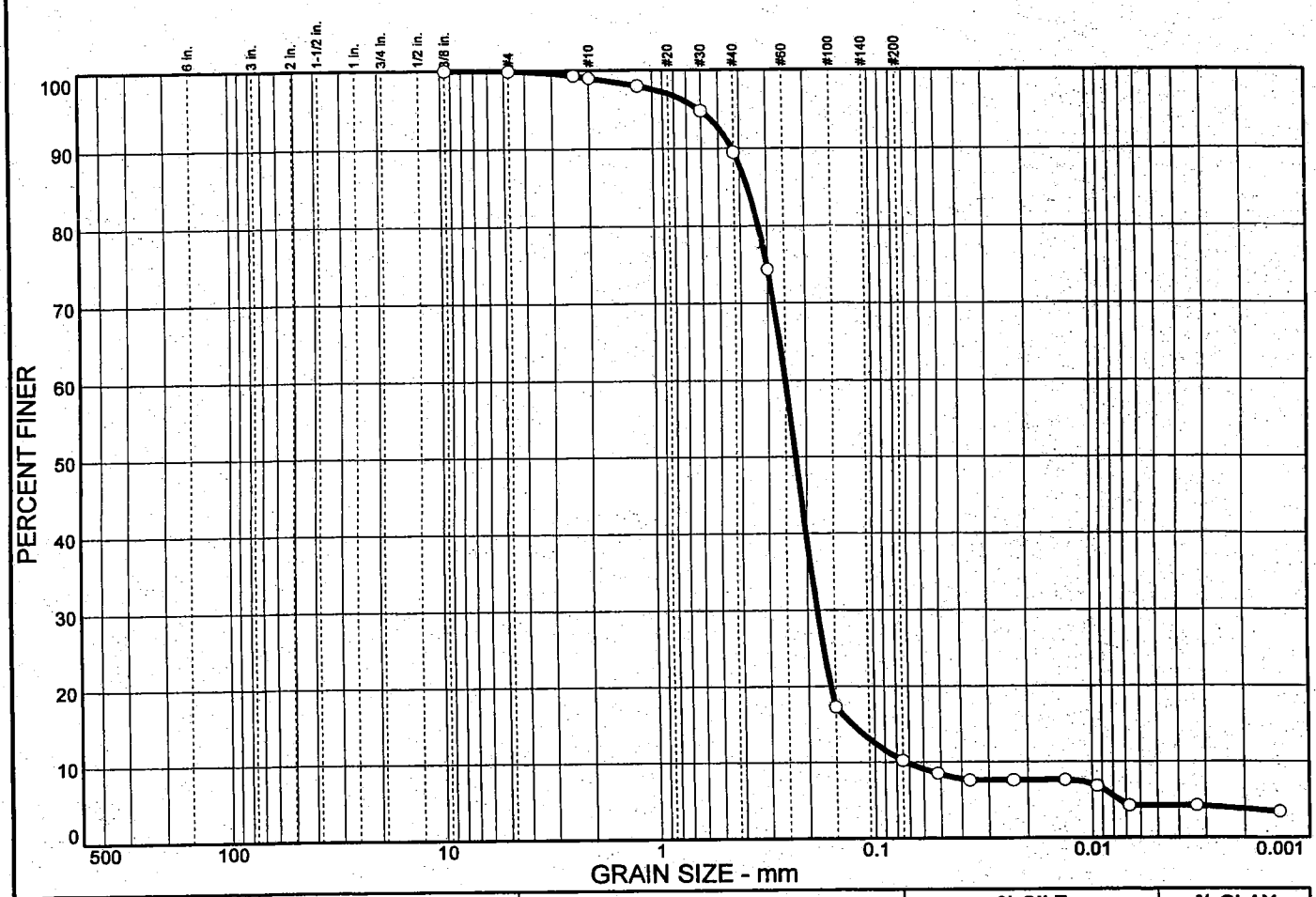
Jar Sample
Spicific Gravity - 2.68

Sample No.: #17 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1003 **Elev./Depth:** 83.5'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: 2441 V003-DE **Lab#** 4

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.1	89.7	6.0	4.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	99.9		
#8	99.3		
#10	99.0		
#16	98.0		
#30	94.8		
#40	89.5		
#50	74.4		
#100	17.3		
#200	10.2		

* (no specification provided)

Soil Description

Gray Poorly graded sand with silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.368 D_{60}= 0.251 D_{50}= 0.225
D_{30}= 0.180 D_{15}= 0.126 D_{10}= 0.0725
C_u= 3.46 C_c= 1.79

Classification

USCS= SP-SM AASHTO=

Remarks

Bag Sample
Specific Gravity - 2.69

Sample No.: #14 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1004 **Elev./Depth:** 153.5'- 155.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP

Project No.: V003-DE **Lab#** 5

Particle Size Distribution Report

% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	93.4	2.7	3.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#16	99.9		
#30	99.4		
#40	98.3		
#50	86.8		
#100	13.1		
#200	6.6		

* (no specification provided)

Soil Description

Gray Poorly graded sand with silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.293 D_{60}= 0.230 D_{50}= 0.212
D_{30}= 0.180 D_{15}= 0.154 D_{10}= 0.119
C_u= 1.94 C_c= 1.18

Classification

USCS= SP-SM AASHTO=

Remarks

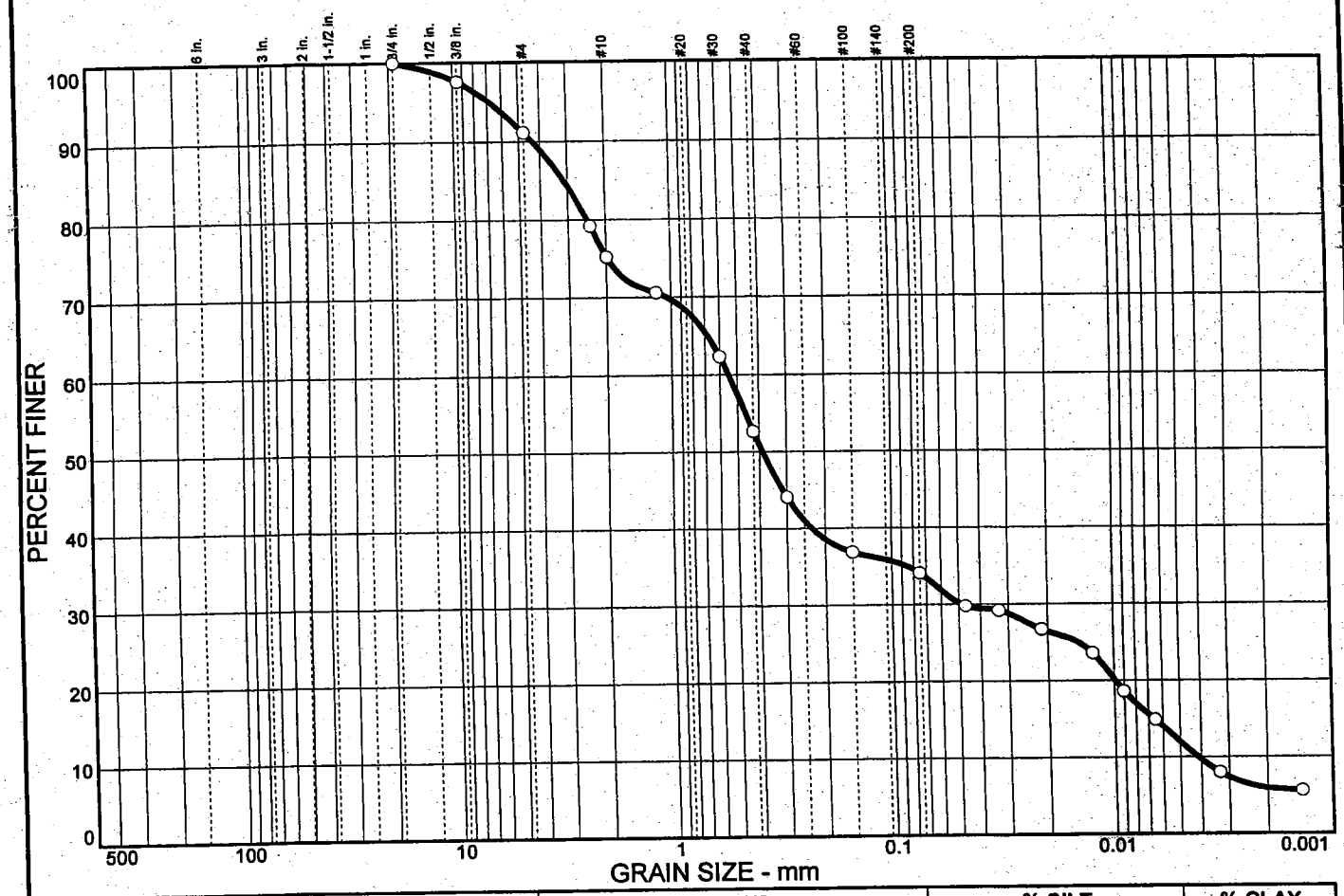
Bag Sample
Specific Gravity - 2.67

Sample No.: #15 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1004 **Elev./Depth:** 158.5'-160.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No.: V003-DE **Lab#** 6

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	8.9	57.0	22.1	12.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.75 in.	100.0		
.375 in.	97.6		
#4	91.1		
#8	79.2		
#10	75.2		
#16	70.6		
#30	62.3		
#40	52.6		
#50	44.1		
#100	36.9		
#200	34.1		

* (no specification provided)

Soil Description

Very Light Tan Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 3.11 D_{60}= 0.549 D_{50}= 0.387
D_{30}= 0.0484 D_{15}= 0.0066 D_{10}= 0.0041
C_u= 132.85 C_c= 1.03

Classification

USCS= SM AASHTO=

Remarks

Jar Sample
Specific Gravity - 2.63

Sample No.: #17B **Source of Sample:** **Date:** 08/23/05
Location: Boring #1005 **Elev./Depth:** 148.5'-150.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 7

Particle Size Distribution Report

% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	18.2	47.6	11.0	23.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.75 in.	100.0		
.375 in.	89.8		
#4	81.8		
#8	71.9		
#10	69.3		
#16	62.9		
#30	54.7		
#40	51.0		
#50	47.5		
#100	38.5		
#200	34.2		

* (no specification provided)

Soil Description

Very Light Tan Silty sand with gravel

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 6.29 D_{60}= 0.926 D_{50}= 0.383
D_{30}= 0.0144 D_{15}= 0.0016 D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

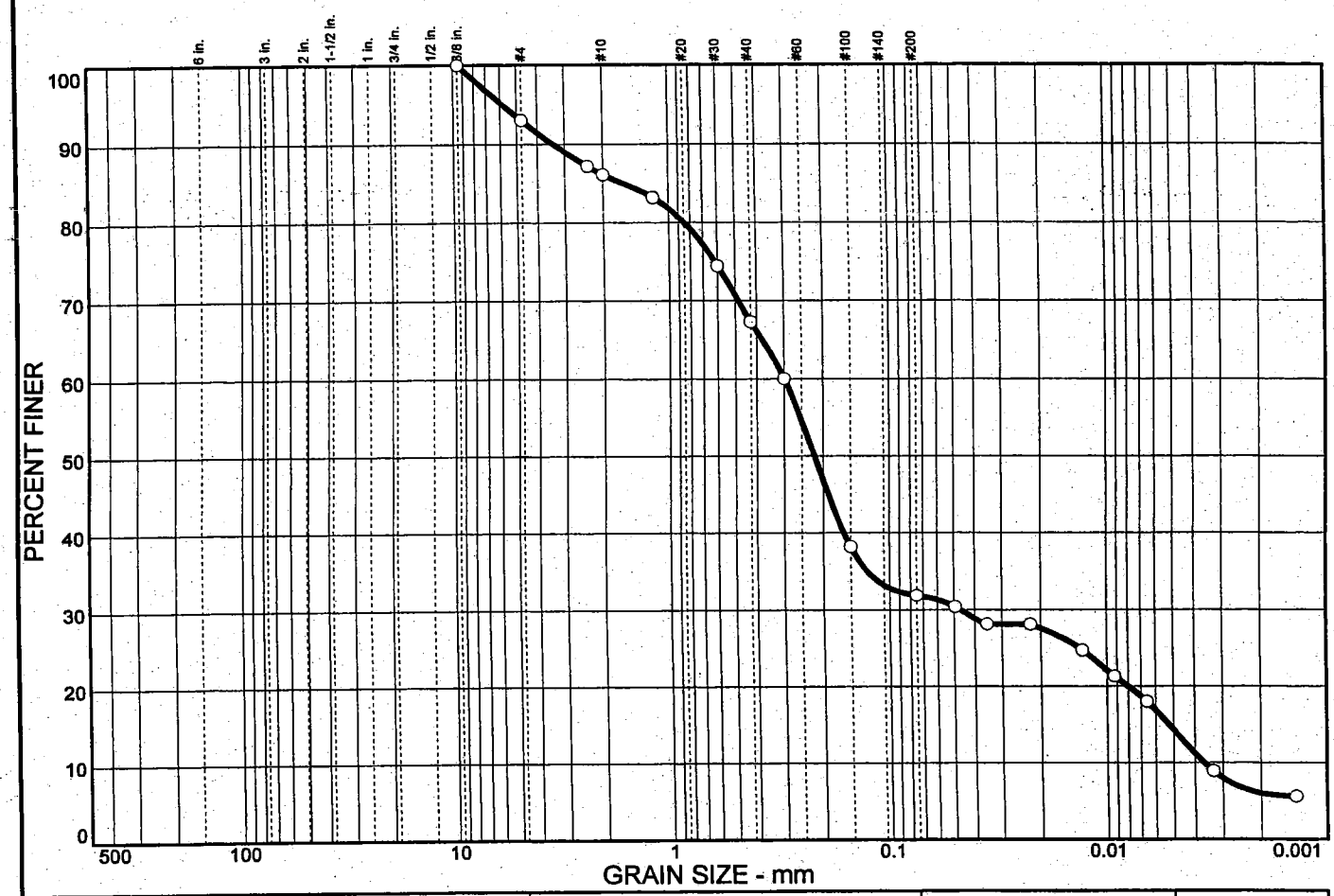
Jar Sample
Specific Gravity - 2.61

Sample No.: #18B **Source of Sample:** **Date:** 08/23/05
Location: Boring #1005 **Elev./Depth:** 153.5-155.0

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 8

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	7.0	61.1	17.6	14.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	93.0		
#8	87.2		
#10	86.1		
#16	83.2		
#30	74.5		
#40	67.3		
#50	60.0		
#100	38.2		
#200	31.9		

* (no specification provided)

Soil Description

Very Light Tan Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 1.62 D_{60}= 0.300 D_{50}= 0.219
D_{30}= 0.0467 D_{15}= 0.0052 D_{10}= 0.0036
C_u= 82.37 C_c= 1.99

Classification

USCS= SM AASHTO=

Remarks

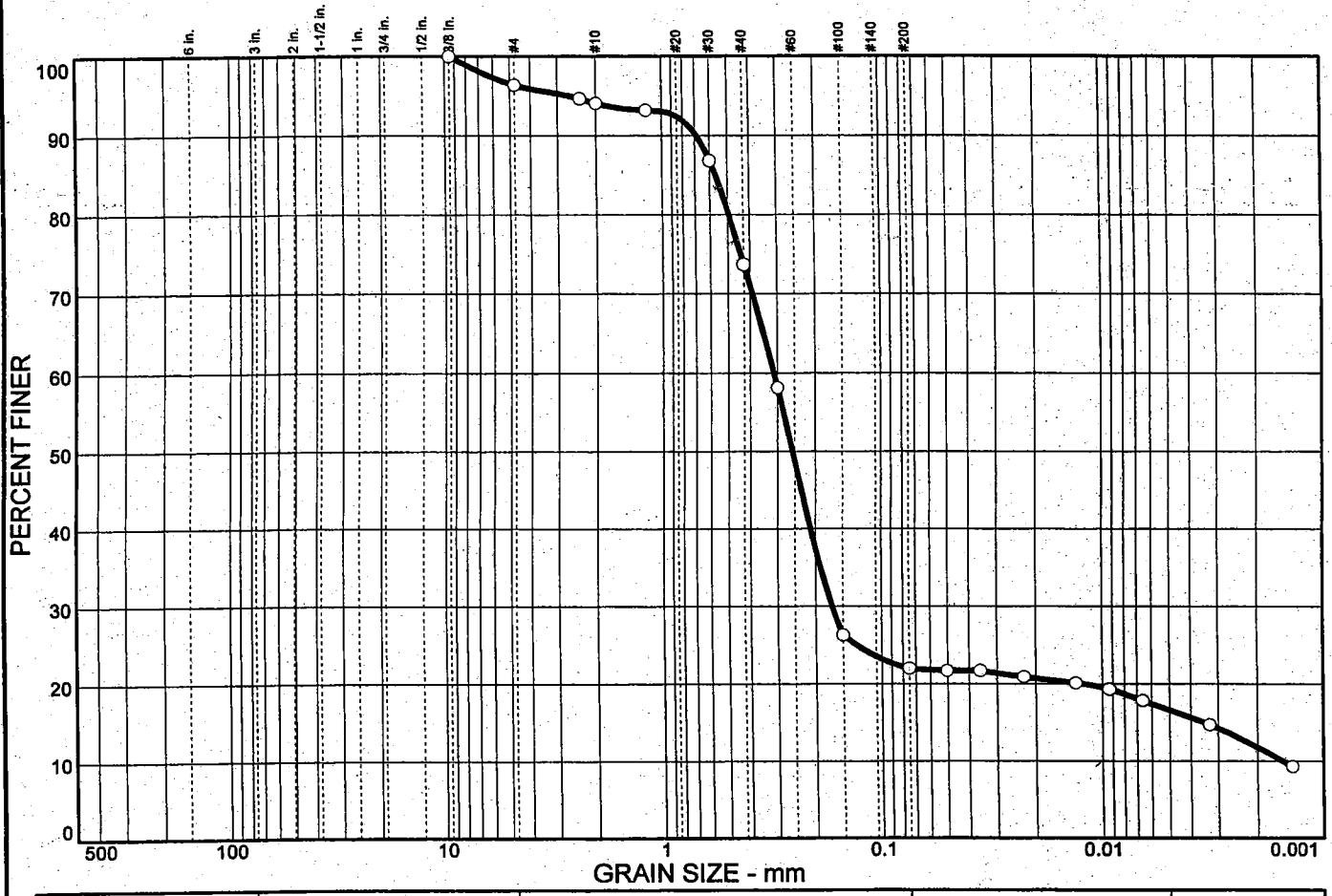
Jar Sample
Specific Gravity - 2.67

Sample No.: #23 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1006 **Elev./Depth:** 113.5'-115.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 9

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	3.6	74.4	5.4	16.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	96.4		
#8	94.7		
#10	94.1		
#16	93.2		
#30	86.8		
#40	73.7		
#50	58.1		
#100	26.3		
#200	22.0		

* (no specification provided)

Soil Description

Very Light Tan Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.566 D_{60}= 0.312 D_{50}= 0.256
D_{30}= 0.168 D_{15}= 0.0035 D_{10}= 0.0015
C_u= 202.26 C_c= 58.75

Classification

USCS= SM AASHTO=

Remarks

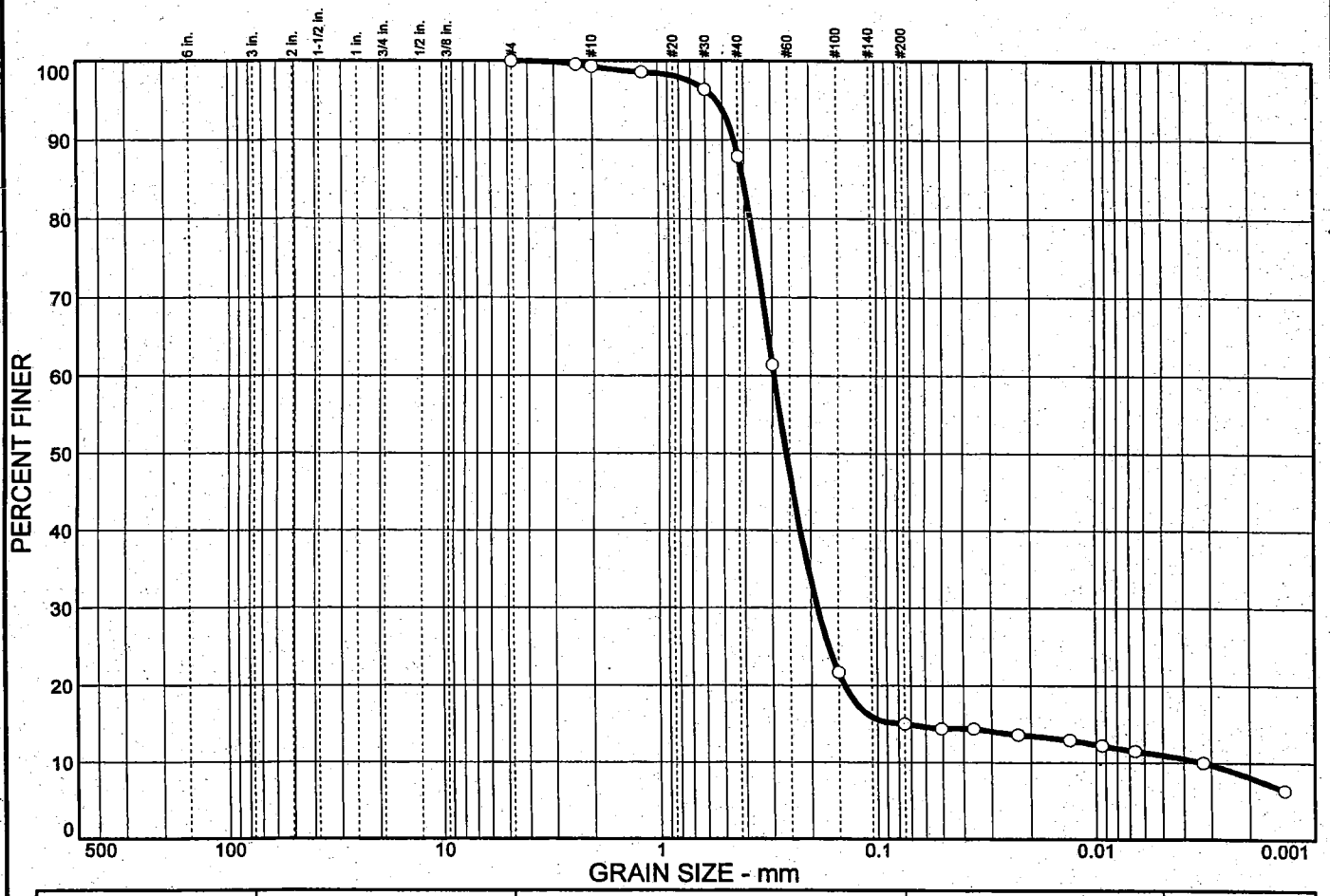
Jar Sample
Specific Gravity - 2.59

Sample No.: #24 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1006 **Elev./Depth:** 118.5'-120.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No.: V003-DE **Lab#** 10

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	85.0	4.0	11.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#8	99.6		
#10	99.3		
#16	98.6		
#30	96.4		
#40	87.9		
#50	61.4		
#100	21.7		
#200	15.0		

* (no specification provided)

Soil Description

Very Light Tan Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.404 D_{60}= 0.295 D_{50}= 0.259
D_{30}= 0.186 D_{15}= 0.0750 D_{10}= 0.0033
C_u= 90.28 C_c= 35.89

Classification

USCS= SM AASHTO=

Remarks

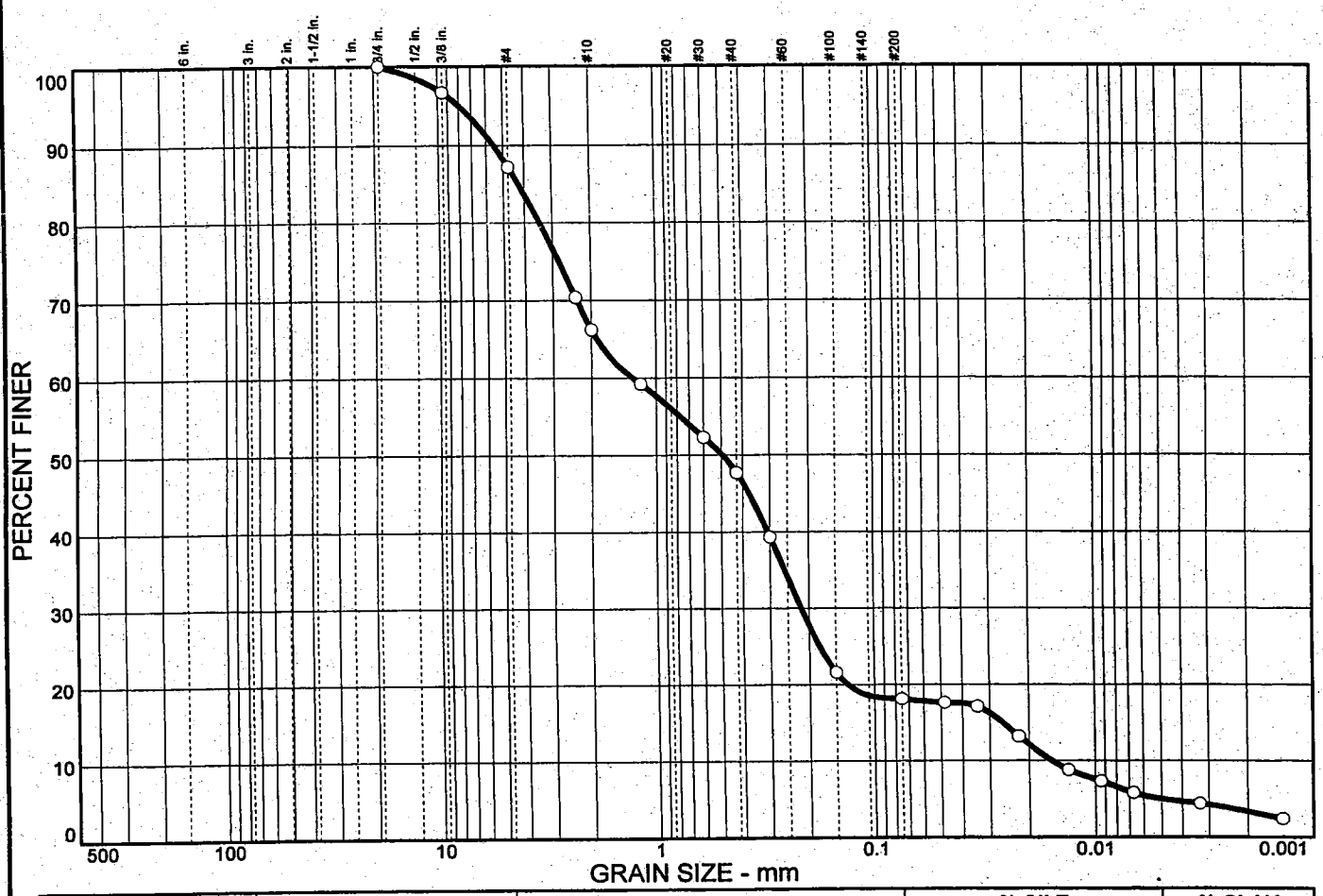
Jar Sample
Specific Gravity - 2.65

Sample No.: #2 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1007 **Elev./Depth:** 103.5'-105.0

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No.: V003-DE **Lab#** 11

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	12.8	69.1	13.1	5.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.75 in.	100.0		
.375 in.	96.7		
#4	87.2		
#8	70.4		
#10	66.2		
#16	59.2		
#30	52.3		
#40	47.7		
#50	39.3		
#100	21.6		
#200	18.1		

* (no specification provided)

Soil Description

Very Light Tan Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 4.27 D_{60}= 1.29 D_{50}= 0.493
D_{30}= 0.217 D_{15}= 0.0263 D_{10}= 0.0157
C_u= 81.97 C_c= 2.33

Classification

USCS= SM AASHTO=

Remarks

Jar Sample
Specific Gravity - 2.66

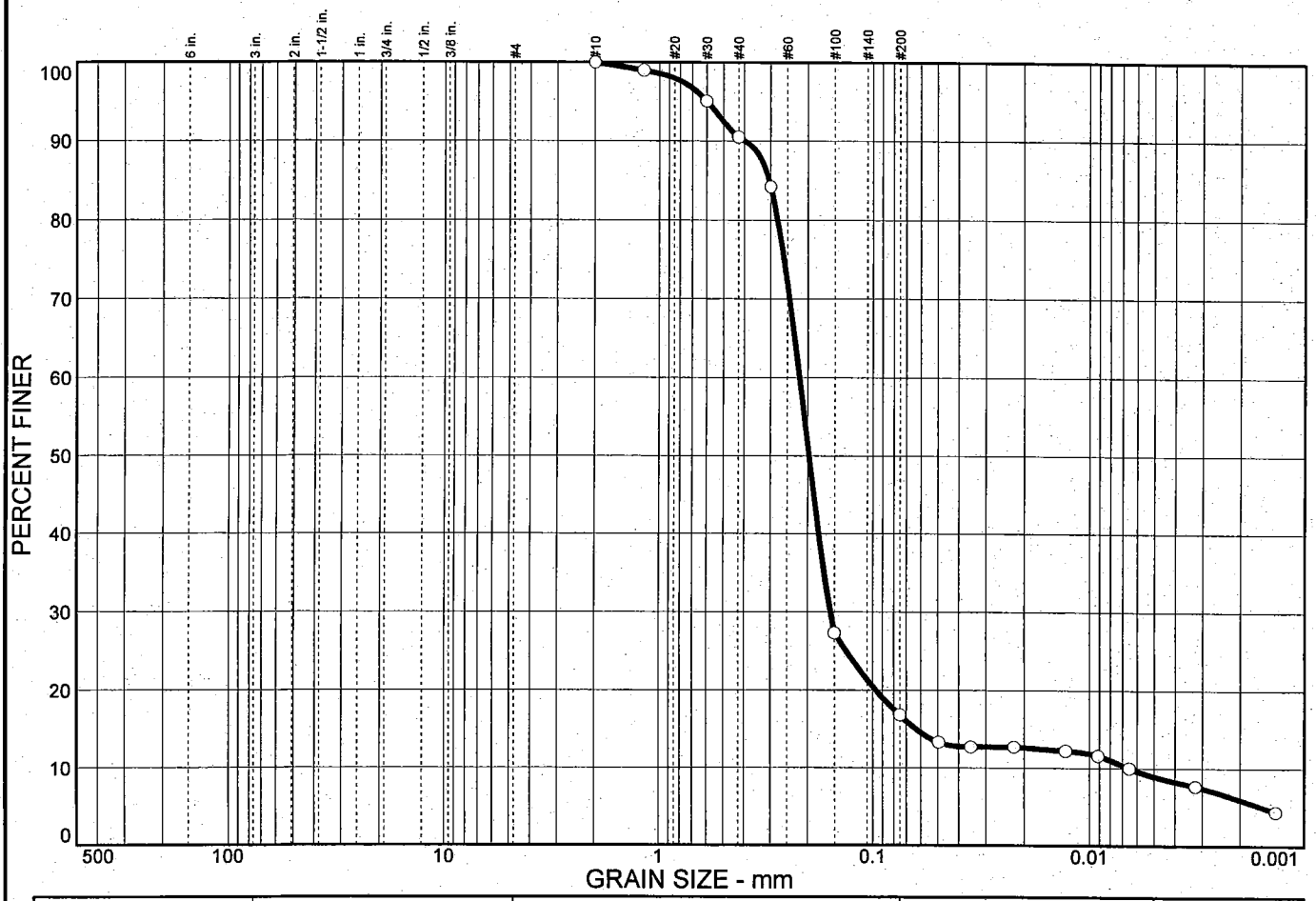
Sample No.: #3 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1007 **Elev./Depth:** 108.5'-110.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP

Project No.: V003-DE **Lab#** 12

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	83.2	7.8	9.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#16	99.0		
#30	95.1		
#40	90.5		
#50	84.2		
#100	27.3		
#200	16.8		

* (no specification provided)

Soil Description

Light Tan Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.306 D_{60}= 0.219 D_{50}= 0.197
D_{30}= 0.156 D_{15}= 0.0632 D_{10}= 0.0065
C_u= 33.60 C_c= 17.15

Classification

USCS= SM AASHTO=

Remarks

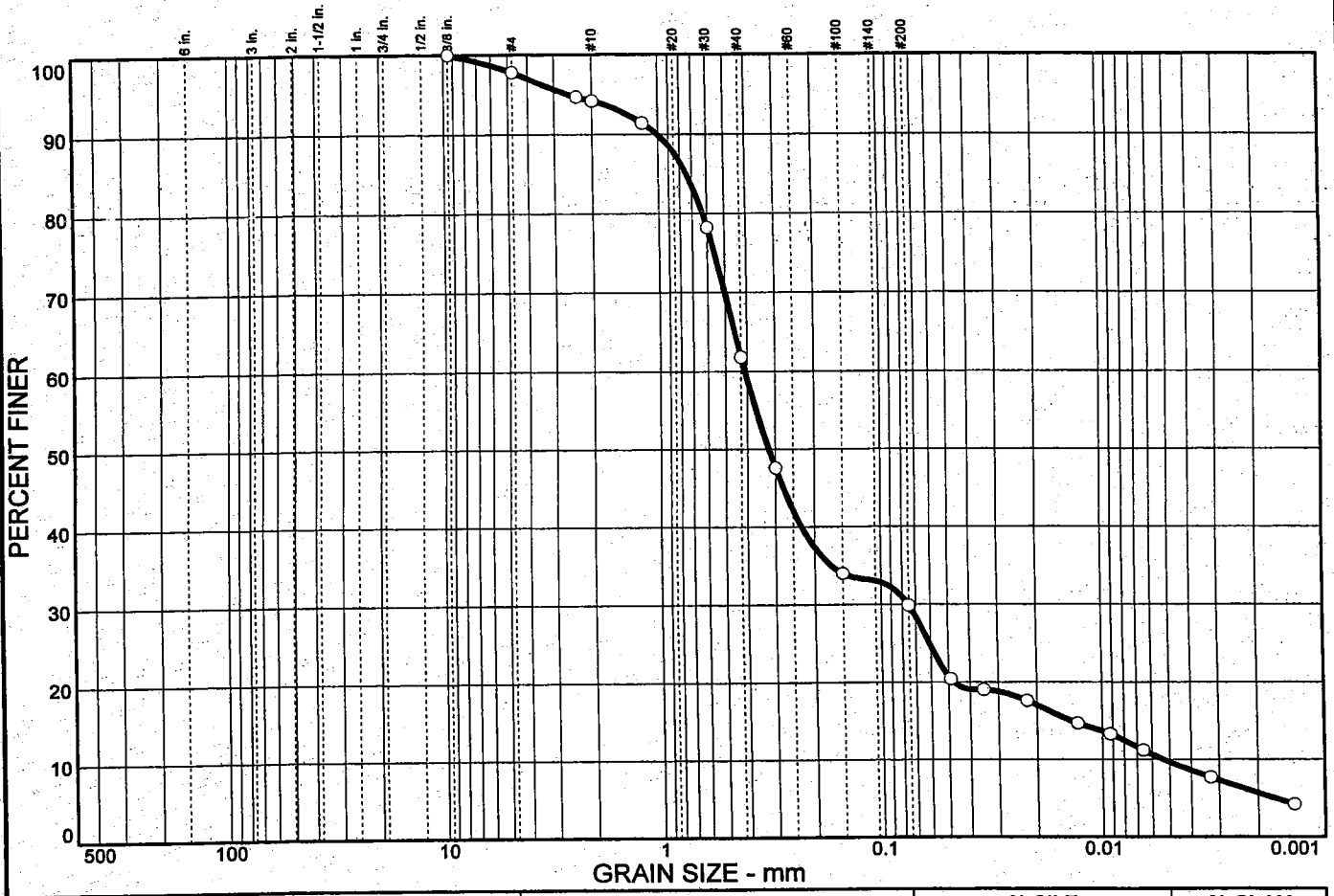
Bag Sample
Specific Gravity - 2.69

Sample No.: #24 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1008 **Elev./Depth:** 228.5'-230.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: 2A-21V003-DE **Lab#** 13

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	2.2	67.9	20.3	9.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	97.8		
#8	94.7		
#10	94.2		
#16	91.4		
#30	78.2		
#40	61.8		
#50	47.6		
#100	34.0		
#200	29.9		

* (no specification provided)

Soil Description

Gray Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.744 D_{60}= 0.409 D_{50}= 0.321
D_{30}= 0.0754 D_{15}= 0.0138 D_{10}= 0.0053
C_u= 76.50 C_c= 2.60

Classification

USCS= SM AASHTO=

Remarks

Bag Sample

Sample No.: #25 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1008 **Elev./Depth:** 238.5'-240.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: 2 V003-DE **Lab#** 13

Particle Size Distribution Report

% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	2.2	67.9	20.3	9.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	97.8		
#8	94.7		
#10	94.2		
#16	91.4		
#30	78.2		
#40	61.8		
#50	47.6		
#100	34.0		
#200	29.9		

* (no specification provided)

Soil Description

Gray Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.744 D_{60}= 0.409 D_{50}= 0.321
D_{30}= 0.0754 D_{15}= 0.0138 D_{10}= 0.0053
C_u= 76.50 C_c= 2.60

Classification

USCS= SM AASHTO=

Remarks

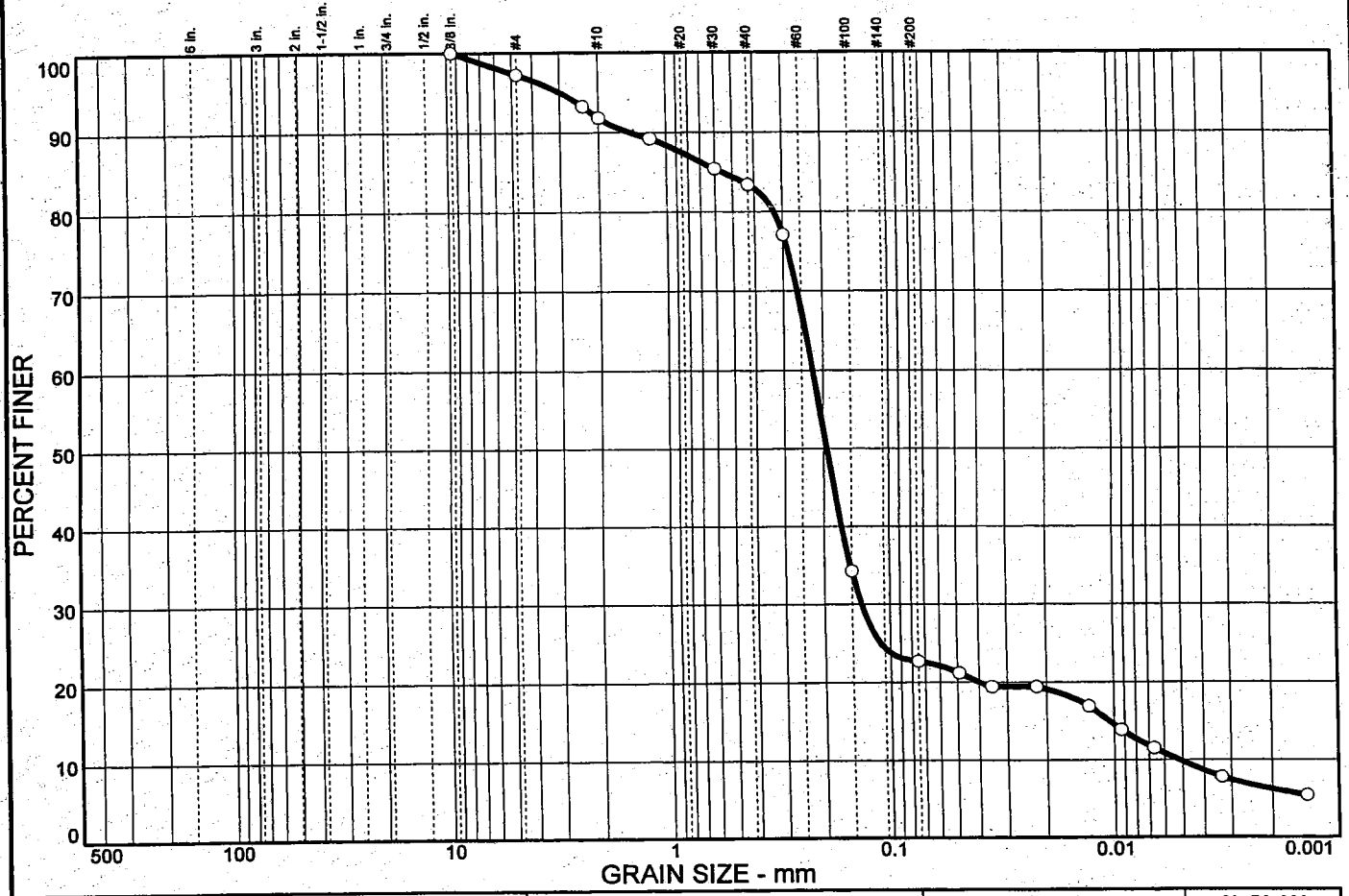
Bag Sample
Specific Gravity - 2.68

Sample No.: #25 **Source of Sample:** **Date:** 08/23/05
Location: Boring #1008 **Elev./Depth:** 238.5'-240.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: 3 V003-DE **Lab#** 14

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	2.7	74.6	12.9	9.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	97.3		
#8	93.3		
#10	91.8		
#16	89.2		
#30	85.4		
#40	83.4		
#50	77.1		
#100	34.3		
#200	22.7		

* (no specification provided)

Soil Description

Very Light Tan Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.558 D_{60}= 0.223 D_{50}= 0.193
D_{30}= 0.135 D_{15}= 0.0105 D_{10}= 0.0052
C_u= 42.99 C_c= 15.88

Classification

USCS= SM AASHTO=

Remarks

Jar Sample
Spicific Gravity - 2.61

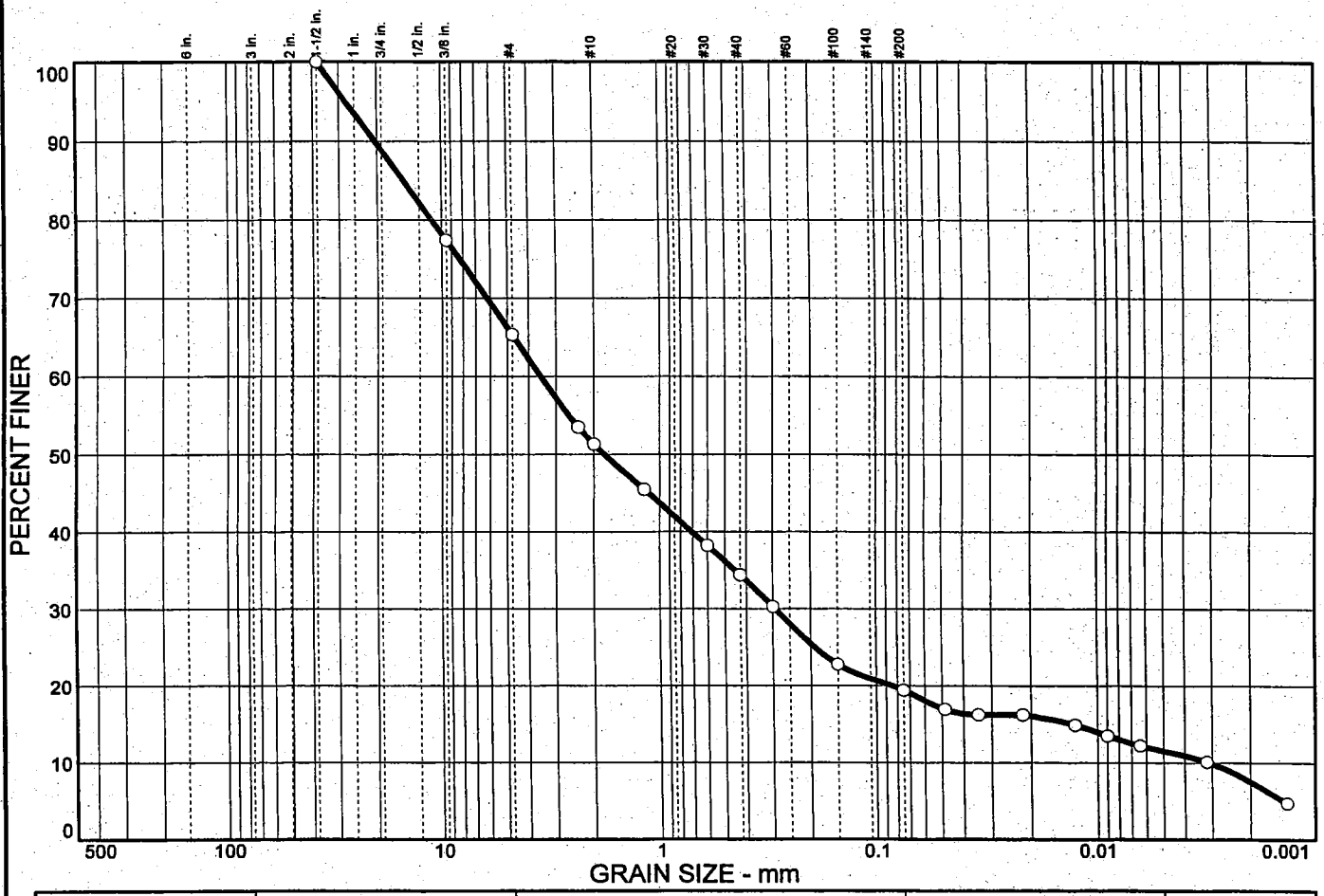
Sample No.: #17 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1009 **Elev./Depth:** 85'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP

Project No: V003-DE **Lab#** 15

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	34.7	45.9	7.9	11.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.50 in.	100.0		
.375 in.	77.4		
#4	65.3		
#8	53.5		
#10	51.3		
#16	45.5		
#30	38.2		
#40	34.4		
#50	30.3		
#100	22.8		
#200	19.4		

* (no specification provided)

Soil Description

Very Light Tan Silty sand with gravel

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 15.0 D_{60}= 3.53 D_{50}= 1.79
D_{30}= 0.293 D_{15}= 0.0130 D_{10}= 0.0031
C_u= 1142.64 C_c= 7.85

Classification

USCS= SM AASHTO=

Remarks

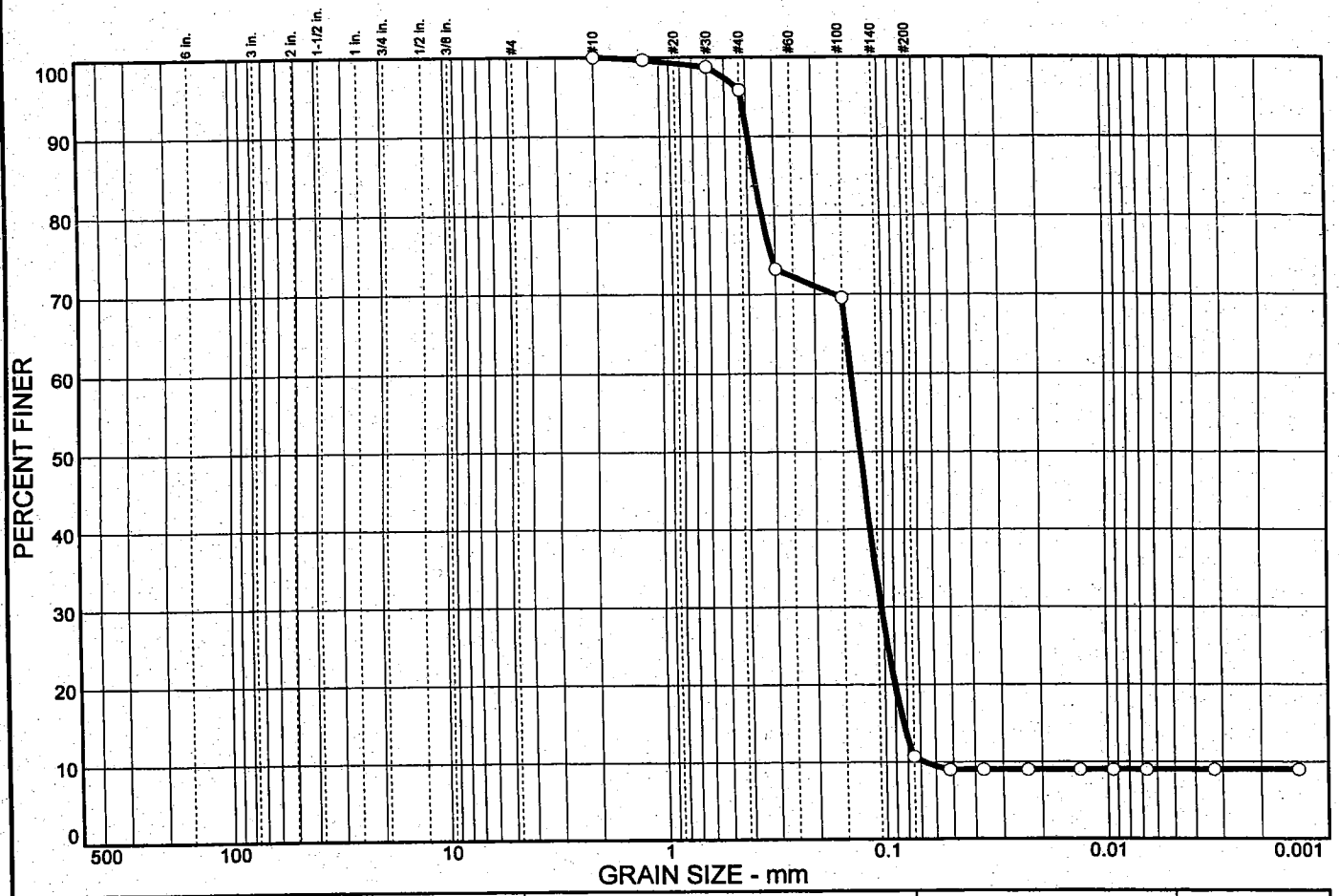
Jar Sample
Specific Gravity 2.75

Sample No.: #18 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1009 **Elev./Depth:** 90'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 16

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	89.3	1.7	9.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#16	99.7		
#30	98.8		
#40	95.9		
#50	73.2		
#100	69.6		
#200	10.7		

* (no specification provided)

Soil Description

Tan Poorly graded sand with silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.370 D_{60}= 0.138 D_{50}= 0.126
D_{30}= 0.102 D_{15}= 0.0830 D_{10}= 0.0670
C_u= 2.05 C_c= 1.14

Classification

USCS= SP-SM AASHTO=

Remarks

Jar Sample
Specific Gravity - 2.67

Sample No.: #15 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1010 **Elev./Depth:** 73.5'-75.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 17

Particle Size Distribution Report

% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	63.5	3.5	33.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#8	98.7		
#10	98.3		
#16	98.1		
#30	97.8		
#40	97.4		
#50	94.5		
#100	54.8		
#200	36.5		

* (no specification provided)

Soil Description

Tan Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.257 D_{60}= 0.167 D_{50}= 0.134
D_{30}= 0.0020 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

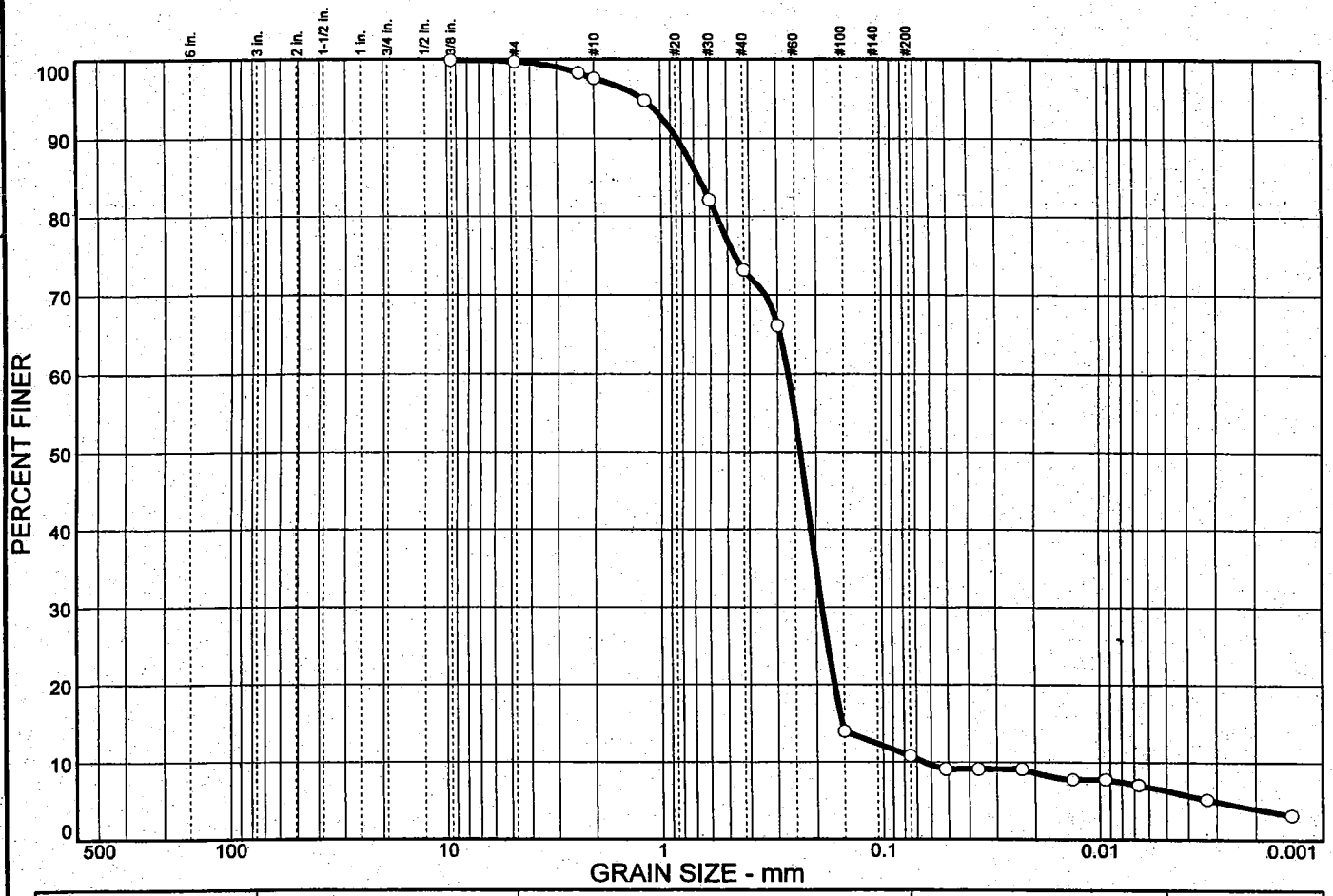
Jar Sample
Specific Gravity - 2.63

Sample No.: #16 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1010 **Elev./Depth:** 78.5'-80.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 18

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
		88.9	4.4	6.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	99.9		
#4	99.7		
#8	98.3		
#10	97.6		
#16	94.8		
#30	82.1		
#40	73.2		
#50	66.1		
#100	14.0		
#200	10.8		

* (no specification provided)

Soil Description

Gray Poorly graded sand with silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.669 D_{60}= 0.269 D_{50}= 0.236
D_{30}= 0.188 D_{15}= 0.153 D_{10}= 0.0649
C_u= 4.15 C_c= 2.03

Classification

USCS= SP-SM AASHTO=

Remarks

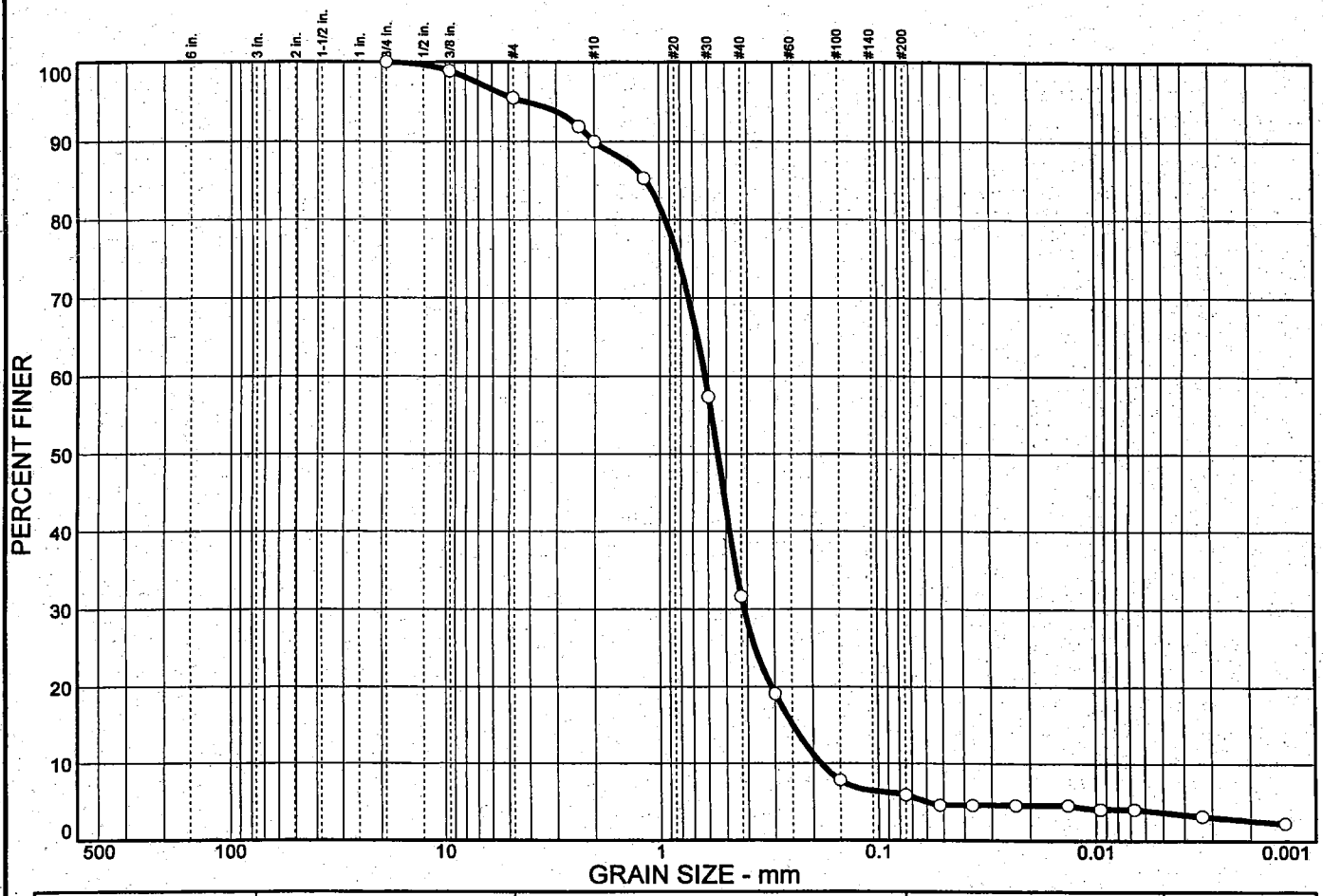
Bag Sample
Specific Gravity - 2.67

Sample No.: #24 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1011 **Elev./Depth:** 193.5'-195.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No.: V003-DE **Lab#** 19

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	4.5	89.6	2.2	3.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.75 in.	100.0		
.375 in.	98.9		
#4	95.5		
#8	91.9		
#10	90.0		
#16	85.3		
#30	57.3		
#40	31.7		
#50	19.1		
#100	7.8		
#200	5.9		

* (no specification provided)

Soil Description

Gray Poorly graded sand with silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 1.16 D_{60}= 0.623 D_{50}= 0.545
D_{30}= 0.412 D_{15}= 0.249 D_{10}= 0.185
C_u= 3.38 C_c= 1.48

Classification

USCS= SP-SM AASHTO=

Remarks

Bag Sample
Specifiv Gravity - 2.66

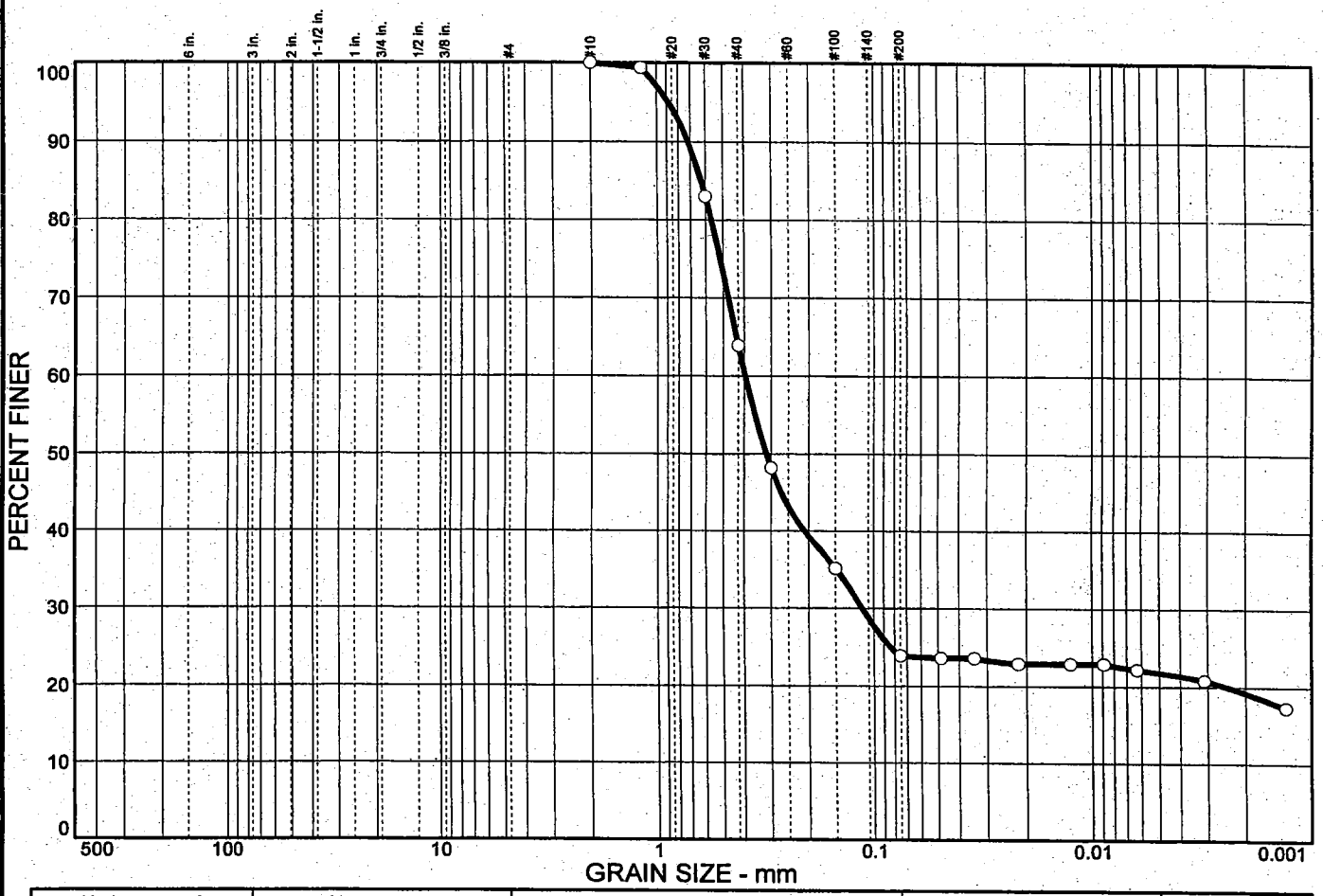
Sample No.: #25 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1011 **Elev./Depth:** 208.5'-210.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP

Project No.: V003-DE **Lab#** 20

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	76.1	2.1	21.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#16	99.4		
#30	83.0		
#40	63.9		
#50	48.2		
#100	35.2		
#200	23.9		

* (no specification provided)

Soil Description

Tan Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.628 D_{60}= 0.395 D_{50}= 0.316
D_{30}= 0.113 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

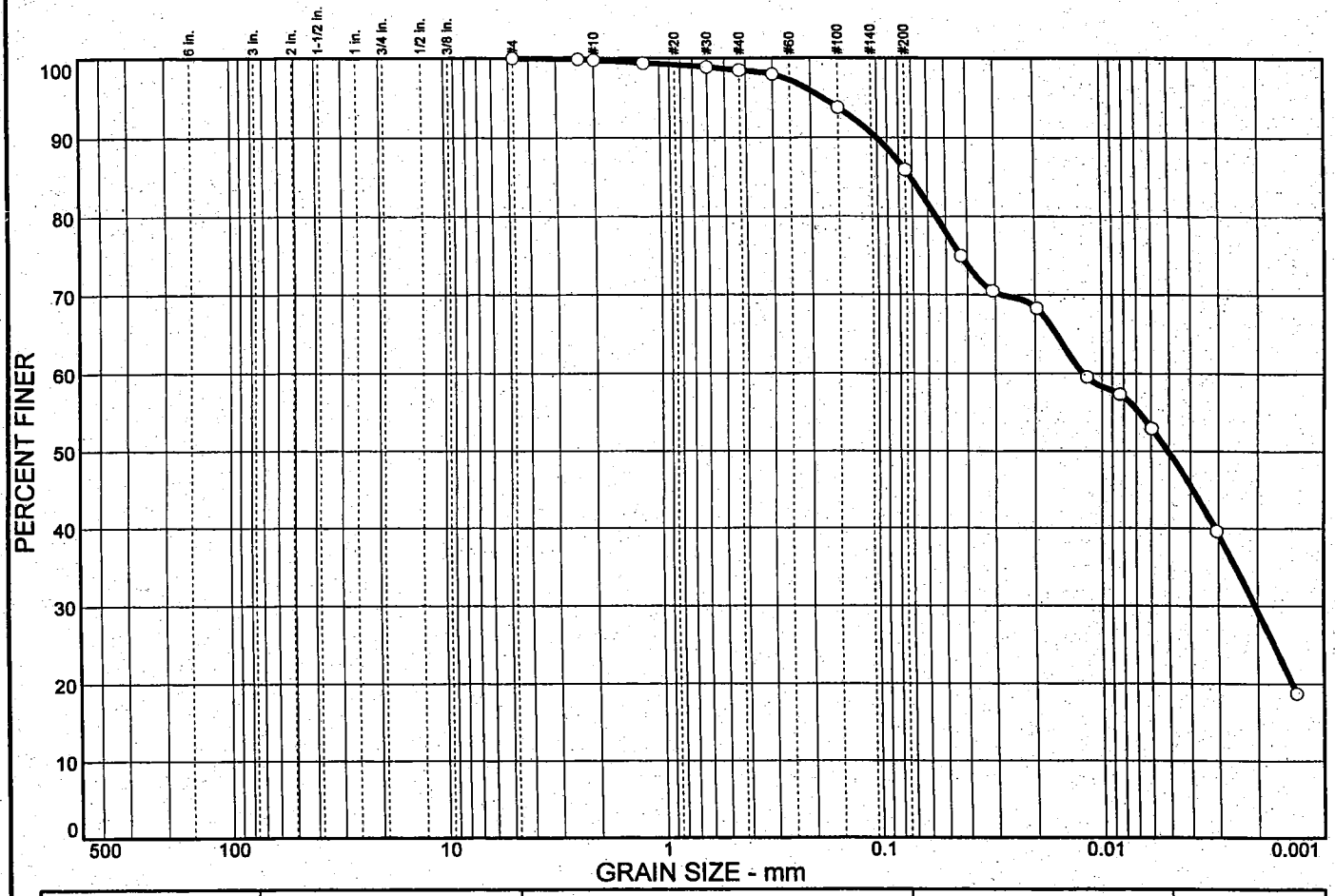
Jar Sample
Specific Gravity - 2.66

Sample No.: #15 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1012 **Elev./Depth:** 73.5'-75.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 21

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	14.1	36.1	49.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#8	99.9		
#10	99.8		
#16	99.4		
#30	98.9		
#40	98.5		
#50	98.0		
#100	93.8		
#200	85.9		

* (no specification provided)

Soil Description

Light Tan Silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.0712 D_{60}= 0.0121 D_{50}= 0.0051
D_{30}= 0.0021 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

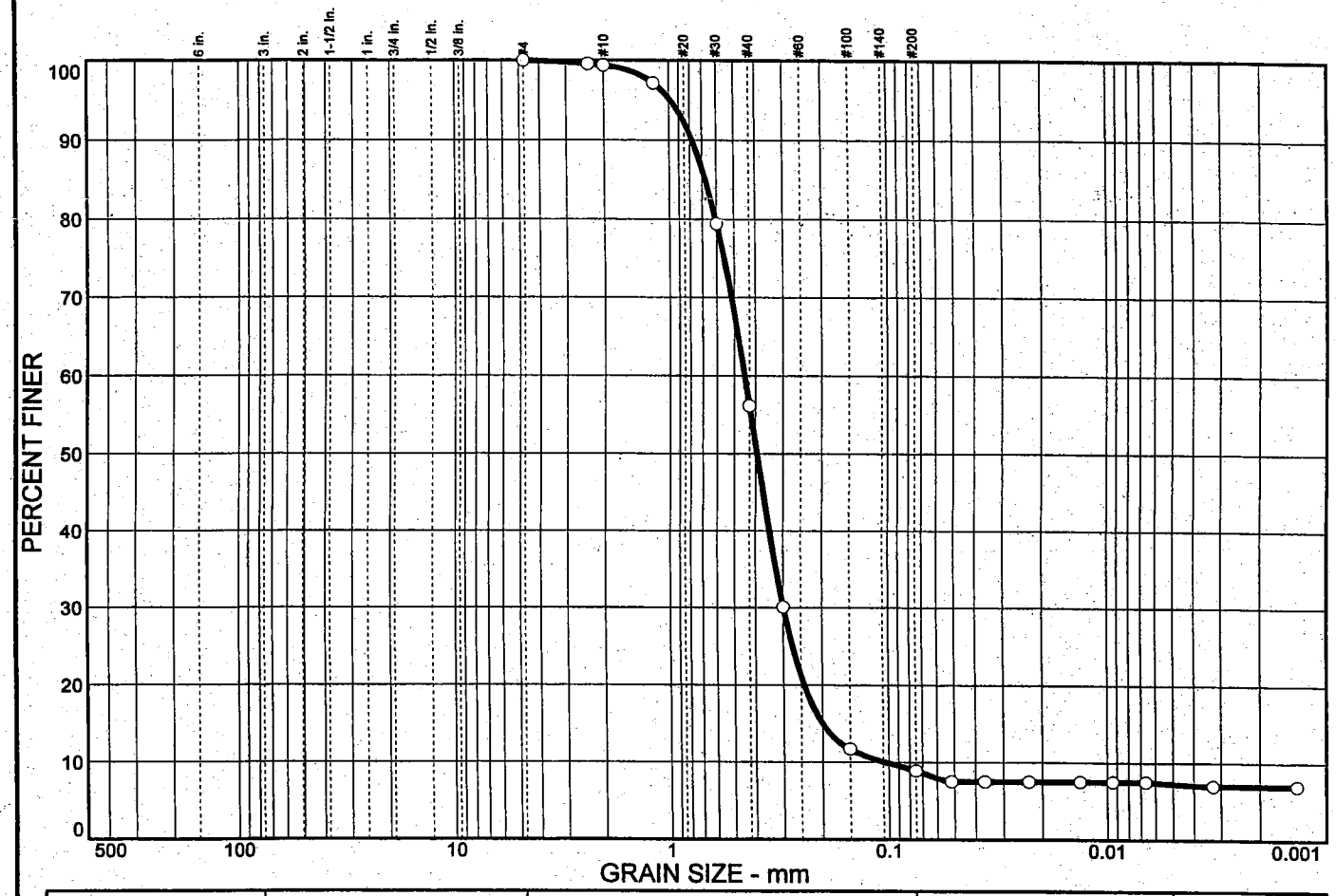
Jar Sample
Specific Gravity - 2.66

Sample No.: #16 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1012 **Elev./Depth:** 78.5'-80.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 22

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	91.1	1.6	7.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#8	99.6		
#10	99.4		
#16	97.2		
#30	79.4		
#40	56.1		
#50	30.1		
#100	11.7		
#200	8.9		

* (no specification provided)

Soil Description

Tan Poorly graded sand with silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.676 D_{60}= 0.447 D_{50}= 0.393
D_{30}= 0.300 D_{15}= 0.200 D_{10}= 0.104
C_u= 4.28 C_c= 1.92

Classification

USCS= SP-SM AASHTO=

Remarks

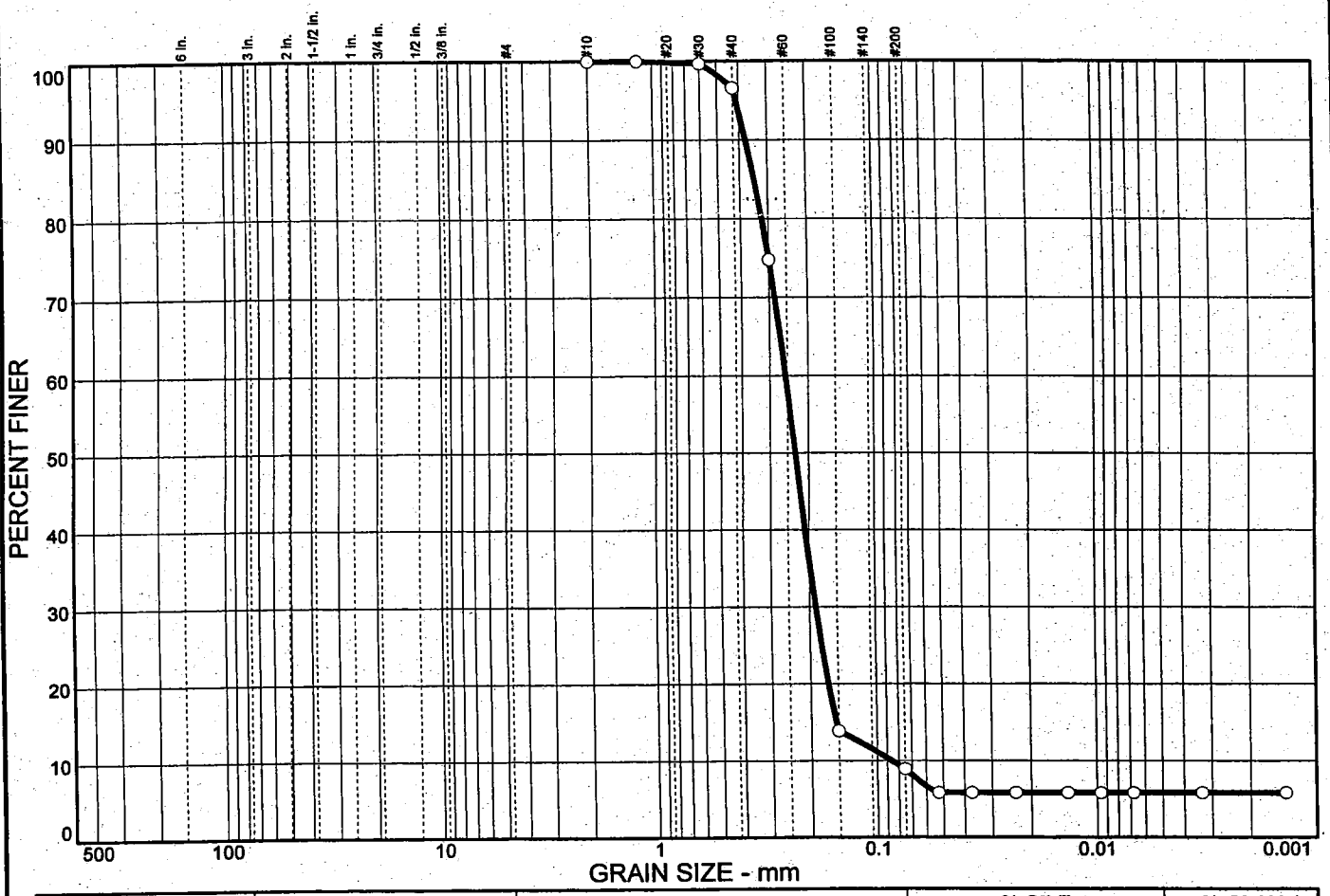
Jar Sample
Specific Gravity - 2.65

Sample No.: #17 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1013 **Elev./Depth:** 84.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: V003-DE **Lab#** 23

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	91.1	3.1	5.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#16	100.0		
#30	99.7		
#40	96.6		
#50	74.8		
#100	13.9		
#200	8.9		

* (no specification provided)

Soil Description

Light Tan Poorly graded sand with silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.346 D_{60}= 0.255 D_{50}= 0.230
D_{30}= 0.187 D_{15}= 0.153 D_{10}= 0.0861
C_u= 2.96 C_c= 1.60

Classification

USCS= SP-SM AASHTO=

Remarks

Jar Sample
Specific Gravity - 2.65

Sample No.: #18 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1013 **Elev./Depth:** 94.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No: 3 V003-DE **Lab#** 24

Particle Size Distribution Report

% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	87.8	5.4	6.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#8	99.7		
#10	99.5		
#16	90.8		
#30	66.5		
#40	53.7		
#50	45.0		
#100	23.2		
#200	12.2		

* (no specification provided)

Soil Description

Gray Silty sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.969 D_{60}= 0.510 D_{50}= 0.369
D_{30}= 0.188 D_{15}= 0.0971 D_{10}= 0.0564
C_u= 9.04 C_c= 1.22

Classification

USCS= SM AASHTO=

Remarks

Bag Sample
Specific Gravity - 2.69

Sample No.: #18 **Source of Sample:** **Date:** 09/24/05
Location: Boring #1014 **Elev./Depth:** 183.5'-185.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No.: 24A224 V003-DE **Lab#** 25

Particle Size Distribution Report

% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	89.6	5.3	5.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#8	100.0		
#10	99.9		
#16	99.8		
#30	99.5		
#40	97.1		
#50	87.0		
#100	42.1		
#200	10.4		

* (no specification provided)

Soil Description

Gray Poorly graded sand with silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.288 D_{60}= 0.194 D_{50}= 0.168
D_{30}= 0.123 D_{15}= 0.0887 D_{10}= 0.0735
C_u= 2.64 C_c= 1.07

Classification

USCS= SP-SM AASHTO=

Remarks

Bag Sample
Specific Gravity - 2.66

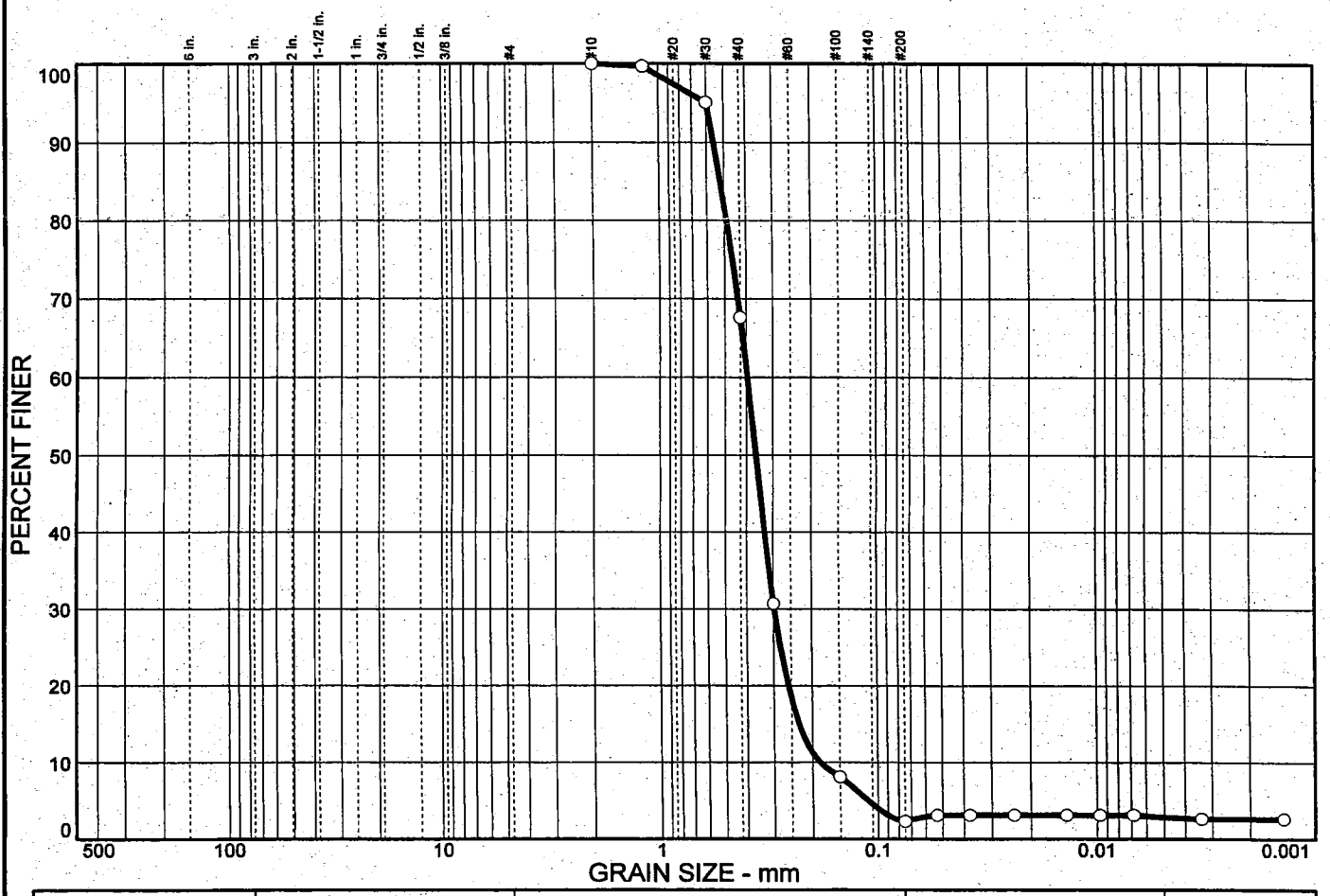
Sample No.: #19 **Source of Sample:** **Date:** 08/24/09
Location: Boring #1014 **Elev./Depth:** 188.5'-190.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP

Project No: V003-DE **Lab#** 26

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	97.7		2.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#16	99.7		
#30	95.1		
#40	67.6		
#50	30.7		
#100	8.1		
#200	2.3		

* (no specification provided)

Soil Description

Very Light Tan Poorly graded sand

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.521 D_{60}= 0.395 D_{50}= 0.362
D_{30}= 0.298 D_{15}= 0.230 D_{10}= 0.184
C_u= 2.15 C_c= 1.22

Classification

USCS= SP AASHTO=

Remarks

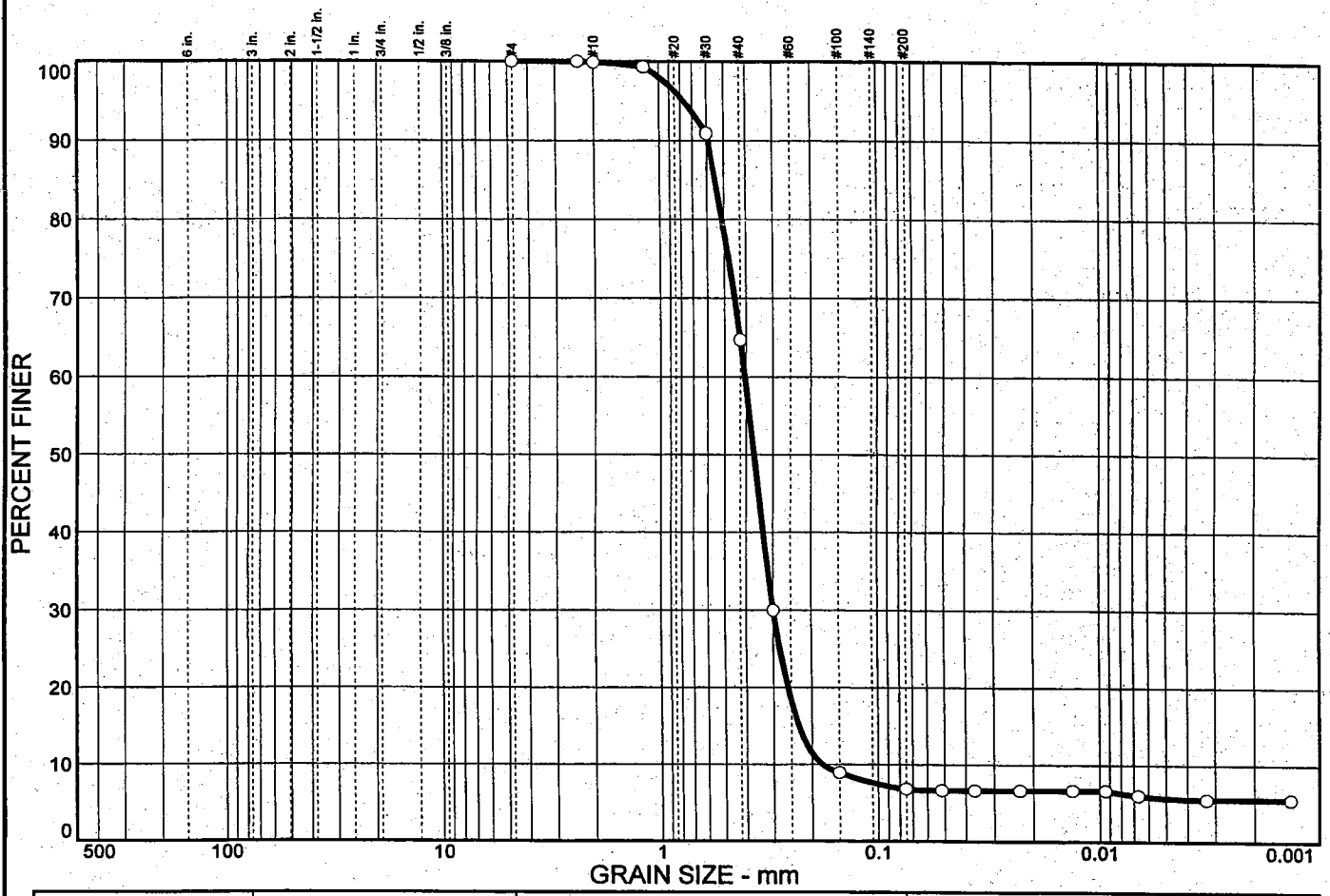
Jar Sample
Specific Gravity - 2.63

Sample No.: #19 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1015 **Elev./Depth:** 93.5'-95.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No.: 6326 V003-DE **Lab#** 27

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	93.2	1.1	5.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#8	100.0		
#10	99.9		
#16	99.3		
#30	90.9		
#40	64.7		
#50	30.0		
#100	8.9		
#200	6.8		

* (no specification provided)

Soil Description

Very Light Tan Poorly graded sand with silt

Atterberg Limits

PL= NA LL= NA PI= NA

Coefficients

D_{85}= 0.549 D_{60}= 0.405 D_{50}= 0.368
D_{30}= 0.300 D_{15}= 0.230 D_{10}= 0.180
C_u= 2.25 C_c= 1.23

Classification

USCS= SP-SM AASHTO=

Remarks

Jar Sample
Specific Gravity - 2.67

Sample No.: #20 **Source of Sample:** **Date:** 08/24/05
Location: Boring #1015 **Elev./Depth:** 93.5'-100.0'

SOUTHERN COMPANY

Client: SCS-Rhonda Tinsley and Steve Bearce
Project: Southern Nuclear/Plant Vogtle ESP
Project No.: V003-DE **Lab#** 28

APPENDIX J

SITE PHOTOS

APPENDIX J

SITE PHOTOS

Intentionally Blank Page