



**SCE+G
COL
Project**

**Attachment B
Boring Logs
Volume 1 of 1**

**Final
Data
Report**

Job No. 6234-06-3534

**MACTEC ENGINEERING
AND CONSULTING, INC.**

December 5, 2006

DCN SC 361 Rev. 1

FINAL REPORT

ATTACHMENT B

Final Geotechnical Boring Logs

1.0 INTRODUCTION

This Attachment is one of a number of attachments that are part of the following report which was prepared by MACTEC Engineering & Consulting Inc.:

Data Report
SCE&G COL Project
V.C. Summer Nuclear Plant
Subsurface Investigation and Laboratory Testing
Bechtel Subcontract No. 25242-102-HC4-CY00-00001
MACTEC Job No. 6234-06-3534

For background and a description of scope of work contained in the report, please refer to the above referenced report. The report was addressed as follows:

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The following list shows other Attachments to the above report and their included information:

Boring and OW Locations See Attachment A

OW Logs, Development Records, Slug and Packer Test Data.....See Attachment C

CPT Logs.....See Attachment D

Geophysical Test Data.....See Attachment E

Laboratory Test Data (Geotechnical).....See Attachment F

Groundwater Test DataSee Attachment G

Kd Laboratory Test DataSee Attachment H

RCTS Test DataSee Attachment I

2.0 DRILLING EQUIPMENT/METHODS

Drilling equipment mobilized to the site included the following:

Serial Marker	Owner	Drill Rig	Driller	SPT	Rock Core Sizes
233517	Gregg	CME75	Burnett	Y	NQ
90117	Trigon	Mobile B57	Toothman	Y	HQ
212393	MACTEC	CME550	Akins	Y	NQ
209195	MACTEC	CME55	Meyerson	Y	NQ
285584	MACTEC	CME45	Gibson/Christian	Y	NQ
190742	Trigon	CME850	Whichard	Y	HQ
311025	Gregg	CME55	Smith, Burnett	Y	HQ,NQ
219907	MACTEC	CME75	Oglesby	Y	NQ
100	MACTEC	Diedrich D50	Skoglund/Cain	Y	NQ
211797	MACTEC	CME75	Christian/Gibson	Y	HQ,NQ
331145	MACTEC	CME55LC	White	Y	HQ,NQ
X020158	Gregg	Fraste	Smith	N	NQ
337153	MACTEC	CME550	Banks	Y	HQ,NQ
N/A	McCall	Ingersol-Rand T3W	Nichols, Sherrill	N/A (Air Rig for OWs)	N/A
N/A	Gregg	20Ton CPT Track-Mounted	Hyer, Aguilar	N/A (CPT Rig)	N/A – CPT
N/A	Gregg	RHINO	Poole	N/A (Auger Rig for OWs)	N/A

In addition, rubber-tired highway-type water tanker trucks were utilized to haul water for the drill rigs from the Parr Reservoir. A Caterpillar D-6 bulldozer was used for the initial access clearing by Little Mountain Construction Co., and a D-4 bulldozer owned by MACTEC was dedicated to the site for additional minor clearing or access assistance to the drills and water trucks, as needed.

Borings for geotechnical purposes were advanced in soil using hollow stem auger (HSA) and mud rotary wash drilling techniques until refusal (defined as the physical inability to advance the hole using wash drilling procedures) was encountered. In some geotechnical borings, the HSA was used in the upper 15 ft or less. Borings for the Relocated Access Road were drilled using the HSA because no rock coring was required and the standard penetration test (SPT) tests relevant to characterizing the conditions for the roadway were above the water table. In geotechnical borings except those in the Relocated Access Road, the drilling method for depths greater than 15 ft was mud rotary. Once refusal was encountered, and if required by the Specification, a steel or PVC casing was set, and the holes were advanced using wire-line rock coring equipment and procedures described in ASTM D 2113. A five-foot or ten-foot long “NQ” or “HQ” core barrel was used for all rock coring.

Fresh water obtained from Parr Reservoir was used for the majority of drilling and coring operations. A minor amount of fresh water was used during the first part of July, 2006 from a well located at the Fairfield Hydro Project. This well was utilized during rainy weather, which limited access to Parr Reservoir.

Exploratory borings for the OW locations were drilled by two methods. The first method was used where the exploratory boring is not for geotechnical engineering information, but serves only to obtain the information necessary for Bechtel to determine the depth for the OW screen. The soil portion of this type of exploratory boring may be drilled with hollow stem augers (HSA) and soil samples were obtained at approximately 5 ft depth intervals using the SPT samples. These soil samples were suitable for laboratory testing but the SPT blow counts will not be used for geotechnical engineering purposes if they were taken below the water table. A one inch diameter PVC pipe (slotted) was placed in the boring as necessary to allow measurement of the water table depth over time for one to several days after the augers were removed. The depth to the water in the temporary PVC pipe was measured until the approximate stabilized water table depth had been evaluated, after which the HSA boring was tremie grouted (using the one-inch PVC pipe as the tremie) and abandoned. If the HSA boring did not encounter the water table, and if requested by Bechtel, a second exploratory boring would be drilled to core into the rock to determine the water table. In this case, a temporary PVC pipe would be installed in the cored hole and monitored to determine the depth to the water table, after which the cored exploratory boring would be grouted and abandoned. The depth for the OW was determined by Bechtel. The OW itself was installed within about 20 ft or less (exact distance to be determined by Bechtel) of the exploratory boring.

The second method of exploratory boring was using mud rotary drilling. This method was used where the boring will be used for geotechnical information. At OW locations, PVC pipe was used as earlier described to keep these boreholes open, as necessary, to allow the water level within the borehole to equalize with the surrounding water table to provide the information necessary to determine the depth for the well screen(s) in the OW.

Following Bechtel's review of the adjacent exploratory borings, observation wells were installed in mud rotary or air rotary drilled holes of appropriate diameter (at least 6 inches) and in accordance with the Specification. The wells consist of PVC screen and riser pipe, sand filter pack, bentonite chips or pellets and cement bentonite grout. Protective steel well covers and concrete pads were placed at the surface. Details of the wells are provided in Attachment C. Only logs for the exploratory borings are included in this Attachment B.

Specific equipment used at each borehole is included on the borehole logs.

All boreholes, the grouted-in PVC casings for geophysical tests and the CPT locations were filled using a cement-bentonite grout prior to demobilizing from the site. The grout was placed by pumping through a tremie pipe. The grout mixture in Specification Section 4.13 (approximately 8 gallons of water and 2.5 pounds of bentonite per 94 pound sack of cement) was used.

3.0 SPT ENERGY MEASUREMENTS

SPT energy measurements were made on the drill rigs performing standard penetration testing (SPT). Energy measurements were recorded during sampling at the depth intervals shown in Table B-1. The length of the drill rod string, including the instrumented drill rod insert for each sample was generally 4 feet longer than the depth of the sample being collected.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK and calibrated accelerometers and strain gages. A section of appropriately sized drill rod, 2 feet long and instrumented with dedicated strain gages, was inserted at the top of the drill rod string immediately below

the SPT automatic hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod.

The work was done in general accordance with ASTM D 4633-05. The strain and acceleration signals were converted to force and velocity by the PDA, and the data was interpreted by the PDA according to the Case Method equation. The EFV method of energy calculation is recommended in ASTM Standard D4633-05. The maximum energy transmitted to the drill rod string (as measured at the location of the strain gages and accelerometers) was calculated by the PDA using the EFV method equation, as shown below:

$$EFV = \int F(t) * V(t) * dt$$

Where: EFV = Transferred energy (EFV equation), or Energy of FV

F(t) = Calculated force at time t

V(t) = Calculated velocity at time t

The EFV method of energy calculation is recommended in ASTM Standard D4633-05. The EFV equation, integrated over the complete wave event, measures the total energy content of the event using both force and velocity measurements. The EFV values associated with each blow analyzed were tabulated and averaged to obtain the average measured energy at each depth tested.

The ratio of the average measured energy to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR.

The ETR range of the automatic hammers used at the site is 72% to 86.5% of the theoretical potential energy. These ETR values are at within the range of typical values for automatic hammers. The ETR values (as percent of the theoretical value) are shown in Table B-1.

4.0 SAMPLING IN GEOTECHNICAL BORINGS

4.1.1 Standard Penetration Test Sampling (SPT)

Soil sampling in the geotechnical borings using the SPT was conducted at intervals ranging from 2.5 feet within the upper 15 feet and thereafter at 5 feet using equipment and methods described in ASTM D 1586. For one boring in each Nuclear Island, the 2.5 ft sample interval was extended throughout the full depth of the soil to accomplish continuous sampling of the soil. Automatic Hammers were used to perform the SPT tests. The sampler was typically driven 18 inches in soil with blows recorded for each six inch interval of penetration. In very hard soils and weathered rock, driving was terminated at 50 blows and the actual penetration recorded, (e.g., 50 blows / 3 inches).

The split tube sampler was opened at the drill site and the recovered materials were visually described and classified by MACTEC's rig geologist or engineer. A selected portion of the sample (typically the material for the lower portion of the sample) was placed in a glass sample jar with a moisture proof lid. Sample jars were labeled, placed in cardboard boxes, and transported to the on-site storage area.

4.1.2 Rock Core Sampling

The technical specifications defined SPT refusal as 50 blows for 6 inches or less of penetration. For purposes of determining the depth at which to begin rock coring procedures, refusal to soil drilling was defined as physical inability to advance the hole using wash drilling procedures. In practice, the SPT sampler was typically struck with 50 blows and the actual penetration measured and recorded on the boring logs. Rock coring was done according to ASTM D 2113. Rock recovered by the coring process was carefully removed from the inner barrel and placed in wooden core boxes with wooden blocks used to mark ends of runs. When core recovery was less than 100%, the rig geologist placed foam, PVC, or wood spacers in the core box to stabilize the core laterally. Filled core boxes were taken to the on-site sample storage facility. Photographs of the cores were taken in the field. Digital (electronic) files containing the core photographs are included in the DVD in this Attachment.

The rig geologist visually described the core and noted the presence of joints and fractures, distinguishing mechanical breaks from natural breaks where possible. The rig geologist also calculated percent recovery and Rock Quality Designation (RQD) prior to moving the core from the drill site. Field boring logs and photographs were used to document the drilling operations and recovered materials, and are retained in the Document Control Center (DCC). The construction of casing for completion of drilling was recorded on the casing installation field log, which is retained in the DCC. In borings to be geophysically logged, PVC casing was grouted in place in lieu of the temporary casing. Grouting was used to abandon all borings except the OWs to be used for groundwater monitoring, and the grouting is recorded on grouting field logs which are retained in the DCC.

4.1.3 Undisturbed Soil Sampling

Undisturbed soil samples were taken when directed by Bechtel, using a 3-inch thin-walled tube sampler in accordance with ASTM D 1587.

When subsurface material was too dense or hard to allow satisfactory samples to be recovered by pressing the tube sampler into the material, a Pitcher sampler was used where requested by Bechtel. The Pitcher is a rotary sampler which drills the 3-inch tube into the subsurface material. All undisturbed samples were sealed at the top and bottom against moisture loss, labeled, kept in an upright condition and transported to the climate-controlled on-site storage area in accordance with ASTM D4220.

5.0 **BORING LOGS**

The soil description on the boring logs in this Attachment are based on the field descriptions (ASTM D 2488) by the rig geologist or engineer, modified according to ASTM D 2487 where lab test results are available. The rock core descriptions are based on the rig geologist's or rig engineer's description. The water depths on these boring logs are from observations during drilling. Because water was introduced during rotary and core drilling, the water depths on the boring logs may not represent the stabilized water depths. For stabilized water depths, the information in Attachment C, Table C-7 should be consulted. The stabilized water depth at individual boring locations could be estimated by interpolation between the depths or elevations of stabilized water at the observation well locations in Attachment C, Table C-7. The boring logs in this Attachment were prepared using the computer program "gINT" (Version 7). Electronic files with gINT data were provided to Bechtel.

6.0 SAMPLING IN GEOTECHNICAL TEST PITS

Test pits were excavated at four locations identified by Bechtel (field-located). A Caterpillar Model 416 rubber-tired backhoe from Little Mountain Construction Co. was used to excavate and then to backfill the shallow test pits for soil sampling purposes. The Bechtel field representative selected the materials to be sampled. A MACTEC rig geologist collected the bulk samples. As approved by Bechtel, the bulk samples were placed in new 5-gallon plastic buckets with handles for carrying. Two buckets of each sampled material were obtained. Glass jar samples were obtained and sealed for moisture retention. The backhoe was used to backfill the test excavation using the excavated materials. The backfilled materials were tamped in-place using the backhoe. The rig geologist placed a stake for later survey location which is provided in Attachment A.

The buckets and jar samples were labeled and transported to the on-site storage area. The rig geologist prepared a Geotechnical Test Pit Log based on visual description of the excavated materials according to ASTM D 2488. The Geotechnical Test Pit Logs are included in this Attachment. The surveyed locations of the test pits are contained in Attachment A. Additionally, the Martin Marietta North Columbia Quarry was visited and two samples of crusher screenings were obtained from two stockpiles at the quarry, one "washed" and the other "unwashed" screenings.

TABLE B-1: SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)

VC Summer COL Site

Jenksville, South Carolina

MACTEC Project No. 6234-06-3435S

Date Revised: November 21, 2006

Prepared By: *SC* 11-21-06 Checked By: *CES* 11-21-06

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (ft-lbs) ^a	Energy Transfer Ratio (%) ^b
90117 (Mobile B57 Truck)	Trigon (Greensboro Office)	R. Toothman	B-305	4/28/2006	11.0 - 12.5	4 - 6 - 9	17	303	86.6%
					13.5 - 15.0	3 - 6 - 8	17	298	85.1%
					18.5 - 20.0	3 - 7 - 8	17	301	86.0%
					23.5 - 25.0	3 - 6 - 9	15	306	87.4%
					28.5 - 30.0	4 - 6 - 8	17	306	87.4%
Total Average for Rig:								302.7	86.5%
100 (D-50 ATV)	MACTEC (Charlotte Office)	Gary Skoglund	B-220	5/10/2006 to 5/11/2006	11.0 - 12.5	10 - 13 - 17	38	253	72.3%
					41.0 - 42.5	8 - 9 - 13	30	248	70.9%
					43.5 - 45.0	9 - 11 - 14	35	261	74.6%
					48.5 - 50.0	7 - 9 - 15	31	267	76.3%
Total Average for Rig:								257.2	73.5%
285584 (CME 45 Track)	MACTEC (Abingdon Office)	Wayne Gibson	B-326	5/11/2006	18.5 - 20.0	3 - 4 - 6	13	247	70.6%
					23.5 - 25.0	4 - 3 - 6	13	251	71.7%
					28.5 - 30.0	3 - 3 - 4	10	260	74.3%
Total Average for Rig:								252.1	72.0%
219907 (CME 75 Truck)	MACTEC (Atlanta Office)	J. Oglesby	B-317A	6/6/2006	13.5 - 15.0	5 - 14 - 37	56	255	72.9%
					18.5 - 20.0	8 - 20 - 21	49	283	80.9%
					22.0 - 23.5	39 - 50/3"	90	274	78.3%
Total Average for Rig:								270.8	77.4%

TABLE B-1: SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)

VC Summer COL Site

Jenkinsville, South Carolina

MACTEC Project No. 6234-06-3435S

Date Revised: November 21, 2006

Prepared By: *AL 11-21-06* Checked By: *CES 11-21-06*

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (ft-lbs) ^a	Energy Transfer Ratio (%) ^b
331145 (CME 55LC Truck)	MACTEC (Raleigh Office)	David White	B-304	6/5/2006	11.0 - 12.5	4 - 5 - 7	16	293	83.7%
					13.5 - 15.0	4 - 6 - 8	18	290	82.9%
					18.5 - 20.0	4 - 6 - 7	17	288	82.3%
					23.5 - 25.0	5 - 7 - 10	22	287	82.0%
					28.5 - 30.0	5 - 7 - 7	19	291	83.1%
Total Average for Rig:								289.6	82.8%
233517 (CME 75 Truck)	Gregg Drilling	M. Burnett	B-313A	8/5/2006	13.5 - 15.0	4 - 6 - 7	18	283	80.9%
					18.5 - 20.0	5 - 5 - 7	17	279	79.7%
					23.5 - 25.0	4 - 6 - 7	17	287	82.0%
					28.5 - 30.0	6 - 7 - 9	22	284	81.1%
					33.5 - 35.0	5 - 7 - 9	21	292	83.4%
Total Average for Rig:								285.2	81.5%
211797 (CME 75 Truck)	MACTEC (Abingdon Office)	Wayne Gibson	B-403	8/5/2006	8.5 - 10.0	2 - 3 - 7	10	253	72.3%
					13.5 - 15.0	6 - 7 - 14	23	287	82.0%
					18.5 - 20.0	W.O.H. - 6 - 13	20	262	74.9%
					23.5 - 25.0	3 - 5 - 10	18	262	74.9%
Total Average for Rig:								268.8	76.8%
311025 (CME 55 Truck)	Gregg Drilling	M. Burnett	B-301	5/26/2006	13.5 - 15.0	7 - 7 - 9	24	280	80.0%
					18.5 - 20.0	8 - 7 - 12	28	289	82.6%
					23.5 - 25.0	7 - 8 - 11	27	292	83.4%
					28.5 - 30.0	7 - 7 - 12	28	292	83.4%
					33.5 - 35.0	7 - 9 - 13	30	288	82.3%
Total Average for Rig:								288.4	82.4%

TABLE B-1: SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)

VC Summer COL Site

Jenkinsville, South Carolina

MACTEC Project No. 6234-06-3435S

Date Revised: November 21, 2006

Prepared By: *QU 11-21-06* Checked By: *CES 11-21-06*

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (ft-lbs) ^a	Energy Transfer Ratio (%) ^b
209195 (CME 55 Truck)	MACTEC (Ashburn Office)	Hank Meyerson	B-323	4/28/2006	11.0 - 12.5	2 - 4 - 6	13	260	74.3%
					13.5 - 15.0	3 - 5 - 6	14	256	73.1%
					18.5 - 20.0	3 - 4 - 6	12	259	74.0%
					23.5 - 25.0	4 - 4 - 6	14	255	72.9%
					28.5 - 30.0	4 - 4 - 5	13	263	75.1%
					33.5 - 35.0	10 - 15 - 10	31	273	78.0%
Total Average for Rig:								263.1	75.2%
190742 (CME 850 Track) ^c	Trigon (Greensboro Office)	Willie Dougghins	B-1030	4/11/2006	13.5 - 15.0	4 - 6 - 7	18	278	79.4%
					18.5 - 20.0	5 - 8 - 9	23	289	82.6%
					23.5 - 25.0	5 - 6 - 9	22	293	83.7%
					28.5 - 30.0	5 - 6 - 6	18	294	84.0%
					33.5 - 35.0	4 - 6 - 8	19	293	83.7%
					38.5 - 40.0	4 - 13 - 11	29	279	79.7%
Total Average for Rig:								287.2	82.1%
337153 (CME 550x) ^c	MACTEC (Atlanta Office)	Robert Banks	B-1023	4/10/2006	13.5 - 15.0	4 - 9 - 10	23	260.0	74.3%
					18.5 - 20.0	7 - 11 - 11	28	273.0	78.0%
					23.5 - 25.0	11 - 11 - 26	48	278.0	79.4%
					27.0 - 28.5	50 / 2"	39	277.0	79.1%
Total Average for Rig:								273.7	78.2%

TABLE B-1: SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)

VC Summer COL Site

Jenkinsville, South Carolina

MACTEC Project No. 6234-06-3435S

Date Revised: November 21, 2006

Prepared By: 11-21-06 BL Checked By: CES 11-21-06

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (ft-lbs) ^a	Energy Transfer Ratio (%) ^b
212393 (CME 55 ATV) ^d	MACTEC (Knoxville Office)	George Akins	B-7	11/20/2006	13.5 - 15.0	11 - 7 - 12	26	262	74.9%
					18.5 - 20.0	9 - 6 - 11	17	280	80.0%
					23.5 - 25.0	12 - 14 - 12	41	270	77.1%
					28.5 - 30.0	9 - 10 - 12	32	267	76.3%
					33.5 - 35.0	4 - 50/2"	44	266	76.0%
Total Average for Rig:								268.1	76.6%

^aMeasured Energy is energy based on the EFV method, as outlined in ASTM D4633-05, for each blow recorded by the PDA. In some cases, the initial one to two blows produced poor quality data, and was not used to calculate the Average Measured Energy.

^bEnergy Transfer Ratio is the Measured Energy divided by the theoretical SPT energy of 350 foot-pounds (140 pound hammer falling 2.5 feet).

^cRig was tested at the Cherokee COL site in Gaffney, South Carolina

^dRig was tested on Boring B-7 at the Fairfield Resort site in Sevierville, Tennessee

Project Name : Job Number MACTEC		SOIL LOG - Boring No. B-201	
SCE&G COL : 6234-06-3534			
Type and Diameter of Boring Mud Rotary / 4 inch/HQ		Boring Location Nuclear Island	Total Depth 350 feet
Drilling Contractor and Rig Gregg/Smith/311025 / CME 55		Elevation at Boring 423.7 feet	Ground Water Depth 62 feet
Sampling Method Split Spoon		Sample Driving Hammer/Drop 140 lbs / 30 inches	No. of Samples 14
		Borehole Inclination 0	Logged by J. Harmon
		Reviewed by / Date M. Cooke 5/29/06	Date Started 5/11/06
		Reviewed by / Date <i>Clay E. Harmon 11/30/06</i>	Date Completed 5/25/06

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
0											
1	SPT 1	39	10	18	●				CL-ML	CLAY silty (CL-ML); red (2.5 YR 4/8); damp, stiff; fine sand ~5% mica; large rock fragments (quartz diorite); small roots. RESIDUUM	Residual
2	SPT 2	10/11	10	18	●	●	●		SM	SAND silty (SM); red (2.5 YR 4/8); moist, medium dense, 43% fines, micaceous RESIDUUM	
3											
4	SPT 3	5/8	5	18							
5											
6											
7	SPT 4	8/12	8	18						SAA; 42% fines	
8											
9	SPT 5	5/8	5	18						SAND silty (SM); yellowish red (5 YR 4/6); moist, medium dense, micaceous RESIDUUM	
10											
11	SPT 6	7/9	7	18	●	●				SAA; 33% fines; medium dense	
12											
13											
14	SPT 7	4/8	4	18	●	●	●			SAA; 37% fines; medium dense	
15											
16											
17											
18											
19	SPT 8	5/3	5	18	●	●			SM	SAND silty (SM), strong brown (7.5 YR 5/8), moist, medium dense, 32% fines, low plasticity, micaceous. SAPROLITE	Saprolite
20											
21											
22											
23											
24	SPT 9	4/6	4	18	●					SAND silty (SM); strong brown (7.5 YR 5/8); moist, loose, low plasticity, micaceous. SAPROLITE	
25											
26											
27											
28											
29	SPT 10	5/3	5	18	●	●	●			SAND silty (SM); strong brown (7.5 YR 4/8); moist, loose, 38% fines; micaceous. SAPROLITE	
30											
31											
32											
33									SW-SM	SAND with silt (SW-SM); white, strong brown, gray (7.5 YR 5/8, 5/1, Gley 1 8/N); moist, very dense, 8% fines, 4% gravel, low plasticity, micaceous weathered Granodiorite? quartz, biotite, small quartz fragments. SAPROLITE	
34	SPT 11	4/26/39	4	18	●	●					
35											
36											
37											
38											
39	SPT 12	50/4	50	4					GM		Spoon refusal at 38.8 ft. Top of partially weathered rock
40											

Project Name : Job Number



SOIL LOG - Boring No. B-201

SCE&G COL : 6234-06-3534

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
40											
41											
42											
43									SM		
44	SPT 13		6 7 11	14 18	●	●				GRAVEL silty (GM), white, strong brown, gray, black (7.5 YR 5/8, 5/1, Gray 1 8/N, 2.5 /N), wet, very dense, weathered granodiorite, fine to coarse grained, sand ~70%, quartz, biotite, feldspar. PARTIALLY WEATHERED ROCK <i>(Continued from previous page)</i>	
45											
46										SAND silty (SM), white, strong brown, gray, black (7.5 YR 5/8, 5/1, Gley 1 8/N, 2.5/N); wet, very dense, weathered granodiorite, 21% fines; quartz, biotite, feldspar. PARTIALLY WEATHERED ROCK	
47											
48											
49	SPT 14		7 9 50/6	13 18	●	●				SAA; moist, very dense, fine to coarse grained, 23% fines; weathered granodiorite, low plasticity, quartz biotite. PARTIALLY WEATHERED ROCK	
50											Tricone refusal at 50 ft. Switch to HQ coring
51											
52											
53											
54											
55											
56											
57											
58											
59											
60											
61											
62											
63											
64											
65											
66											
67											
68											
69											
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BORING TERMINATED AT 50.0 ft.

Project Name : Job Number MACTEC		ROCK LOG - Boring No. B-201	
SCE&G COL : 6234-06-3534			
Type and Diameter of Boring Mud Rotary / 4 inch/HQ		Boring Location Nuclear Island	Total Depth 350 feet
Drilling Contractor and Rig Gregg/Smith/311025 / CME 55		Elevation at Boring 423.7 feet	Ground Water Depth 62 feet
Casing Size and Depth 4 / 50 feet		Length of Core Barrel and Bit 8.5 feet	No. of Core Boxes 24
		Borehole Inclination 0	Logged by J. Harmon
			Date Started 5/11/06
			Date Completed 5/25/06

Reviewed by / Date M. Cooke 5/29/06

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
50				MW				
51	1	4.2 / 4.3	85	SW	R4 to R5		GRANODIORITE; white, very dark gray (Gley 1 8/N, 3/N); fine to coarse grained; igneous texture; quartz, feldspar, biotite, schist.	5/13/06 Boring wash drilled to 50 ft. 4 inch casing set and grouted. Groundwater level not checked due to grout in casing. Top of moderately weathered rock at 50.25 ft.
52								
53								
54								
55								
56	2	5.0 / 5.0	100	F	R5			
57								
58								
59								
60								
61	3	4.3 / 5.0	74	MW	R4 to R5		60.6 to 61.2 ft. Weathered zone	Lost circulation
62							62 to 63 ft. Schist zone	Top of sound rock
63								End of 5/13/06
64								Start of 5/14/06
65								Groundwater at 63 ft.
66								
67	4	5.0 / 5.0	90	SW to F	R4 to R5		66.8 to 67 ft. Weathered zone	
68								
69								
70								
71	5	5.0 / 5.0	94	F	R4 to R5			
72								
73								
74								
75								
76	6	5.0 / 5.0	84	F	R4 to R5		Igneous dike, K-spar, quartz, feldspar? Aplite dike, fine grained.	
77								
78								
79								
80								
81	7	5.0 / 5.0	100	F	R5			
82								
83								
84								
85								End of 5/14/06 water level at 0 ft.
86	8	4.5 / 5.0	78	F	R5		Quartz/feldspar dike at 86 ft.	Start of 5/15/06, water level at 68 ft.
87								
88								
89								
90								

Project Name : Job Number <div style="text-align: center;"> MACTEC </div> SCE&G COL : 6234-06-3534	<h2 style="margin: 0;">ROCK LOG - Boring No. B-201</h2>
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Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
90								
91	9	4.8 5.0	78	MW	R4			
92								
93								
94								
95								
96	10	4.4 5.0	76	MW	R3 to R4		95.4 to 95.6 ft weathered zone	
97								
98							QUARTZ DIORITE; very dark gray and white (Gley 1 8/N, 3/N); fine to medium grained; foliation at 45°; igneous/gneissic texture, quartz biotite, feldspar, homblende.	
99								
100							98 to 98.4 weathered zone	
101	11	5.0 5.0	100	F	R4		QUARTZ DIORITE; light gray, very dark gray and white (Gley 1 8/N, 7/N, 3/N); fine to medium grained; igneous texture, quartz biotite, feldspar, schist.	
102								
103								
104								
105								
106								
107	12	5.0 5.0	98	F	R4		Pegmatite dike, quartz, feldspar	
108							107.8 to 108.2 ft weathered zone	
109								
110								
111							Aplite dike	
112	13	5.0 5.0	92	F	R4		GRANODIORITE; white and very dark gray (Gley 1 8/N, 3/N); fine to coarse grained, igneous texture, quartz, feldspar, biotite, schist	
113								
114								
115								
116								
117	14	5.0 5.0	84	F	R4			
118								
119							Aplite dike Aplite dike	
120								End of 5/15/06, water level at 10 ft.
121								Start 5.16/06, water level at 72 ft.
122	15	5.0 5.0	98	F	R4		Aplite dike; pale red (10 YR 7/2), fine grained QUARTZ DIORITE; light gray, very dark gray and white (Gley 1 8/N, 7/N, 3/N); fine to medium grained	
123								
124							Schist (Migmatite?) 122.5 to 123 ft.	
125								
126							QUARTZ DIORITE; light gray, very dark gray and white (Gley 1 8/N, 7/N, 3/N); fine to medium grained; igneous texture; biotite, quartz	
127	16	5.0 5.0	100	F	R4			
128								
129								
130								

Project Name : Job Number



SCE&G COL : 6234-06-3534

ROCK LOG - Boring No. B-201

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
130								
131								
132	17	5.0 5.0	100	F	R4			
133								
134								
135								
136								
137	18	5.0 5.0	100	F	R4			
138								
139								
140								
141								
142	19	5.0 5.0	100	F	R4			
143								
144								
145								
146								
147	20	5.0 5.0	100	F	R4			
148								
149								
150								
151								
152	21	5.0 5.0	100	F	R4			
153								
154								
155								
156								
157	22	5.0 5.0	100	F	R4			
158								
159								
160								
161								
162	23	5.0 5.0	88	F	R4			
163								
164								
165								
166								
167	24	5.0 5.0	98	F	R4			
168								
169								
170							QUARTZ DIORITE; light gray, very dark gray, black	

Project Name : Job Number MACTEC SCE&G COL : 6234-06-3534	ROCK LOG - Boring No. B-201
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Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
170							(Gley 1 8/N, 7/N, 2.5/N); fine to medium grained; igneous texture; quartz, biotite.	
171	25	5.0 5.0	96	F	R4			
172								
173								
174								
175								
176	26	5.2 5.2	96	F	R3 to R4			
177								
178								
179								
180							End of 5/16/06, water level at 5 ft. Start of 5/17/06, water level at 68 ft.	
181	27	5.2 5.2	100	F	R3 to R4			
182								
183								
184								
185								
186	28	5.0 5.0	92	F	R3 to R4			
187								
188								
189								
190						SAA, Hornblende	End of 5/17/06, water level at 5 ft. Start of 5/22/06, water level at 66 ft.	
191	29	5.0 5.0	100	F				
192								
193								
194					R3 to R4			
195								
196	30	5.0 5.0	92	F				
197								
198								
199								
200							Quartz dike	
201	31	5.0 5.0	100	F	R3			
202								
203								
204								
205								
206	32	5.0 5.0	100	F	R3			
207								
208								
209								
210								

Project Name : Job Number



SCE&G COL : 6234-06-3534

ROCK LOG - Boring No. B-201

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
210								
211								
212	33	5.0 / 5.0	99	F	R3			
213								
214								
215							QUARTZ DIORITE; light gray, very dark gray, black (Gley 1 8/N, 7/N, 2.5/N); fine to medium grained; igneous texture; quartz, biotite.	
216								
217	34	5.0 / 5.0	100	F	R3			
218								
219								
220								
221								
222	35	5.0 / 5.0	98	F	R3			
223								
224								
225								
226								
227	36	5.0 / 5.0	99	F	R3			
228								
229								
230							QUARTZ DIORITE; light gray, very dark gray, black (Gley 1 8/N, 7/N, 2.5/N); fine to medium grained; igneous texture; quartz, biotite, hornblende.	End of 5/22/06, water level at 20 ft
231								Start of 5/23/06 water level at 59 ft.
232	37	5.0 / 5.0	99	F	R3 to R4		Quartz/Aplite dike	
233								
234								
235								
236								
237	38	5.0 / 5.0	94	F	R3 to R4		Quartz/Aplite dike	
238							Quartz/Aplite dike	
239							Quartz/Aplite dike	
240								
241								
242	39	5.0 / 5.0	100	F	R3 to R4			
243								
244								
245							Quartz/Aplite dike	
246								
247	40	5.0 / 5.0	98	F	R4		Quartz/Aplite dike	
248								
249								
250								

Project Name : Job Number



SCE&G COL : 6234-06-3534

ROCK LOG - Boring No. B-201

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Lithology	Remarks
250									
251									
252	41	5.0 / 5.0	100	F	R4				
253									
254									
255									
256									
257	42	5.0 / 5.0	98	F	R4				
258									
259									
260									
261									
262	43	5.0 / 5.0	94	F	R4				
263									
264									
265									
266									
267	44	5.0 / 5.0	94	F	R4				
268									
269									
270									
271									
272	45	5.0 / 5.0	100	F	R4 to R5				
273									
274									
275									
276									
277	46	5.0 / 5.0	100	F	R4 to R5				
278									
279									
280									
281									
282	47	5.0 / 5.0	100	F	R4 to R5				
283									
284									
285									
286									
287	48	5.0 / 5.0	100	F	R4 to R5				
288									
289									
290									

QUARTZ DIORITE; light gray, very dark gray, black, greenish gray (Gley 1 8/N, 7/N, 2.5/N, 6/5 GY); fine to coarse grained; igneous texture; quartz, biotite, hornblende, random quartz/aplite dikes

Project Name : Job Number MACTEC SCE&G COL : 6234-06-3534	ROCK LOG - Boring No. B-201
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Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
290								
291								
292	49	5.0 / 5.0	94	F	R4 to R5			
293								
294								
295								
296								
297	50	5.0 / 5.0	100	F	R4 to R5			
298								
299								
300								
301								
302	51	5.0 / 5.0	100	F	R4 to R5		Pegmatite dike; quartz and feldspar	
303								
304								
305								
306								
307	52	5.0 / 5.0	99	F	R4 to R5			
308								
309								
310								
311								
312	53	5.0 / 5.0	100	F	R4 to R5			
313								
314								
315								
316								
317	54	5.0 / 5.0	94	F	R4 to R5			
318								
319								
320								
321								
322	55	5.0 / 5.0	100	F	R4 to R5			
323								
324								
325								
326								
327	56	5.0 / 5.0	100	F	R4 to R5			
328								
329								
330							GRANODIORITE, white and very dark gray (Gley 1	

Project Name : Job Number



SCE&G COL : 6234-06-3534

ROCK LOG - Boring No. B-201

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
330							8/N, 3/N); fine to coarse grained; igneous texture.	
331							SAA, GRANODIORITE	
332	57	5.0 5.0	94	F	R4 to R5		BIOTITE GNEISS; white, very dark gray, dark greenish gray (Gley 1 8/N, 3/N, 4/5 GY), foliation at 30°, fine to medium grained, gneissic texture; biotite, schist, quartz, hornblende, feldspar	
333							SAA, GRANODIORITE	
334							BIOTITE GNEISS; white, very dark gray, dark greenish gray (Gley 1 8/N, 3/N, 4/5 GY), foliation at 15°, fine grained, gneissic texture	
335								
336								
337	58	5.0 5.0	92	F	R5			
338								
339								
340							SAA, with migmatite mixture of granodiorite, schist and biotite gneiss, mixture of banded and igneous texture, fine to medium grained	End of 5/24/06, water level at 30 ft
341								Start of 5/25/06, water level at 62 ft.
342	59	5.4 5.4	100	F	R5			
343								
344							Xenoliths of Schist	
345								
346							MIGMATITE; white and very dark gray (Gley 1 8/N, 3/N), fine to medium grained, xenoliths of schist, flow banded texture; some granodiorite	
347								
348	60	5.0 5.0	96	F	R5			
349							BIOTITE GNEISS; white, dark gray; greenish gray (Gley 1 8/N, 3/N, 4/5 GY); fine to medium grained; foliation at 30°; gneissic texture; quartz, biotite, hornblende.	
350								
351								End of drilling 5/25/06
352							CORING TERMINATED AT 350.0 ft.	Coring terminated
353								
354								
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370								

Project Name : Job Number 	<h2 style="margin: 0;">SOIL LOG - Boring No. B-201UDP</h2>
SCE&G COL : 6234-06-3534	

Type and Diameter of Boring Mud Rotary / 6 inch	Boring Location Nuclear Island	Total Depth 47 feet
Drilling Contractor and Rig MACTEC/Oglesby/219907 / CME 75	Elevation at Boring 423.8 feet	Ground Water Depth Depth to Bedrock
Sampling Method UD	Sample Driving Hammer/Drop Pitcher sampler / NA	No. of Samples 2
	Borehole Inclination 0	Logged by C. Gandy
	Date Started 8/15/06	Date Completed 8/15/06

Reviewed by / Date M. Cooke 8/20/06
 Reviewed by / Date *Cly Gandy 12/1/06*

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
0										Drilled without SPT sampling to obtain Pitcher barrel undisturbed samples	
1											
2											
3											
4											
5											
6											
7											
8											
9											
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32											
33											
34		UDP		10						SILT clayey (ML); brown (7.5 YR 5/4); moist; 100% silt; medium plasticity; top of Pitcher UD sample	Adjacent Boring B-201 encountered SAND with silt (SW-SM) within this depth lateral
35		1		24							
36										SILT sandy (ML); medium to coarse grained; PARTIALLY WEATHERED ROCK; bottom of Pitcher UD sample	
37											
38											
39											
40											

Project Name : Job Number 	SOIL LOG - Boring No. B-201UDP
SCE&G COL : 6234-06-3534	

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
40											
41										Drilled without SPT sampling to obtain Pitcher barrel undisturbed samples (Continued from previous page)	
42											
43											
44											
45											
46		UDP 2		ig 24						SILT sandy (ML) brown (7.5 YR 5/4); moist; low plasticity; micaceous; 90% silt; 10% sand; top of Pitcher UD sample	Adjacent boring B-201 encountered SAND silty (SM) having 21% to 23% fines within this depth interval
47											
48										SILT sandy (ML) brown (7.5 YR 5/4); moist; low plasticity; micaceous; 90% silt; 10% sand; bottom of Pitcher UD sample	
49											
50											
51											
52											
53											
54											
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56											
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80											

Project Name : Job Number MACTEC		SOIL LOG - Boring No. B-202	
SCE&G COL : 6234-06-3534			
Type and Diameter of Boring Mud Rotary / 5 7/8 inch/HQ		Boring Location Nuclear Island	Total Depth 175.5 feet
Drilling Contractor and Rig MACTEC/Banks/337153 / CME550		Elevation at Boring 423.9 feet	Ground Water Depth 55 feet
Sampling Method Standard		Sample Driving Hammer/Drop 140 lbs / 30 inches	No. of Samples 13
		Borehole Inclination 0	Logged by J. Liles
			Date Started 6/25/06
			Date Completed 7/6/06

Reviewed by / Date M. Cooke 7/13/06
 Reviewed by / Date *Clay Liles 12/1/06*

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
0									ML	SILT sandy (ML); dark red (2.5 YR 3/6); damp to moist; soft; fine sand; non plastic; trace mica	Residuum
1	SPT 1	1	17	18					ML	SAA; stiff; RESIDUUM	
2	SPT 2	2	17	18					ML	SAA; red (2.5 YR 4/8); medium stiff	
3									ML	SAA; slightly micaceous	
4	SPT 3	3	14	18					ML	SILT sandy (ML); strong brown (7.5 YR 5/8); damp to moist; stiff; fine sand; non plastic; trace mica; SAPROLITE	First saprolitic sample
5									ML	SAA; mottled with white and red; slightly micaceous	
6	SPT 4	4	14	18					ML	SAA; dark red (2.5 YR 3/6); micaceous; RESIDUUM	No saprolitic structure
7									ML	SILT sandy (ML); strong brown (7.5 YR 4/6); moist; stiff; fine to medium sand; non plastic; micaceous; SAPROLITE	Saprolitic
8	SPT 5	5	16	18					ML	SAA; mottled with black and white; SAPROLITE	
9									ML	SILT sandy (ML); dark grayish brown (2.5 Y 4/2); moist; very stiff; fine to medium sand; non plastic; slightly micaceous; SAPROLITE	
10	SPT 6	6	14	18					ML	SAA; fine to coarse grained; mottled with black and white	
11									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
12	SPT 7	7	12	18					ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
13									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
14									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
15									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
16									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
17									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
18	SPT 8	8	14	18					ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
19									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
20									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
21									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
22									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
23									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
24	SPT 9	9	12	18					ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
25									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
26									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
27									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
28									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
29	SPT 10	10	11	18					ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
30									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
31									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
32									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
33	SPT 11	11	14	18					ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
34									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
35									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
36									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
37									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
38									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
39	SPT 12	12	14	18					ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	
40									ML	SILT sandy (ML); dark red (2.5 YR 3/6); micaceous; RESIDUUM	

Project Name : Job Number MACTEC SCE&G COL : 6234-06-3534	SOIL LOG - Boring No. B-202
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Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
40											
41										SAA; fine to coarse grained; mottled with black and white (Continued from previous page)	
42											
43											
44		SPT 13	2 7	13 18							
45										SAA; hard; PARTIALLY WEATHERED ROCK BORING TERMINATED AT 46.0 ft, see rock log	
46		SPT 14	50/2	1 2							
47											
48											
49											
50											
51											
52											
53											
54											
55											
56											
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80											

Project Name : Job Number		MACTEC		ROCK LOG - Boring No. B-202	
SCE&G COL : 6234-06-3534					
Type and Diameter of Boring Mud Rotary / 5 7/8 inch/HQ			Boring Location Nuclear Island		Total Depth 175.5 feet
Drilling Contractor and Rig MACTEC/Banks/337153 / CME550			Elevation at Boring 423.9 feet	Ground Water Depth 55 feet	Depth to Bedrock 46 feet
Casing Size and Depth 4 / 46 feet			Length of Core Barrel and Bit 13.5 feet	No. of Core Boxes 10	Date Started 6/25/06
			Borehole Inclination 0	Logged by J. Liles	Date Completed 7/6/06

Reviewed by / Date M. Cooke 7/13/06

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Lithology	Remarks
46								GRANODIORITE; migmatite; black; fine to medium grained; very intensely fractured; with staining weak; trace of pyrite	Partially weathered rock. Bit refusal at 46.0 ft. SPT refusal Begin day 6/26/06 water at 36 ft
47	1	$\frac{2.0}{2.5}$	0	MW to SW	R2			SAA; intensely to moderately fractured; very weak with a zone of fresh rock	
48				HW to MW	R1				
49				SW	R3				
50	2	$\frac{4.7}{5.0}$	48	HW	R1				
51									
52									
53									
54				F	R4				
55								∇	
56	3	$\frac{4.1}{5.0}$	32						100% water loss
57									
58									
59				HW	R1				
60									
61	4	$\frac{5.0}{5.0}$	12						
62									
63									
64								GRANODIORITE; black and white; medium to coarse grained; slightly fractured; with some staining; with quartz, K-feldspar, hornblende, and biotite	Top of sound rock
65	5	$\frac{4.4}{5.0}$	96	F	R4				
66									
67									
68									
69									
70									
71	6	$\frac{5.0}{5.0}$	100	F	R4				
72									
73									
74									
75									
76	7	$\frac{5.0}{5.0}$	100	F	R4				
77									
78									
79								SAA; with a small xenolith of black, fine grained amphibolite schist	
80									
81	8	$\frac{5.0}{5.0}$	94	F	R4				
82									
83									
84									
85									
86		4.3							

Project Name : Job Number <div style="text-align: center;"></div> SCE&G COL : 6234-06-3534	<h2 style="margin: 0;">ROCK LOG - Boring No. B-202</h2>
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Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
86	9	5.0	76	F	R4			
87								Suspected core log zone 87.8 to 89 ft
88								
89								
90								
91	10	4.5 5.0	90	F	R4			
92								
93								
94								
95								
96	11	5.0 5.0	100	F	R4			
97								
98								
99							GRANODIORITE; pink granite, black, white and pink; medium to coarse grained; with small xenoliths of black, fine grained amphibolite schist, and quartz dikes	
100								
101	12	5.0 5.0	100	F	R4			
102								
103								
104								
105								
106	13	5.0 5.0	100	F	R4			
107								
108								
109								
110								
111	14	5.0 5.0	100	F	R4			
112								
113								
114								Begin 7/5/06; water at 56.8 ft
115								
116	15	5.0 5.0	100	F	R4			
117								
118								
119							QUARTZ DIORITE; black and white, bluish black; medium to coarse grained QUARTZ DIORITE; SAA; medium grained;	
120								
121	16	5.0 5.0	100	F	R4			
122								
123								
124								
125								
126		5.0						
								Quartzite zone from 124 to 125 ft

Project Name : Job Number <div style="text-align: center;"> MACTEC </div> SCE&G COL : 6234-06-3534	<h2 style="margin: 0;">ROCK LOG - Boring No. B-202</h2>
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Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
126	17	5.0	96	F	R4			
127								
128								
129								
130								
131	18	5.0 / 5.0	100	F	R4			
132								
133								
134								
135								
136	19	5.0 / 5.0	100	F	R4			
137								
138								
139							GRANODIORITE; black and white; medium to coarse grained	Begin 7/6/06; water at 55 ft
140								
141	20	5.0 / 5.0	100	F	R4			
142								
143								
144							GRANODIORITE; SAA; with small xenoliths of black, fine grained amphibolite schist; also contains a trace of pyrite mineralization	
145								
146	21	5.0 / 5.0	100	F	R4			
147								
148								
149								
150								
151	22	5.0 / 5.0	100	F	R4		QUARTZ DIORITE; bluish; fine to medium grained; with quartz dikes	
152								
153								
154								
155								
156	23	5.0 / 5.0	100	F	R4			
157								
158								
159								
160								
161	24	5.0 / 5.0	100	F	R4			
162								
163								
164								
165								
166		5.0						

Project Name : Job Number



SCE&G COL : 6234-06-3534

ROCK LOG - Boring No. B-202

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
166	25	5.0	100	F	R4		QUARTZ DIORITE; SAA with quartz dikes and pyrite mineralization CORING TERMINATED AT 175.5 ft	
167								
168								
169								
170								
171								
172	26	7.0 7.0	100	F	R4			
173								
174								
175								
176								Boring terminated at 175.5 on 7/6/06
177								
178								
179								
180								
181								
182								
183								
184								
185								
186								
187								
188								
189								
190								
191								
192								
193								
194								
195								
196								
197								
198								
199								
200								
201								
202								
203								
204								
205								
206								

Project Name : Job Number
 SCE&G COL : 6234-06-3534



SOIL LOG - Boring No. B-203

Type and Diameter of Boring Mud Rotary / 3 7/8 inch/HQ		Boring Location Nuclear Island		Total Depth 151.5 feet
Drilling Contractor and Rig MACTEC/White/331145 / CME 55 L		Elevation at Boring 423.5 feet	Ground Water Depth 0 feet	Depth to Bedrock 51.5 feet
Sampling Method Standard		Sample Driving Hammer/Drop 140 lbs / 30 inches	No. of Samples 14	Date Started 6/26/06
		Borehole Inclination 0	Logged by K. Miller	Date Completed 7/5/06

Reviewed by / Date M. Cooke 7/6/06
 Reviewed by / Date Chay Sam 11/30/06

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
0											
1		SPT 1	3	16/18					SM	SAND silty (SM); strong brown (7.5 YR 5/6); moist; loose; 60% sand; 40% silt; non-plastic; micaceous; RESIDUUM SAA; except medium dense, 26% fines SAA; except loose	Approximately 1.0 ft of gravel scraped off before boring start
2		SPT 2	4	16/18	●	●					
3		SPT 3	3	16/18							
4		SPT 4	3	16/18	●	●			SM	SAND silty (SM); light olive brown (2.5 Y 5/4); moist; loose; non plastic; micaceous; RESIDUUM	
5		SPT 5	4	16/18							
6		SPT 6	3	16/18						SAND silty (SM); strong brown (7.5 YR 5/8); moist; 24% fines; non plastic; micaceous	
7		SPT 7	4	16/18	●	●					
8		SPT 8	4	16/18	●	●					
9		SPT 9	4	16/18		●				SAND silty (SM); dark brown (7.5 YR 3/3); moist; medium dense; 37% fines; non plastic; micaceous	SAA
10		SPT 10	6	14/18							
11		SPT 11	7	14/18	●	●				SAND silty (SM); dark brown (7.5 YR 3/3); moist; medium dense; 31% fines; non plastic; micaceous	
12		SPT 12	9	16/18							

Project Name : Job Number MACTEC SCE&G COL : 6234-06-3534	<h2 style="margin: 0;">SOIL LOG - Boring No. B-203</h2>
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Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
40										SAND silty (SM); light olive brown (2.5 Y 5/4); moist; loose; non plastic; micaceous; RESIDUUM (Continued from previous page)	
41											
42											
43											
44		SPT 13	4 6 11	17 18	●	●				SAA; 42% fines	
45											
46											
47											
48											
49		SPT 14	7 11 14	17 18	●	●				SAND silty (SM); dark brown (7.5 YR 3/3); moist; medium dense; 29% fines; non plastic; micaceous	
50										BORING TERMINATED AT 51.5 ft see rock log	
51											
52											
53											
54											
55											
56											
57											
58											
59											
60											
61											
62											
63											
64											
65											
66											
67											
68											
69											
70											
71											
72											
73											
74											
75											
76											
77											
78											
79											
80											

Project Name : Job Number MACTEC		ROCK LOG - Boring No. B-203	
SCE&G COL : 6234-06-3534			
Type and Diameter of Boring Mud Rotary / 3 7/8 inch/HQ		Boring Location Nuclear Island	Total Depth 151.5 feet
Drilling Contractor and Rig MACTEC/White/331145 / CME 55 L		Elevation at Boring 423.5 feet	Ground Water Depth 0 feet
Casing Size and Depth 4 / 51.5 feet		Length of Core Barrel and Bit 8 feet / 1 feet	No. of Core Boxes 7
		Borehole Inclination 0	Logged by K. Miller
			Date Completed 7/5/06

Reviewed by / Date M. Cooke 7/6/06

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
52				MW	R2		QUARTZ DIORITE; dark gray; medium grained; quartz, plagioclase, biotite, trace hornblende	Tricone refusal at 51.5 ft on 6/26/06; water at 0 ft (drilling mud)
53								
54	1	4.7 / 5.0	89	F	R4			
55								
56								
57								
58							GRANODIORITE; medium grained; with occasional xenoliths of hornblende gneiss and schist; some migmatitic zones	
59	2	5.0 / 5.0	100	F	R4			
60								
61								
62								
63								100% loss on core water
64	3	4.8 / 5.0	81	F	R4			
65								
66				MW	R3			
67								
68								
69	4	5.0 / 5.0	94	F	R4			
70								
71								
72							GRANODIORITE to QUARTZ DIORITE gradational zone	
73								
74	5	5.0 / 5.0	100	F	R4			
75								
76								
77							QUARTZ DIORITE with occasional xenoliths of hornblende gneiss and schist; pegmatitic zones and veins throughout	End day 6/27/06 water at 6 ft, core water at 6:00 pm
78								Begin day 6/28/06 water at 55.3 ft at 8:00 am
79	6	5.0 / 5.0	98	F	R4			
80								
81								
82								
83							MIGMATITIC ZONE; flow banded texture; green, plagioclase to epidote alteration	
84	7	5.0 / 5.0	100	F	R4			
85								
86							QUARTZ DIORITE; dark gray; medium to coarse grained; quartz, feldspar, biotite, some hornblende quartz, K-spar; thin veins of quartz and feldspar throughout; trace pyrite and chalcopyrite throughout	
87								
88								
89	8	5.0 / 5.0	100	F	R4			
90								
91								

Project Name : Job Number <div style="text-align: center;"> MACTEC</div> SCE&G COL : 6234-06-3534	<h2 style="margin: 0;">ROCK LOG - Boring No. B-203</h2>
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Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
92								
93								
94	9	5.0 / 5.0	100	F	R4			
95								
96								
97							Pegmatite dike from 96.1 to 98.1 ft	
98								
99	10	5.0 / 5.0	80	F	R4			
100								
101						SW R3		
102						MW to R2		
103						HW		
104	11	5.0 / 5.0	100	F	R4			
105							Pegmatite dike from 105 to 106 ft	
106								
107								
108								
109	12	5.0 / 5.0	100	F	R4			
110								
111								
112							Pegmatite dike from 112 to 112.7 ft	
113								
114	13	5.0 / 5.0	100	F	R4			
115							Pegmatite dike from 113.3 to 113.6 ft Pegmatite dike from 113.9 to 114 ft	
116								
117								
118								
119	14	5.0 / 5.0	100	F	R4			
120							Pegmatite dike from 119 to 119.7 ft	
121								
122							Pegmatite zone from 121.5 to 122.4 ft	
123								
124	15	5.0 / 5.0	100	F	R4			
125								
126								
127								
128								
129	16	5.0 / 5.0	100	F	R4			
130							MIGMATITIC ZONE; flow banded texture from 128.6 to 130.4 ft	
131							QUARTZ DIORITE; trace pyrite and chalcopyrite	

End day 6/28/06 water at 0 ft, core water
Begin day 7/4/06 water at 59.5 ft at 9:16 am

End day 7/4/06 water at 0 ft core water
Begin day 7/5/06 water at 55.8 ft at 10:00 am

Project Name : Job Number 	ROCK LOG - Boring No. B-203
SCE&G COL : 6234-06-3534	

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
132							(secondary?)	
133								
134	17	5.0 5.0	100	F	R4			
135								
136								
137								
138								
139	18	5.0 5.0	100	F	R4		Pegmatite dike; moderately weathered from 138 to 138.1 ft	
140								
141							K-SPAR rich zone from 140.3 to 142.7 ft; some epidote alteration	
142								
143								
144	19	5.0 5.0	100	F	R4			
145								
146								
147								
148								
149	20	5.0 5.0	100	F	R4			
150								
151								
152							QUARTZ DIORITE; SAA	End drilling 7/5/06 at 0 ft, core
153							CORING TERMINATED AT 151.5 ft.	water at 2:15 pm
154								Bottom 0.4 ft left in hole; unable
155								to retrieve
156								
157								
158								
159								
160								
161								
162								
163								
164								
165								
166								
167								
168								
169								
170								
171								

Project Name : Job Number		SOIL LOG - Boring No. B-204	
MACTEC SCE&G COL : 6234-06-3534			
Type and Diameter of Boring Mud Rotary / 3 7/8 inch/HQ		Boring Location Nuclear Island	
Drilling Contractor and Rig MACTEC/Banks/337153 / CME550		Elevation at Boring 424.5 feet	Ground Water Depth 55 feet
Sampling Method Standard/UD		Sample Driving Hammer/Drop 140 lbs / 30 inches	No. of Samples 8
		Borehole Inclination 0	Logged by J. Liles
			Date Started 7/9/06
			Date Completed 7/11/06

Reviewed by / Date M. Cooke 7/24/06
 Reviewed by / Date *Clay Sam 11/30/06*

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Remarks
0									ML	SILT sandy (ML); red (10 R 4/8); damp; stiff; fine to medium sand; non plastic; slightly micaceous; RESIDUUM
1										
2		SPT 1	37	14						
3										
4		SPT 2	68	15						
5										
6										
7		SPT 3	24	16						
8										
9		UD 1		24						
10										
11									ML	SAA red (2.5 YR 4/6)
12		SPT 4	60	14						
13									ML	SAA yellowish brown (10 YR 5/6)
14		SPT 5	27	14						
15										
16										
17										
18										
19		UD 2		16						
20										
21										
22										
23									ML	SILT sandy (ML); dark yellowish brown (10 YR 4/4); moist; stiff; fine sand; non plastic; micaceous; SAPROLITE
24		SPT 6	37	13						First saprolitic SPT sample
25										
26										
27										
28										
29		UD 3		15						
30										
31										
32										
33										
34		SPT 7	27	13						
35										
36										
37										
38										
39		UD		16						
40										

Project Name : Job Number <div style="text-align: center;"></div> SCE&G COL : 6234-06-3534	<h2 style="margin: 0;">SOIL LOG - Boring No. B-204</h2>
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Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
40		4		24						SILT sandy (ML); dark yellowish brown (10 YR 4/4); moist; stiff; fine sand; non plastic; micaceous; SAPROLITE <i>(Continued from previous page)</i>	
41											
42											
43											
44		SPT 8	8	18							
45											
46											
47		SPT 50/2		0						No recovery PARTIALLY WEATHERED ROCK	
48				2							
49											
50											
51											
52											
53											
54											
55											
56											
57											
58											
59											
60											
61											
62											
63											
64											
65											
66											
67											
68											
69											
70											
71											
72											
73											
74											
75											
76											
77											
78											
79											
80											

Project Name : Job Number MACTEC		ROCK LOG - Boring No. B-204	
SCE&G COL : 6234-06-3534			
Type and Diameter of Boring Mud Rotary / 3 7/8 inch/HQ		Boring Location Nuclear Island	Total Depth 150 feet
Drilling Contractor and Rig MACTEC/Banks/337153 / CME550		Elevation at Boring 424.5 feet	Ground Water Depth 55 feet
Casing Size and Depth 4 / 47 feet		Length of Core Barrel and Bit 13.5 feet	No. of Core Boxes 7
		Borehole Inclination 0	Date Started 7/9/06
		Logged by J. Liles	Date Completed 7/11/06

Reviewed by / Date M. Cooke 7/24/06

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
47							Very intensely fractured rock, stained and pyrite visible	SPT refusal; drill bit refusal at 47.0 ft see rock log on 7/9/06 Begin day 7/10/06; water at 36.5 ft
48								
49								
50	1	0.5 6.5	0	HW to CW	R0 to R1			
51								
52								
53								
54								
55						⊙		
56	2	0.5 5.0	0	HW to CW	R0 to R1			
57								
58								
59								
60								
61	3	0.4 5.0	0	HW to CW	R0 to R1			
62								
63								
64								
65								
66	4	0.6 5.0	0	HW to CW	R0 to R1			
67								
68								
69							SAA with some slightly weathered zones of quartz diorite and quartzite starting at 69.0 ft	
70								
71	5	2.6 5.0	42	MW to SW	R0 to R1			
72								
73								
74								
75								
76	6	2.0 5.0	8	MW to SW	R0 to R1			
77								
78								
79							QUARTZ DIORITE; bluish gray; fine to medium grained; contains quartz dikes	Top of sound rock
80								
81	7	4.5 5.0	90	F	R4			
82								
83								
84								
85								
86	8	5.0 5.0	100	F	R4			
87								

Project Name : Job Number MACTEC SCE&G COL : 6234-06-3534	<h2 style="margin: 0;">ROCK LOG - Boring No. B-204</h2>
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Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
87							SAA; fine to coarse sand	
88								
89								
90								
91	9	5.0 5.0	100	F	R4			
92								
93							QUARTZ DIORITE; bluish gray; fine to coarse grained; trace of pyrite; and some quartz dikes	
94								
95								
96	10	5.0 5.0	100	F	R4			
97								
98								
99								
100								
101	11	5.0 5.0	100	F	R4			
102								
103								
104								
105								
106	12	5.0 5.0	100	F	R4			
107								
108							QUARTZ DIORITE; bluish black and white; fine to medium grained; contains quartz dikes, traces of epidote and pyrite mineralization	
109								
110								
111	13	5.0 5.0	100	F	R4 R4			
112								
113								
114								
115								
116	14	5.0 5.0	98	F	R4 R4			
117								
118								Begin day 7/11/06; water at 35 ft
119								
120								
121	15	5.0 5.0	100	F	R4 R4			
122								
123							GRANODIORITE; black and white; medium to coarse grained; contains quartz, feldspar, biotite, and a trace of pyrite	
124								
125								
126	16	5.0 5.0	100	F	R4 R4			
127								

Project Name : Job Number



SCE&G COL : 6234-06-3534

ROCK LOG - Boring No. B-204

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
127								
128								
129								
130								
131	17	5.0 5.0	100	F	R4 R4			
132								
133								
134							QUARTZ DIORITE; bluish gray; fine to coarse grained; contains quartz dikes, one small epidote xenolith, and a trace of pyrite CORING TERMINATED AT 150.0 ft	
135								
136	18	5.0 5.0	100	F	R4 R4			
137								
138								
139								
140								
141	19	5.0 5.0	100	F	R4 R4			
142								
143								
144								
145								
146	20	5.0 5.0	100	F	R4 R4			
147								
148								
149	21	1.5 1.5	100	F	R4 R4			
150								Boring terminated on 7/11/06
151								
152								
153								
154								
155								
156								
157								
158								
159								
160								
161								
162								
163								
164								
165								
166								
167								

Project Name : Job Number 	<h2 style="margin: 0;">SOIL LOG - Boring No. B-205</h2>
SCE&G COL : 6234-06-3534	

Type and Diameter of Boring Mud Rotary / 5 inch/HQ	Boring Location Nuclear Island	Total Depth 175 feet
Drilling Contractor and Rig Gregg/Smith/311025 / CME 55	Elevation at Boring 423.1 feet	Ground Water Depth 10 feet
Sampling Method Split Spoon	Sample Driving Hammer/Drop 140 lbs / 30 inches	No. of Samples 15
Borehole Inclination 0		Logged by J. Harmon
Reviewed by / Date M. Cooke 5/14/06		Date Started 5/1/06
Reviewed by / Date <i>Clay Lane 4/20/06</i>		Date Completed 5/11/06

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
0									CL-ML	CLAY silty (CL-ML); red (2.5 YR 4/8); damp, medium stiff; fine sand 5%; small roots, small rock fragments. RESIDUUM	Started drilling 5/1/06
1		SPT 1	3	14					ML		
2		SPT 2	4	14	●	●			ML	SILT sandy (ML); red (2.5 YR 4/8); damp, stiff; 23% sand; RESIDUUM	
3											
4		SPT 3	3	4						SAA, large rock fragment, wet	Rock clogged SPT sampler opening
5											
6										SILT sandy (ML); dark red (2.5 YR 3/2); moist, stiff, 29% sand; RESIDUUM	
7		SPT 4	3	16	●	●					
8											
9											
10		SPT 5	2	14							
11											
12		SPT 6	2	14	●	●				SILT sandy (ML); red (2.5 YR 4/8); moist; stiff; 35% sand; RESIDUUM	
13											
14		SPT 7	2	13						SILT (ML); SAA except red and yellow (2.5 YR 4/8 and 2.5 YR 7/8); medium stiff	
15											
16											
17											
18											
19		SPT 8	2	15	●	●	●			SILT sandy (ML); strong brown (7.5 YR 5/8); moist; stiff; 38% sand; micaceous. RESIDUUM	
20											
21											
22											
23									SM	SAND silty (SM); yellowish red (5 YR 4/6); moist; medium dense; 40% fines; low plasticity; micaceous. RESIDUUM	
24		SPT 9	6	17	●	●					
25											
26											
27											
28									SM	SAND silty with gravel (SM); yellowish red (5 YR 4/6); moist; medium dense; 34% fines, 15% gravels, low plasticity; 1 to 3 cm sized rock fragments, weathered schist, micaceous. RESIDUUM	
29		SPT 10	13	14	●	●					
30											
31											
32											
33											
34		SPT 11	21	8	●	●			GW-GM	GRAVEL sandy with silt (GW-GM); red (silt) (2.5 YR 5/6), black (gravel) (Glay 1 2.5 /N), wet, micaceous, 30% sand, 7% fines, 1 to 4 cm sized weathered schist.	Rig jumping
35											
36											
37											
38											
39		SPT 12	26	0						NO RECOVERY	
40											

Project Name : Job Number



SCE&G COL : 6234-06-3534

SOIL LOG - Boring No. B-205

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
40											
41										NO RECOVERY (Continued from previous page)	
42											Saprolite End of day 5/1/06, water level at 5 ft. Begin of day 5/2/06, cave in at 35 ft
43											
44	SPT 13		6 10	13 18	●	●	●		SM	SAND silty (SM); strong brown (7.5 YR 5/8); moist, medium dense, 38% fines, 4% gravels, micaceous, no plasticity, weathered schist. SAPROLITE	
45											
46											
47											
48											
49	SPT 14		8 12 14	15 18	●	●	●			SAND silty (SM); medium dense; micaceous; 44% fines, 11% gravels	
50											
51											
52											
53											
54	SPT 15		50/6	0 6						NO RECOVERY. PARTIALLY WEATHERED ROCK BORING TERMINATED AT 54.0 ft. see rock log	
55											
56											
57											
58											
59											
60											
61											
62											
63											
64											
65											
66											
67											
68											
69											
70											
71											
72											
73											
74											
75											
76											
77											
78											
79											
80											

Project Name : Job Number		MACTEC		ROCK LOG - Boring No. B-205	
SCE&G COL : 6234-06-3534					
Type and Diameter of Boring Mud Rotary / 5 inch/HQ			Boring Location Nuclear Island		Total Depth 175 feet
Drilling Contractor and Rig Gregg/Smith/311025 / CME 55			Elevation at Boring 423.1 feet	Ground Water Depth 10 feet	Depth to Bedrock 54 feet
Casing Size and Depth 4 / 54 feet			Length of Core Barrel and Bit 5.2 feet	No. of Core Boxes 9	Date Started 5/1/06
			Borehole Inclination 0	Logged by J. Harmon	Date Completed 5/11/06

Reviewed by / Date M. Cooke 5/14/06

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks	
54	1	0.0	0	CW	R0		NO RECOVERY		Partially weathered rock
55		1.0							Spoon refusal. Switch to HQ
56				HW	R2 to R3		QUARTZ DIORITE; white and very dark gray (Glau 1 8/8, 3/3); granitic texture; some staining		rock coring
57	2	1.5	12						Begin of day 5/8/06, water level at 45 ft.
58		5.0							
59				CW	R0				
60									
61							QUARTZ DIORITE; SAA; igneous texture		
62	3	3.8	52	HW	R2		Granodiorite zone		
63		5.0							
64				F	R4				
65									
66									
67	4	4.9	98	F	R4 to R5				
68		5.0							
69									
70									
71									End of day 5/8/06, water level at 23 ft.
72	5	5.0	100	F	R4 to R5		Quartz dike		Begin of 5/9/06, water level at 56 ft.
73		5.0							
74									
75									
76									
77	6	5.0	100	F	R4 to R5				
78		5.0							
79									
80									
81				F	R5				
82	7	2.5	42	MW			No recovery from 82.5 to 85 ft		Drilling rate increased, highly weathered rock was not recovered from 82.5 to 85 ft.
83		5.0							
84				HW	R1				
85									Top of sound rock?
86							Large quartz dike		
87	8	5.0	90	F	R4 to R5				
88		5.0							
89									
90							SAA, foliation at 94°		
91									
92	9	5.0	90	F	R4 to R5				
93		5.0							
94									

Project Name : Job Number



SCE&G COL : 6234-06-3534

ROCK LOG - Boring No. B-205

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
94								
95								
96								
97	10	5.0 5.0	96	F	R4 to R5			
98								
99								
100							Quartz dike	
101							Quartz dike	
102	11	5.0 5.0	80	F	R4 to R5		HORNBLLENDE GNEISS; greenish gray, light gray, very dark gray (Gley 1 7/N, 3/N, 5/5GY); foliation at 35°, hornblende, schist	
103								
104								
105							Foliation at 35°	
106								
107	12	5.0 5.0	92	F	R4 to R5			
108								
109								
110							SAA, hornblende, schist, quartz, feldspar	
111								
112	13	5.0 5.0	100	F	R4 to R5		Quartz dike	
113								
114								
115								
116							Quartz dike	
117	14	5.0 5.0	100	F	R4 to R5			
118								
119								
120								
121							QUARTZ DIORITE with zones of HORNBLLENDE GNEISS and Granodiorite; greenish gray, light gray, very dark gray. (Gley 1 7/N, 3/N, 5/5GY), flow and texture, breccia, texture from 121 to 122.5 ft.	
122	15	5.0 5.0	100	F	R4		fine to medium grained, quartz, hornblende, schist, feldspar, biotite	
123							Breccia texture 121 to 122.5 ft	
124							Quartz dike	
125							HORNBLLENDE GNEISS with zone of QUARTZ DIORITE (125 to 125.5 ft); greenish gray, light gray, and very dark gray (Gley 7/N, 3/N, 5/5GY); fine grained foliation at 30°. Hornblende, biotite, schist, quartz.	End of day 5/9/06, water level at 15 ft. Begin of day 5/10/06, water level at 58 ft.
126	16	5.0 5.0	100	F	R5			
127								
128								
129								
130								
131							Quartz dike	
132	17	5.0 5.0	100	F	R5			
133								
134								

Project Name : Job Number <div style="text-align: center;"></div> SCE&G COL : 6234-06-3534	<h2 style="margin: 0;">ROCK LOG - Boring No. B-205</h2>
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Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
134								
135								
136								
137	18	5.0 5.0	100	F	R5		Granodiorite dike fine to medium grained	
138							Granodiorite dike	
139							MIGMATITE; mixture of Granodiorite schist and Gneiss; light gray, very dark gray and black (Gley 1 7/N, 3/N, 2.5/N); fine to medium grained; some foliation at 15° (142 ft), flowing texture from 140 to 143 ft, then igneous texture from 143 to 145 ft; quartz	
140	19	5.0 5.0	96	F	R4 to R5			
141								
142								
143								
144								
145								
146	20	5.0 5.0	100	F	R5		MIGMATITE; mixture of granodiorite, hornblende gneiss; black, light gray and white (Gley 1 8/N, 7/N, 3/N); fine to medium grained; flowing texture; quartz, biotite, schist, K-spar, hornblende.	
147								
148								
149								
150								
151	21	5.0 5.0	100	F	R5		QUARTZ DIORITE; light gray, very dark gray (Gley 1 7/N, 3/N); fine to medium grained; igneous texture; quartz, biotite, schist, K-spar, hornblende. Quartz dike	
152								
153								
154								
155								
156	22	5.0 5.0	100	F	R5		QUARTZ DIORITE with zones of Hornblende Gneiss; greenish gray, light, very dark gray (Gley 1 7/N, 3/N, 5/5GY); fine to medium grained; some foliation 15°, hornblende, quartz, biotite, schist	
157								
158								
159								
160								
161	23	5.0 5.0	100	F	R4 to R5		HORNBLLENDE GNEISS; greenish gray, light gray, and very dark gray (Gley 1 7/N, 3/N, 5/5GY); fine to medium grained, foliation at 30°, hornblende, quartz, feldspar, biotite, schist. Pegmatite dikes	End of day 5/10/06, water level at 5 ft. Begin of day 5/11/06, water level at 58 ft.
162								
163								
164								
165								
166								
167	24	5.0 5.0	100	F	R5		Pegmatite dikes	
168								
169								
170								
171								
172	25	5.0 5.0	100	F	R5		HORNBLLENDE GNEISS; fine grained, banded texture, foliation at 30° CORING TERMINATED AT 175.0 ft.	
173								
174								

Project Name : Job Number



SCE&G COL : 6234-06-3534

ROCK LOG - Boring No. B-205

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
174								
175								Boring terminated at 175 ft. on 5/11/06, water level at 10 ft
176								
177								
178								
179								
180								
181								
182								
183								
184								
185								
186								
187								
188								
189								
190								
191								
192								
193								
194								
195								
196								
197								
198								
199								
200								
201								
202								
203								
204								
205								
206								
207								
208								
209								
210								
211								
212								
213								
214								

Project Name : Job Number MACTEC		SOIL LOG - Boring No. B-206	
SCE&G COL : 6234-06-3534			
Type and Diameter of Boring Mud Rotary / 4 inch/HQ		Boring Location Nuclear Island	Total Depth 214.8 feet
Drilling Contractor and Rig MACTEC/White/33115 / CME 55 LC		Elevation at Boring 424.3 feet	Ground Water Depth 57 feet
Sampling Method Standard		Sample Driving Hammer/Drop 140 lbs / 30 inches	No. of Samples 18
		Borehole Inclination 0	Logged by K. Miller
			Date Started 6/10/06
			Date Completed 6/22/06

Reviewed by / Date M. Cooke 7/6/06

Reviewed by / Date Clay Same 11/30/06

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks
0									ML	SILT sandy (ML); red (2.5 YR 5/8); dry; stiff; 60% silt, 40% sand; low to non plastic; small roots; RESIDUUM	
1	SPT 1	3	11								
2	SPT 2	5	11		●						
3											
4	SPT 3	4	12						SM	SAND silty (SM); red (2.5 YR 5/6); damp; medium dense 60% sand, 40% silt; non plastic; RESIDUUM	
5											
6	SPT 4	5	12		●	●					
7											
8											
9	SPT 5	5	12								
10											
11	SPT 6	5	14		●	●					
12											
13											
14	SPT 7	4	14								
15											
16											
17											
18											
19	SPT 8	5	14		●	●			SM	SAND silty (SM); dark yellowish brown; damp; medium dense; 26% fines; non plastic; micaceous; SAPROLITE	Top of saprolite
20											
21											
22											
23											
24	SPT 9	4	14								
25											
26											
27											
28											
29	SPT 10	4	15		●	●					
30											
31											
32											
33											
34	SPT 11	4	16								
35											
36											
37											
38											
39	SPT 12	4	16		●	●	●				
40											

Project Name : Job Number 	SOIL LOG - Boring No. B-206
SCE&G COL : 6234-06-3534	

Depth (feet)	Sample	Sample Type & No.	Uncorrected Blows/6 inches	Recovery (inches)	Water Content	Grain Size	Atterberg Limits	Lithology	Soil Type (USCS)	Lithology	Remarks	
40												
41												
42												
43												
44		SPT 13	9 10 11	16 18					SM	SAA except olive brown (2.5 Y 4/3); 35% fines		
45												
46												
47												
48											SAND silty (SM); olive brown (2.5 Y 4/3); damp; medium dense; 31% fines; non plastic; micaceous; SAPROLITE	
49		SPT 14	6 9 11	16 18	●	●						
50												
51												
52												
53												
54		SPT 15	6 10 12	16 18							SAA	
55												
56												
57												
58												
59		SPT 16	8 15 22	16 18	●	●					SAA except dense; 28% fines	
60												
61												
62												
63												
64		SPT 17	12 14 16	16 18						SAND silty (SM); olive brown (2.5 Y 4/3); damp; medium dense; non plastic; micaceous; SAPROLITE		
65												
66												
67												
68												
69		SPT 18	39 26 27	18 18	●	●				SAA except very dense; 22% fines		
70										BORING TERMINATED AT 72.0 ft		
71												
72												
73												
74												
75												
76												
77												
78												
79												
80												

Project Name : Job Number MACTEC SCE&G COL : 6234-06-3534		ROCK LOG - Boring No. B-206	
Type and Diameter of Boring Mud Rotary / 4 inch/HQ		Boring Location Nuclear Island	
Drilling Contractor and Rig MACTEC/White/33115 / CME 55 LC		Elevation at Boring 424.3 feet	Ground Water Depth 57 feet
Casing Size and Depth 4 / 72 feet		Length of Core Barrel and Bit 5 feet	No. of Core Boxes 11
		Borehole Inclination 0	Logged by K. Miller
			Date Started 6/10/06
			Date Completed 6/22/06

Reviewed by / Date M. Cooke 7/6/06

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
72				CW to	R1		PEGMATITE zone; white (10 YR 8/1); coarse grained; quartz, feldspar	Refusal at 72.0 ft. Water level at 0 ft on 6/10/06 at 5:00 pm drilling mud ~60 % return on core water
73	1	3.5 4.0	58	HW	R2			
74				MW	to		QUARTZ DIORITE; black to white (10 YR 2/1 to 8/1); medium to coarse grained; quartz, biotite, hornblende, feldspar	
75				HW	R3			
76				SW	R1			
77				HW	R2			
78	2	5.0 5.0	78	SW	R3			
79					R1			
80				HW	to			
81				SW	R3			
82				HW	R1			
83	3	4.7 5.0	68		R2		GRANODIORITE; white to black (10 YR 8/1 to 2/1); coarse grained; quartz, feldspar, hornblende, biotite	
84				SW	R3			
85					R1			
86					R2			
87					to			
88	4	5.0 5.0	95	F	R3			~60% water return
89								
90								
91							PEGMATITE DIKE; white (10 YR 8/1); quartz, feldspar, biotite	
92								
93	5	5.0 5.0	98	F	R3		QUARTZ DIORITE; black to white (10 YR 4/1 to 8/1); medium grained; quartz, feldspar, biotite	
94								
95								
96								
97								
98	6	5.0 5.0	100	F	R3			
99								
100								
101								
102								
103	7	5.0 5.0	100	F	R3			6/19/06 at 6:00 pm water at 0 ft; core water 6/20/06 at 8:00 am water at 56.5 ft. ~60% water return
104								
105								
106								
107								
108	8	5.0 5.0	93	F	R3			
109								
110								
111								
112								

Project Name : Job Number



ROCK LOG - Boring No. B-206

SCE&G COL : 6234-06-3534

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Remarks	
112									
113	9	5.0 5.0	95	F	R3		Pegmatite dike; quartz, feldspar		
114									
115									
116									
117									
118	10	5.0 5.0	100	F	R3				~60% water return
119									
120									
121									
122									
123	11	5.0 5.0	97	F	R3				
124									
125									
126									
127									
128	12	5.0 5.0	100	F	R3				
129									
130									
131									
132									
133	13	5.0 5.0	98	F	R3			~60% water return	
134									
135									
136									
137									
138	14	5.0 5.0	98	F	R3				
139									
140									
141									
142									
143	15	5.0 5.0	92	F	R3				
144									
145									
146									
147									
148	16	5.0 5.0	96	F	R3			6/20/06 at 5:30 pm water at 0 ft; core water 6/21/06 at 8:00 am water at 59.0 ft ~60% water return	
149									
150									
151									
152									

Project Name : Job Number



ROCK LOG - Boring No. B-206

SCE&G COL : 6234-06-3534

Depth (feet)	Run No.	Recovery / Cut	% RQD	Weathering	Strength	In-Situ Testing	Lithology	Lithology	Remarks
152	17	5.0	95	F	R3				
153		5.0							
154	18	5.0	100	F	R3				
155		5.0							
156	19	5.0	100	F	R3				~60% water return
157		5.0							
158	20	5.0	100	F	R3				
159		5.0							
160	21	5.0	97	F	R3				
161		5.0							
162	22	5.0	95	F	R3				~60% water return
163		5.0							
164	23	5.0	100	F	R3				6/21/06 at 5:00 pm water at 0 ft; core water 6/22/06 at 8:00 am water at 57 ft
165		5.0							
166	24	5.0	100	F	R3				
167		5.0							
168									
169									
170							QUARTZITE; bluish gray (Gley 2 5/1); fine grained; quartz (banded)		
171									
172									
173									
174									
175									
176									
177									
178									
179									
180									
181									
182									
183									
184									
185									
186									
187									
188									
189									
190							Pegmatite dike; quartz, feldspar (0.5 ft thick)		
191							0.5 ft thick zone of GRANODIORITE		
192									

Project Name : Job Number <div style="text-align: center;"> MACTEC</div> SCE&G COL : 6234-06-3534	<h2 style="margin: 0;">ROCK LOG - Boring No. B-206</h2>
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Depth (feet)	Run No.	Recovery / Cut	% ROD	Weathering	Strength	In-Situ Testing	Lithology	Remarks
192	25	5.0 5.0	97	F	R3		GRANODIORITE; white to black (10 YR 8/1 to 2/1); coarse grained; quartz, feldspar, biotite, hornblende	~60% water return
193								
194								
195	26	5.0 5.0	100	F	R3			
196								
197								
198	27	5.0 5.0	100	F	R3			
199								
200								
201	28	5.0 5.0	100	F	R3			
202								
203								
204	29	3.8 3.8	100	F	R3			
205								
206								
207								~60% water return
208								
209								
210								
211								
212								
213								
214								
215								
216								
217								
218								
219								
220								
221								
222								
223								
224								
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232								