ATTACHMENT B – GEOTECHNICAL BORING LOGS

MACTEC

July 31, 2007

Mr. Tom McCallum
Georgia Power Company
C/O Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Phone: (205) 992-6697
e-mail: tomccall@southernco.com

Subject: **Geotechnical Data Report Attachment B – Geotechnical Boring Logs, Geotechnical Test Pit Logs, SPT Energy Ratio Measurements**
Vogtle Units 3 & 4 COL Project
Vogtle Electric Generating Plant
Burke County, Georgia
MACTEC Project Number 6141-06-0286

Dear Mr. McCallum:

MACTEC Engineering & Consulting, Inc. is pleased to submit Attachment B of the Final Data Report for the geotechnical exploration and laboratory testing for the Vogtle Units 3 & 4 COL Project located adjacent to the existing Vogtle Electric Generating Plant near Waynesboro, Burke County, Georgia.

It has been a pleasure to perform the work described in the attached report. If you have any questions, or if we may be of further service, we hope that you will contact us at your convenience.

Sincerely,

MACTEC ENGINEERING & CONSULTING, INC.

Matthew F. Cooke
Senior Geologist
Site Superintendent
Registered, Georgia 1887

Wm. Allen Lancaster
Project Manager
Civil Engineer
Registered, Georgia 7075

Pieter J. DePree
Principal Geotechnical Engineer
Registered, Georgia 19637

DCN VGCOL 324
Revision 1, 7/31/07

ATTACHMENT B

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

Geotechnical Data Report
Vogtle Units 3 & 4 COL Project
Vogtle Electric Generating Plant
Burke County, Georgia
Subsurface Investigation and Laboratory Testing
SNC Subcontract No. 7074425
MACTEC Job No. 6141-06-0286

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:

Mr. Tom McCallum
Georgia Power Company
C/O Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Phone: (205) 992-6697
e-mail: tomccall@southernco.com

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

Survey Data and Test Locations..... See Attachment A

Cone Penetrometer Test Results.....See Attachment C

Geophysical Test Data (Downhole and Field Electrical Resistivity) .....See Attachment D

ReMi Seismic Shear Wave Velocity Measurements .....See Attachment E

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

Resonant Column Torsional Shear (RCTS) Test Results.....See Attachment G

ATTACHMENT B

CONSISTS OF:

TABLE B-1: LIST OF BORING AND TEST PIT LOGS
GEOTECHNICAL BORING LOGS
GEOTECHNICAL TEST PIT LOGS
SPT ENERGY RATIO MEASUREMENTS

Volume 1 of 1

TABLE B-1

List of Boring and Test Pit Logs

NOTE CONCERNING PREPARATION AND REVIEW OF BORING AND TEST PIT LOGS:

The boring and test pit logs listed in Table B-1 and contained in Attachment B were prepared in the MACTEC Atlanta office using the gINT Software Program. The boring and test pit logs were prepared, checked, and reviewed by those listed in the signature blocks below.

Prepared By: **Alexandra Taylor**

Checked By: **Matthew F. Cooke** WITH PERMISSION

Checked By: **Martha L. Herrera**

Reviewed By: **Pieter J. DePree**

TABLE B-1
LIST OF BORING AND TEST PIT LOGS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Boring/Test Pit Number	Location/Remarks	Total Depth (ft, bgs)
B-1105	SWITCHYARD	148.8
B-1107	SWITCHYARD	150.0
B-1108	SWITCHYARD	149.8
B-1109	SWITCHYARD	150.0
B-1110	SWITCHYARD	150.0
B-1111	SWITCHYARD	150.0
B-1112	SWITCHYARD	23.0
B-1112A	SWITCHYARD	150.0
B-1113	SWITCHYARD	170.0
B-1116	SWITCHYARD	138.5
B-1117	SWITCHYARD	149.3
B-1118	SWITCHYARD	149.4
B-1119	SWITCHYARD	150.0
B-1120	SWITCHYARD	149.8
B-1121	SWITCHYARD	150.0
B-1123	SWITCHYARD	150.0
B-1124	SWITCHYARD	150.0
B-1125	SWITCHYARD	150.0
B-1126	SWITCHYARD	150.0
B-1127	SWITCHYARD	150.0
B-1128	SWITCHYARD	73.0
B-1128A	SWITCHYARD	148.8
B-1129	POWER BLOCK ROADS	100.0
B-1130	POWER BLOCK ROADS	99.2
B-1131	POWER BLOCK ROADS	98.6
B-1132	POWER BLOCK ROADS	100.0
B-1133	POWER BLOCK ROADS	100.0
B-1134	POWER BLOCK ROADS	100.0
B-1136	POWER BLOCK ROADS	100.0
B-1138	HEAVY HAUL ROAD	100.0

TABLE B-1
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VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Boring/Test Pit Number	Location/Remarks	Total Depth (ft, bgs)
B-1139	POWER BLOCK ROADS	150.0
B-1140	POWER BLOCK ROADS	150.0
B-1142	HEAVY HAUL ROAD	100.0
B-1146	HEAVY HAUL ROAD	98.6
B-1148	HEAVY HAUL ROAD	100.0
B-1150	HEAVY HAUL ROAD	100.0
B-1152	HEAVY HAUL ROAD	100.0
B-1153	HEAVY HAUL ROAD	100.0
B-1154	HEAVY HAUL ROAD	98.8
B-1155	PUMPHOUSE	150.0
B-1156	PUMPHOUSE	99.2
B-1157	PUMPHOUSE	150.0
B-1158	PUMPHOUSE	149.5
B-1159	PUMPHOUSE	150.0
B-1161	PUMPHOUSE	150.0
B-1162	PUMPHOUSE	200.0
B-1163	PUMPHOUSE	150.0
B-1164	PIPE LINE	150.0
B-1166	PIPE LINE	100.0
B-1168	PIPE LINE	100.0
B-1170	PIPE LINE	98.9
B-1172	PIPE LINE	100.0
B-1174	PIPE LINE	100.0
B-1176	PIPE LINE	35.0
B-1176A	PIPE LINE	100.0
B-1185	SWITCHYARD	148.9
B-1186	BATCH PLANT	178.8
B-1187	BATCH PLANT	150.0
B-1189	BATCH PLANT	150.0
B-1191	BATCH PLANT	150.0

TABLE B-1
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VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Boring/Test Pit Number	Location/Remarks	Total Depth (ft, bgs)
B-1192	BATCH PLANT	179.5
B-1193	BATCH PLANT	178.8
B-1194	BORROW AREA 4	50.0
B-1195	BORROW AREA 4	50.0
B-1196	BORROW AREA 4	50.0
B-1197	BORROW AREA 4	50.0
B-3001(DH)	EAST POWER BLOCK	420.0
B-3002(DH)	EAST POWER BLOCK	249.9
B-3002A	EAST POWER BLOCK	21.5
B-3003(DH)	EAST POWER BLOCK	250.0
B-3004	EAST POWER BLOCK	160.0
B-3005	EAST POWER BLOCK	155.0
B-3006	EAST POWER BLOCK	155.0
B-3007	EAST POWER BLOCK	159.8
B-3008	EAST POWER BLOCK	155.0
B-3009	EAST POWER BLOCK	153.9
B-3010	EAST POWER BLOCK	160.0
B-3011	EAST POWER BLOCK	165.0
B-3012	EAST POWER BLOCK	159.3
B-3013(C)	EAST POWER BLOCK	155.0
B-3014	EAST POWER BLOCK	158.7
B-3015	EAST POWER BLOCK	150.0
B-3016	EAST POWER BLOCK	150.0
B-3017	EAST POWER BLOCK	150.0
B-3018	EAST POWER BLOCK	155.0
B-3019	EAST POWER BLOCK	153.8
B-3020	EAST POWER BLOCK	149.4
B-3021	EAST POWER BLOCK	154.5
B-3022	EAST POWER BLOCK	150.0
B-3023	EAST POWER BLOCK	150.5

TABLE B-1
LIST OF BORING AND TEST PIT LOGS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Boring/Test Pit Number	Location/Remarks	Total Depth (ft, bgs)
B-3024	CIRC. WATER LINE	150.0
B-3025	CIRC. WATER LINE	150.0
B-3026	CIRC. WATER LINE	149.2
B-3027	CIRC. WATER LINE	150.0
B-3028	CIRC. WATER LINE	150.0
B-3029	CIRC. WATER LINE	149.9
B-3030	COOLING TOWER	150.0
B-3031	COOLING TOWER	150.0
B-3032	COOLING TOWER	149.5
B-3033	COOLING TOWER	149.3
B-3034	COOLING TOWER	149.2
B-3035	EAST POWER BLOCK	150.5
B-3036	EAST POWER BLOCK	155.0
B-3037	EAST POWER BLOCK	150.0
B-3038	CIRC. WATER LINE	98.9
B-3039	EAST POWER BLOCK	150.0
B-4001(DH)	WEST POWER BLOCK	399.9
B-4002(DH)	WEST POWER BLOCK	250.0
B-4003(DH)	WEST POWER BLOCK	249.8
B-4004	WEST POWER BLOCK	150.0
B-4005	WEST POWER BLOCK	164.9
B-4006	WEST POWER BLOCK	165.0
B-4007	WEST POWER BLOCK	170.0
B-4008	WEST POWER BLOCK	169.4
B-4009	WEST POWER BLOCK	164.9
B-4010	WEST POWER BLOCK	160.0
B-4011	WEST POWER BLOCK	150.0
B-4013(C)	WEST POWER BLOCK	165.0
B-4014	WEST POWER BLOCK	158.6
B-4015	WEST POWER BLOCK	155.0

TABLE B-1
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VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Boring/Test Pit Number	Location/Remarks	Total Depth (ft, bgs)
B-4016	WEST POWER BLOCK	149.6
B-4017	WEST POWER BLOCK	150.0
B-4018	WEST POWER BLOCK	160.0
B-4019	WEST POWER BLOCK	160.0
B-4020	WEST POWER BLOCK	89.4
B-4020A	WEST POWER BLOCK	165.0
B-4021	WEST POWER BLOCK	150.0
B-4022	WEST POWER BLOCK	148.7
B-4023	WEST POWER BLOCK	150.0
B-4024	CIRC. WATER LINE	150.0
B-4025	CIRC. WATER LINE	150.0
B-4026	CIRC. WATER LINE	150.0
B-4027	CIRC. WATER LINE	150.0
B-4028	CIRC. WATER LINE	150.0
B-4029	CIRC. WATER LINE	150.0
B-4030	COOLING TOWER	150.3
B-4031	COOLING TOWER	150.0
B-4032	COOLING TOWER	38.5
B-4032A	COOLING TOWER	150.0
B-4033	COOLING TOWER	149.4
B-4034	COOLING TOWER	150.0
B-4035	WEST POWER BLOCK	164.8
B-4036	WEST POWER BLOCK	170.0
B-5001	230 KV SWITCHYARD	150.0
B-5002	230 KV SWITCHYARD	150.0
B-5003	230 KV SWITCHYARD	148.7
B-5004	230 KV SWITCHYARD	149.8
B-6002	BATCH PLANT	150.0
B-6003	BATCH PLANT	179.4
B-6004	BATCH PLANT	150.0

TABLE B-1
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VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Boring/Test Pit Number	Location/Remarks	Total Depth (ft, bgs)
B-6005	BATCH PLANT	178.8
B-6006	CONSTRUCTION WAREHOUSE	50.0
B-6007	CONSTRUCTION WAREHOUSE	50.0
B-6008	DECHLORINATION BUILDING	150.0
B-6009	HEAVY HAUL ROAD	100.0
B-6010	500 KV SWITCHYARD	169.3
B-6011	HEAVY HAUL ROAD	120.0
B-6012	HEAVY HAUL ROAD	120.0
B-6013	ACCESS ROAD	50.0
B-6014	ACCESS ROAD	50.0
B-6015	ACCESS ROAD	50.0
B-6018	LAY DOWN YARD	50.0
B-6019	LAY DOWN YARD	50.0
B-6020	LAY DOWN YARD	130.0
B-6021	LAY DOWN YARD	120.0
B-6022	LAY DOWN YARD	90.0
B-6023	LAY DOWN YARD	50.0
B-6024	LAY DOWN YARD	50.0
B-6025	LAY DOWN YARD	50.0
B-6026	LAY DOWN YARD	50.0
B-6027	NEW BARGE SLIP	75.0
B-6028	NEW BARGE SLIP	50.0
B-6029	NEW INTAKE ACCESS ROAD	50.0
B-6030	NEW INTAKE ACCESS ROAD	50.0
TP-B-1108	SWITCHYARD	12.2
TP-B-1117	SWITCHYARD	9.0
TP-B-1121	SWITCHYARD	14.0
TP-B-1125	SWITCHYARD	11.0
TP-B-1185	SWITCHYARD	11.0
TP-B-1194	BORROW AREA 4	11.5

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MACTEC PROJECT No. 6141-06-0286

Boring/Test Pit Number	Location/Remarks	Total Depth (ft, bgs)
TP-B-1195	BORROW AREA 4	8.0
TP-B-1197	BORROW AREA 4	11.0

Prepared By/Date: Matthew F. Cooke/5-23-07 MFC

Checked By/Date: Alexandra Taylor/7-26-07 AT

GEOTECHNICAL BORING LOGS

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	GRAVEL, well graded, little or no fines.
			GP	GRAVEL, poorly graded, little or no fines.
		GRAVELS WITH FINES (Appreciable amount of fines)	GM	GRAVEL, sand and silt.
			GC	GRAVEL, sand and clay
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 Sieve Size)	CLEAN SANDS (Little or no fines)	SW	SAND, well graded, little or no fines.
			SP	SAND, poorly graded, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	SM	SAND, silty
			SC	SAND, clayey
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	SILT, sandy or clayey, low plasticity
			CL	CLAY, low plasticity
			OL	SILT, organic, or CLAY, organic, low plasticity
	SILTS AND CLAYS (Liquid limit GREATER than 50)		MH	SILT, sandy or clayey, high plasticity
			CH	CLAY, high plasticity
			OH	CLAY, organic, or SILT, organic, high plasticity
FILL				Various soil types modified by human activity

Undisturbed Sample	Auger Cuttings
Split Spoon Sample	Bulk Sample

Correlation of Penetration Resistance with Relative Density and Consistency

SAND & GRAVEL		SILT & CLAY	
No. of Blows	Relative Density	No. of Blows	Consistency
0 - 4	Very Loose	0 - 1	Very Soft
5 - 10	Loose	2 - 4	Soft
11 - 30	Medium Dense	5 - 8	Medium Stiff
31 - 50	Dense	9 - 15	Stiff
Over 50	Very Dense	16 - 30	Very Stiff
		Over 31	Hard

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

SILT OR CLAY	SAND			GRAVEL		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

No.200 No.40 No.10 No.4 3/4" 3" 12"

U.S. STANDARD SIEVE SIZE

Reference: ASTM D 2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)

KEY TO SYMBOLS AND DESCRIPTIONS

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GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1105

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1144168.4 E 620002.8	12/4/2006	12/6/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	CME-850	3 Inches	165952	148.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
257.9	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			257.9			
SS 1	3-5-6	18			**SAND, silty (SM)** - Strong brown (7.5YR 5/8), damp, medium dense, 40% coarse grained, rounded	Top of Barnwell Group at a depth of 0.0 feet
SS 2	6-7-11	18			SAA except strong brown (7.5YR 5/6)	
SS 3	6-6-7	18		5	SAA except yellowish red (5YR 5/6)	
SS 4	4-10-13	17			SAA except yellowish brown (10YR 5/4)	
SS 5	9-12-14	17		10	SAA except brown (7.5YR 4/4)	
SS 6	6-10-12	17	244.9		SAA except dark yellowish brown (10YR 4/4)	
SS 7	4-3-3	12	240.9	15	**CLAY, sandy (CL)** - Yellowish red (5YR 4/6), damp, medium stiff, low plasticity	
SS 8	1-1-2	17		20	**SAND, clayey (SC)** - Yellowish red (5YR 5/6), damp, very loose, rounded	
SS 9	3-7-10	18	230.9	25	SAA except yellowish red (5YR 4/6), loose	
SS 10	8-7-17	18	225.9	30	**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/4), damp, medium dense, rounded, contains pale yellow (5Y 7/3) clay lenses	
SS 11	7-10-12	18	220.9	35	**SAND, silty (SM)** - Strong brown (7.5YR 5/6), damp, medium dense, rounded	Water level depth at end of 12/04/2006 = Ground surface
SS 12	13-13-14	13		40	**SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/8), wet, medium dense, 40% coarse grained, rounded	Water level depth at beginning of 12/05/2006 = 5.2 feet
SS 13	7-9-10	10	210.9	45	SAA except reddish yellow (7.5YR 6/6 and 7.5YR 6/8), damp	
SS	5-4-4	18			**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), wet, loose, rounded	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1105

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1105

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)
14			205.9		
SS 15	3-4-6	18		55	**CLAY, sandy (CH)** - Pale yellow (5Y 7/3), damp, stiff, medium plasticity, -HCL
SS 16	8-10-10	18		60	SAA except very stiff, +HCL
SS 17	20-11-14	18	190.9	65	SAA except pale yellow (5Y 8/2)
SS 18	20-15-26	17		70	**CLAY (CH)** - Pale yellow (5Y 8/3), damp, hard, medium plasticity, +HCL
SS 19	3-3-5	18		75	SAA except pale yellow (5Y 8/4), medium stiff
SS 20	3-4-7	18	175.9	80	SAA except pale yellow (5Y 7/3), stiff
SS 21	50/4"	4	170.9	85	**SILT, gravelly (MH)** - Pale yellow (5Y 8/3), damp, hard, gravel consists of shell fragments, +HCL
SS 22	12-17-15	18	165.9	90	**CLAY, sandy (CH)** - Pale yellow (5Y 8/4), damp, hard, medium plasticity, +HCL
SS 23	16-20-16	18	160.9	95	**SAND, clayey with gravel (SC)** - Pale yellow (5Y 7/4), damp, dense, rounded, gravel consists of shell fragments, +HCL
SS 24	11-11-21	18	155.9	100	**CLAY, with sand (CH)** - Pale yellow (5Y 8/3), damp, hard, high plasticity, +HCL
SS 25	20-50/5"	11	150.9	105	**CLAY, sandy (CL)** - Pale yellow (5Y 8/2), damp, hard, +HCL

NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1105**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1105

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	12-12-24	18		110		**CLAY, sandy with gravel (CH)** - Pale yellow (5Y 8/2), damp, hard, gravel consits of shell fragments, medium plasticity, +HCL	
SS 27	☒	13-50/6"	12		115		SAA except pale yellow (5Y 8/4)	
SS 28	☒	16-50/5"	11		120		SAA	
				135.9				
SS 29	☒	8-15-17	18		125		**CLAY, with sand (CH)** - Pale yellow (2.5Y 7/4), damp, hard, medium plasticity, +HCL	
				130.9				
SS 30	☒	9-16-20	18		130		**SAND, clayey (SC)** - Light gray (2.5Y 7/2), damp, dense, rounded, +HCL	Water level depth at end of 12/05/2006 = Ground surface
SS 31	☒	16-15-17	17		135		SAA except very pale brown (10YR 8/2), wet, contains pale yellow (5Y 8/2) CLAY lenses	
SS 32	☒	7-10-13	18		140		SAA except pale yellow (2.5Y 7/3), damp, medium dense	
				115.9				
SS 33	☒	10-14-18	18		145		**SAND, silty (SM)** - Pale yellow (2.5Y 7/3), damp, dense, rounded, +HCL	
				110.9				
SS 34	☒	50/3"		109.1			**NO RECOVERY** Boring terminated at 148.75 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	B-1105

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1107

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Bruce	N 1144153.8 E 620916.1	1/11/2007	1/16/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Poole-Gregg Drilling	Froste MDXL	4 Inches	X02958	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
266.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			266.7			
SS 1	2-2-1	18			**SAND (SP)** - Brownish yellow (10YR 6/8), dry, very loose, fine to medium grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	WOH/6"-1-1	15			SAA	
			263.4			
SS 3	1-2-2	17			**SAND, silty (SM)** - Red (2.5YR 4/8), dry loose, fine to medium grained	
			261.2	5		
SS 4	3-4-5	15			**SAND, clayey (SC)** - Red (2.5YR 4/8), moist, loose, fine to medium grained	
SS 5	7-7-6	13			SAA	
				10		
SS 6	8-9-9	10			SAA	
SS 7	7-10-13	15			SAA	
				15		
			249.7			
SS 8	5-6-7	10			**SAND, silty (SM)** - Red (2.5YR 4/6), moist, medium dense, fine to medium grained	
				20		
SS 9	6-8-9	12			SAA except yellowish red (5YR 5/6), fine grained, contains CLAY lenses	
				25		
			239.7			
SS 10	8-10-13	7			**SAND (SP)** - Very pale brown, (10YR 8/3), moist, medium dense, fine to medium grained	
				30		
			234.7			
SS 11	13-13-13	17			**SAND, silty (SM)** - Red (2.5YR 4/6), moist, medium dense, fine grained, contains traces of CLAY	
				35		
			229.7			
SS 12	8-11-10	11			**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), moist, medium dense, fine grained	
				40		
SS 13	7-5-4	15			SAA except very pale brown (10YR 7/3), wet, loose, fine to coarse grained, -HCL	
				45		
			218.2			
SS	3-3-21	18			**SILT (ML)** - Light greenish grey (GLEY 1 7/10Y), moist, very stiff, +HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1107

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1107

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14				214.7				
SS 15		6-4-8	18	209.7	55		**CLAY, gravelly (CL)** - Light greenish grey (GLEY 1 7/10Y), moist, stiff, contains shell fragments, +HCL	
SS 16		4-4-5	18		60		**CLAY, silty (CL-ML)** - Light greenish grey (GLEY 1 7/10Y), moist, stiff, contains shell fragments, +HCL	Water level depth at end of 1/11/2007 = Ground surface
SS 17		3-4-5	18	199.7	65		SAA	Water level depth at beginning of 1/12/2007 = 25.0 feet
SS 18		9-8-11	14	194.7	70		**GRAVEL, clayey (GC)** - Light greenish grey (GLEY 1 7/10Y), wet, medium dense, contains shell fragments, +HCL	
SS 19		35-29-42	15	189.7	75		**SAND with clay (SP-SC)** - Light greenish grey (GLEY 1 7/10Y), wet, hard, coarse grained, contains shell fragments	
SS 20		17-15-21	16	184.7	80		**SAND, silty, clayey (SC-SM)** - Light greenish grey (GLEY 1 7/10Y), wet, dense, coarse grained, +HCL	
SS 21		18-15-22	16	179.7	85		**GRAVEl, clayey (GC)** - Light greenish grey (GLEY 1 8/10Y), wet, dense, contains traces of fine to coarse grained SAND, contains shell fragments, +HCL	
SS 22		10-15-50/3"	15		90		**SAND, clayey (SC)** - Very pale brown (10YR 7/3), moist, very dense, +HCL	
SS 23		12-13-15	15	169.7	95		SAA except wet, medium dense, medium to coarse grained	
SS 24		14-21-27	14	164.7	100		**GRAVEL, with clay and sand (GP-GC)** - Pale brown (10YR 6/3), wet, dense, contains shell fragments, +HCL	
SS 25		20-21-30	18	159.7	105		**SAND, clayey (SP-SC)** - Pale brown (10YR 6/3), wet, very dense, medium to coarse grained, contains traces of GRAVEL, +HCL	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1107**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1107

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	19-23-23	18		110	**GRAVEL, clayey (GC)** - Pale brown (10YR 6/3), wet, dense, contains shell fragments and traces of fine to coarse grained SAND	
			154.7			
SS 27	21-18-18	18		115	**SAND, clayey (SC)** - Very pale brown (10YR 7/3), wet, dense, fine to coarse grained, contains shell fragments, +HCL	
			149.7			
SS 28	10-11-8	18		120	**SAND, silty (SM)** - Very pale brown (10YR 7/3), wet, medium dense, fine to medium grained, +HCL	Water level depth at beginning of 1/13/2007 = 50.0 feet
SS 29	15-19-21	16		125	SAA except damp, dense, non-plastic	
			138.2			
SS 30	50/5"	5		130	**SAND, silty (SM)** - Very pale brown (10YR 7/3), wet, very dense, fine to medium grained, contains shell fragments, +HCL	Top of Utley Limestone at a depth of 128.5 feet
			134.7			
SS 31	50/6"	6		135	**SAND, silty with gravel (SM)** - Very pale brown (10YR 8/3), very dense, fine grained, contains shell fragments, non-plastic, +HCL	
			130.2			Top of Blue Bluff Marl at a depth of 136.5 feet
SS 32	23-22-40	18		140	**SILT (ML)** - Greenish grey (GLEY 1 5/1), damp, hard, low plasticity, +HCL	
SS 33	14-21-50/3"	15		145	SAA except contains shell fragments	
SS 34	15-34-30	18			SAA	
			116.7	150	Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1107**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1108

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Bruce	N 1144214.1 E 621273.0	1/3/2007	1/10/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Poole-Gregg Drilling	Froste MDXL	4 Inches	X02958	149.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
273.6	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			273.6		
SS 1	WOH/18"	16		**SAND, silty (SM)**- Yellow (10YR 7/6), moist, very loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet.
SS 2	0-1-2	5		SAA	
			270.1		
SS 3	0-1-2	11		***SAND, with silt (SP-SM)**- Yellow (10YR 7/6), moist, very loose, fine grained	
SS 4	1-3-4	11		SAA except grades to a pale brown (10YR 8/2), medium grained at base of spoon	
			265.6		
SS 5	10-19-26	18	264.6	**SAND, (SP)** - Light yellowish brown (10YR 6/4), wet, medium dense, coarse grained	
SS 6	14-16-16	14		***SAND, with clay (SP-SC)** - Yellowish red (5YR 5/6), moist, dense	
SS 7	9-12-16	10		SAA SAA except Red (2.5YR 4/6)	
			256.6		Water level depth at end of 01/03/2007 = Ground surface
SS 8	5-7-9	11		***SAND, silty (SM)** - Red (2.5YR 4/6), moist, medium dense, medium grained	Water level depth at beginning of 01/04/2007 = 10.5 feet
			251.6		
SS 9	8-8-10	12		**SAND, with silt (SP-SM)** - Red (2YR 4/8), moist, medium dense, fine to medium grained	
			246.6		
SS 10	9-12-14	12		**SAND (SP)** - Reddish yellow (5YR 7/8), grades to a pinkish white (5YR 8/2) at base of spoon, moist, medium dense, fine to medium grained, little to no fines	
			241.6		
SS 11	8-9-11	16		***SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), moist, medium dense, medium to coarse grained with traces of fine GRAVEL and CLAY	
			236.6		
SS 12	7-7-6	13		***SAND, clayey (SC)** - Brownish yellow (10YR 6/6), moist, medium dense, traces of silt and gravel, medium grained with well-rounded gravel	
			231.6		
SS 13	4-3-3	11		**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), moist, loose, fine to medium grained	
			225.1		
SS	1-2-3	18		**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 8/5GY), moist, medium stiff, low	

DEPTH IN FT: 5, 10, 15, 20, 25, 30, 35, 40, 45

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1108

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1108

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					plasticity, trace of fine sand	
SS 15	55-20-14	18		55	SAA, except low plasticity	
SS 16	9-14-18	18		60	SAA except dark greenish gray (GLEY1 4/10GY)	
			211.6			
SS 17	8-9-50/3"	15		65	**CLAY, sandy (CL)** - Light greenish gray (GLEY1 8/5GY), moist, hard, traces of angular shell fragments at base of spoon, +HCL	
			206.6			
SS 18	13-24-19	18		70	**SAND, with gravel (SW-SC)** - Light greenish gray (GLEY1 8/10Y), moist, dense, clay matrix, sandy shell fragments, +HCL	
			201.6			
SS 19	9-11-13	18		75	**SAND, silty (SM)** - Light greenish gray (GLEY1 8/10Y), moist, medium dense, fine to medium grained, trace of sub-rounded gravel, +HCL	Water level depth at end of 01/04/2007 = Ground surface
			196.6			
SS 20	12-14-16	8		80	**SAND (SP)** - Very pale brown (10YR 8/2), moist, dense, medium to coarse grained, +HCL	Water level depth at beginning of 01/05/2007 = 37.0 feet
			191.6			
SS 21	18-13-10	13		85	**GRAVEL, with sand (GP-GC)** - Very pale brown (10YR 8/2), wet, medium dense, shell hash with sand and CLAY matrix, +HCL	
			186.6			
SS 22	16-24-32	16		90	**SAND, with gravel (SW-SC)** - Very pale brown (10YR 8/2), moist, very dense, shell hash with more SAND than GRAVEL	
			181.6			
SS 23	16-21-22	13		95	**SAND, clayey (SC-SM)** - Very pale brown (10YR 7/3), moist, dense, fine to medium coarse SAND, trace of subangular shell fragments, trace of silt, +HCL	
SS 24	13-16-18	15		100	SAA	
			171.6			
SS 25	18-30-23	18		105	**GRAVEL, with clay (GW-GC)** - Very pale brown (10YR 7/3), wet, very dense, contains subangular shell fragments, medium to coarse SAND, +HCL	Water level depth at end of 01/07/2007 =
			166.6			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1108**

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GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1108

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		17-21-16	18		110		**SAND with clay and gravel (SP-SC)** - Very pale brown (10YR 7/3), wet, dense, SAND is medium to coarse grained, trace of some shell fragments, +HCL	Ground surface Water level depth at beginning of 01/08/2007 = 58.0 feet
SS 27		12-20-20	18	156.6	115		SAA	
SS 28		21-21-26	18	151.6	120		**SAND, silty (SM)** - Very pale brown (10YR 7/3), wet, dense, sand fine to medium grained, traces of clay and shell fragments, +HCL	
SS 29		50/1"	1	146.6	125		**SAND clayey and gravelly (SP-SC)** - Very pale brown (10YR 7/4), wet, very dense, shell hash with CLAY matrix, fine to coarse grained, +HCL	Top of Utley Limestone at a depth of 122.0 feet
SS 30		14-17-17	15		130		**SAND, with silt and gravel (SP-SM)** - Very pale bown (10YR 7/4), wet, dense, sandy shell hash, trace of CLAY, +HCL	
SS 31		50/5"			135		SAA	Water level depth at end of 01/08/2007 = Ground surface
SS 32		14-26-44	18	135.1	140		**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/10GY), moist, hard, +HCL	Water level depth at beginning of 01/10/2007 = 58.0 feet Top of Blue Bluff Marl at a depth of 138.5 feet
SS 33		17-20-28	18		145		SAA	
SS 34		22-28-50/4"		123.7			SAA Boring terminated at149.83 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1108**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1109

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1144180.5 E 621580.6	1/8/2007	1/10/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	CME-850	3 Inches	165952	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
276.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			276.5			
SS 1	1-2-1	11			**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), dry, very loose, fine grained, rounded	Top of Barnwell Group at a depth of 0.0 feet.
SS 2	3-3-2	16			SAA except brownish yellow (10YR 6/6), damp, loose	
SS 3	1-2-2	14			SAA except light yellowish brown (10YR 6/4), wet	
			271.0	5		
SS 4	10-12-15	17			**SAND, clayey (SC)** - Red (2.5YR 4/8), damp, medium dense, fine grained, contains traces of pale yellow (2.5Y 7/4) and reddish yellow (7.5YR 6/8)	
SS 5	9-11-12	18			SAA	
				10		
SS 6	8-8-10	16			SAA except red (2.5YR 5/8) and reddish yellow (7.5YR 7/8), damp, medium dense, fine grained, rounded	
SS 7	8-8-9	16			SAA except red (2.5YR 5/8)	
				15		
			260.5			
SS 8	6-7-11	18			**SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/6), wet, medium dense, medium grained, rounded	
				20		
SS 9	7-8-12	11			SAA	
				25		
			249.5			
SS 10	10-6-7	11			**SAND, silty (SM)** - Light red (2.5YR 6/8), moist, loose, contains yellow (10YR 8/6), fine grained, rounded	
				30		
			245.5			
SS 11	8-9-12	10			**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), wet, medium dense, medium grained, rounded	
				35		
			239.5			
SS 12	4-6-7	11			**SAND, clayey, (SC)** - Brownish yellow (10YR 6/6), moist, medium dense, medium grained, rounded	
				40		
			234.5			
SS 13	3-3-5	18			**CLAY, sandy (CL)** - Pale yellow (2.5Y 7/3), moist, medium stiff, low plasticity	
				45		
			230.5			
SS	18-13-18	18			**CLAY, silty with gravel (CL-ML)** - Pale yellow (5Y 8/2), damp, hard, medium plasticity,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1109

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1109

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14							contains shell fragments, +HCL	Water level depth at end of 01/08/2007 = Ground surface
				224.5				
SS 15		9-20-16	18		55		**SILT (ML)** - Pale yellow (5Y 8/3), damp, hard, low plasticity, +HCL	Water level depth at beginning of 01709/2007 = 29.0 feet
				219.5				
SS 16		9-9-14			60		**CLAY (CL)** - Greenish gray (GLEY1 5/1), damp, very stiff, low plasticity, +HCL	
SS 17		50/3"	3		65		SAA except wet, hard, medium plasticity	
				209.5				
SS 18		23-36-45	18		70		**CLAY, gravelly (CL)** - Pale yellow (2.5Y 8/4) and yellow (2.5Y 8/6), moist, hard, medium plasticity, contains shell fragments, +HCL	
				204.5				
SS 19		13-13-18	18		75		**CLAY, with gravel (CL)** - Pale yellow (5Y 8/2), moist, hard, medium plasticity, +HCL	
				199.5				
SS 20		13-17-32	18		80		**CLAY, gravelly (CL)** - Pale yellow (2.5Y 8/4), damp, hard, contains shell fragments, +HCL	
				194.5				
SS 21		18-12-20	17		85		**SAND, silty (SM)** - Pale yellow (2.5Y 8/2 and 5Y 8/3), damp, dense, fine grained, contains shell fragments, +HCL	
SS 22		24-28-50/5"	17		90		SAA except pale yellow (2.5Y 8/2), very dense	
				185.5				
SS 23		14-18-22	18		95		**SAND, clayey (SC)** - Very pale brown (10YR 8/2), damp, dense, medium grained, +HCL	
SS 24		18-28-22	18		100		SAA	
				174.5				End logging by M. Herrera Begin logging by A. Taylor
SS 25		16-22-24	18		105		**SAND, with clay (SP-SC)** - Very pale brown (10YR 8/2), damp, dense, fine grained, contains shell fragments, +HCL	
				170.5				

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1109**

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1109

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	10-15-17	18		110	**SAND (SP)** - Yellow (2.5Y 8/6), damp, dense, medium grained, contains shell fragments, +HCL	
SS 27	16-16-18	18		115	SAA except medium to coarse grained	
			159.5			Top of Utley Limestone at a depth of 117.0 feet.
SS 28	50/2"	0		120	**NO RECOVERY**	Water level depth at beginning of 01/10/2007 = 49.0 feet
SS 29	50/1"	0		125	**NO RECOVERY**	
			150.5			
SS 30	50/2"	1		130	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/2), damp, very dense, coarse grained, contains shell fragments, +HCL	
			144.9			Top of Blue Bluff Marl at 131.6 feet
SS 31	46-34-50/6"	18		135	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, +HCL	
SS 32	12-14-16	18		140	SAA except very stiff and contains shell fragments	
			134.5			
SS 33	16-50/5.5"	11.5		145	**SILT (ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, +HCL	
SS 34	16-17-30	18			SAA	
			126.5	150	Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1109**

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GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1110

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1144170.9 E 622011.3	12/6/2006	12/11/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	CME-850	3 Inches	165952	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
265.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			265.1			
SS 1	4-6-7	18			**SAND, silty (SM)** - Strong brown (7.5YR 4/6), damp, medium dense, rounded	Top of Barnwell Group at a depth of 0.0 feet
SS 2	5-3-3	18			SAA except strong brown (7.5yr 5/8), loose	
SS 3	1-2-2	15		5	SAA except yellowish red (5YR 5/8	
SS 4	2-2-3	14			SAA except wet	
SS 5	2-4-5	13		10	SAA	
SS 6	5-5-7	14			SAA except reddish yellow (5YR 6/8), medium dense	
SS 7	5-6-8	12		15	SAA	
			248.1			
SS 8	6-8-10	15		20	**SAND, clayey (SC)** - Reddish yellow (5YR), damp, medium dense, rounded	
SS 9	6-5-8	16		25	SAA except yellowish red (5YR 5/8)	
SS 10	5-6-7	18		30	SAA except yellow (10YR 7/6)	
			233.1			
SS 11	3-4-3	18		35	**CLAY (CH)** - Pale yellow (5Y 8/3), damp medium stiff, medium plasticity, -HCL	
SS 12	6-7-16	18		40	SAA except very stiff, +HCL	
			221.7			
SS 13	8-30-32	18		45	**SILT (ML)** - Greenish gray (GLEY1 5/1), dry, hard, low plasticity, +HCL	
SS	17-33-33	18			SAA	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1110

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1110

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			213.1			
SS 15	10-50/3"	10		55	**CLAY, silty (CL-ML)** - Pale yellow (5Y 8/3), dry, hard, medium plasticity, +HCL	
			208.1			
SS 16	20-30-40	17		60	**CLAY, gravelly (CL)** - Yellow (2.5Y 8/6), dry, hard, gravel contains shell fragments, +HCL	
SS 17	20-23-20	18		65	SAA except damp	
SS 18	28-30-25	17		70	SAA except pale yellow (5Y 8/4)	Water level depth at end of 12/06/2006 = Ground surface
			193.1			
SS 19	19-13-15	15		75	**SAND, silty with gravel (SM)** - Pale yellow (2.5Y 8/4), damp, medium dense, +HCL	Water level depth at beginning of 12/07/2006 = 15.83 feet
			188.1			
SS 20	16-16-17	18		80	**CLAY, sandy (CH)** - Pale yellow (2.5Y 8/3), and yellow (2.5Y 7/6), damp, hard, medium plasticity, +HCL	
			183.1			
SS 21	20-16-18	15		85	**CLAY, gravelly (CL)** - Pale yellow (2.5Y 8/4), damp, hard, low plasticity, +HCL	
			178.1			
SS 22	10-11-9	18		90	**SAND, clayey with gravel (SC)** - Yellow (10YR 7/6), damp, medium dense, gravel consists of shell fragments, +HCL	
			173.1			
SS 23	8-8-8	18		95	**CLAY (CH)** - Pale yellow (5Y 8/4), dry, very stiff, medium plasticity, +HCL	
			168.1			Top of Utley Limestone at a depth of 97.0 feet
SS 24	50/1"	0		100	**NO RECOVERY**	
			163.1			
SS 25	12-13-50/3"	15		105	**SAND, with silt (SP-SM)** - Very pale brown (10YR 7/3), wet, very dense, coarse grained, rounded, +HCL	
			158.1			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1110**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1110

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		50/1"	0		110		**NO RECOVERY**	
				153.1				
SS 27	☒	10-50/2"	8		115		**CLAY, silty, gravelly (CL-ML)** - Very pale brown (10YR 8/3), damp, hard, +HCL	
				147.1				
SS 28	☒	18-19-22	18		120		**CLAY (CH)** - Greenish gray (GLEY 1 5/1), dry, hard, medium plasticity, +HCL	Top of Blue Bluff Marl at a depth of 118.0 feet
				143.1				
SS 29	☒	14-16-32	18		125		**CLAY, with gravel (CL)** - Greenish gray (GLEY1 5/1), dry, hard, gravel contains shell fragments, +HCL	
SS 30	☒	18-20-50/1"	13		130		SAA except greenish gray (GLEY1 6/1)	Water level depth at end of 12/07/2006 = Ground surface
				133.1				
SS 31	☒	50/3"	3		135		**CLAY (CH)** - Greenish gray (GLEY1 5/1), damp, hard, medium plasticity, +HCL	Water level depth at beginning of 12/11/2006 = 37.0 feet
SS 32	☒	14-22-22	18		140		SAA	
SS 33	☒	24-50/3"	9		145		SAA	
SS 34	☒	15-42-28	17	115.1	150		SAA except greenish gray (GLEY1 6/1)	
							Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1110**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1111

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Mabie	N 1144212.6 E 622333.8	1/19/2007	1/23/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
224.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			224.9			Top of Barnwell Group at a depth of 0.0 feet
SS 1	13-8-6	10			**SAND, with silt (SP-SM)** - Light red (2.5YR 6/8), moist, medium dense, fine to medium grained, nonplastic, -HCL	
SS 2	10-12-14	12			SAA except moist to wet	
			221.7			
SS 3	4-8-6	15		5	**CLAY (CL)** - Pale yellow (5Y 7/3), moist, stiff, low plasticity, +HCL	
SS 4	5-9-18	18			SAA except greenish gray (GLEY1 5/10GY), very stiff	
			216.9			
SS 5	6-12-12	18		10	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10GY), moist, very stiff, low plasticity, +HCL	
SS 6	6-9-8	18			SAA except pale yellow (5Y 7/4), contains shell fragments	
			211.9			
SS 7	50/3"	3		15	**SAND, with clay (SP-SC)** - Pale yellow (5Y 7/4), wet, very dense, contains shell fragments, low plasticity, +HCL	
SS 8	12-17-19	15		20	SAA except yellow (10YR 7/8), dense, fine to medium grained	
			203.2			
SS 9	7-9-12	18		25	**CLAY, silty (CL-ML)** - Pale yellow (5Y 7/4), moist, very stiff, low plasticity, contains shell fragments, +HCL	
			198.2			
SS 10	10-13-19	18		30	**CLAY (CL)** - Yellow (10YR 7/6), moist, hard, low to medium plasticity, contains shell hash, +HCL	
			193.2			
SS 11	8-11-13	13		35	**SAND, with clay (SP-SC)** - Yellow (2.5Y 8/6), moist, medium dense, low plasticity, fine to medium grained, contains shell hash, +HCL	
SS 12	25-22-18	17		40	SAA except dense	
SS 13	8-12-11	16		45	SAA except yellow (10YR 7/8), medium dense, nonplastic to low plasticity, contains shell fragments	
			178.2			
SS	20-14-18	16			**SAND, clayey (SC)** - Pale yellow (2.5Y 7/4), wet, dense, fine grained, low plasticity, +HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1111

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1111

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	15-17-22	16		55	SAA except yellow (10YR 8/6), moist, medium dense, contains shell hash	
			168.2			
SS 16	21-17-50/4"	13		60	**SAND, with clay (SP-SC)** - Yellow (10YR 8/6), moist, very dense, fine to medium grained, contains shell hash, +HCL	
SS 17	10-13-13	15		65	SAA except yellow (2.5Y 7/6), medium dense, low plasticity, contains shell fragments	
SS 18	50/2"	0.5		70	SAA except wet, very dense, nonplastic to low plasticity, fine grained	Water level depth at beginning of 1/22/2007 = 54.6 feet
			153.4			Installed 3" steel casing to a depth of 70.0 feet
SS 19	50/2"	0.1		75	**SAND (SP)** - Pale yellow (2.5Y 8/2), dry, very dense, nonplastic, contains shell fragments, +HCL	Top of Utley Limestone at a depth of 71.5 feet Loss of circulation at a depth of 74.5 feet
SS 20	50/2"	2		80	SAA	Loss of circulation at a depth of 79.5 feet Advanced casing to 80.0 feet
			143.2			Top of Blue Bluff Marl at a depth of 81.75 feet
SS 21	8-12-14	18		85	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10GY), moist, very stiff, low plasticity, contains shell fragments, +HCL	Water level depth at end of 1/22/2007 = 77.6 feet
SS 22	7-11-18	18		90	SAA	Water level depth at beginning of 1/23/2007 = 78.6 feet
			133.2			
SS 23	15-30-36	18		95	**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 5/10GY), moist, hard, fine grained SAND, low plasticity, contains shell fragments, +HCL	
			128.2			
SS 24	31-50/5"	11		100	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10GY), moist, hard, low plasticity, contains shell fragments, +HCL	
SS 25	19-50/3"	9		105	SAA	
			118.2			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1111**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1111

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	10-23-29	18		110		**CLAY (CL)** - Greenish gray (GLEY1 5/10GY), moist, hard, low plasticity, contains shell fragments, +HCL	
SS 27	☒	26-18-23	18		115		SAA	
SS 28	☒	10-50/2"	8		120		SAA except greenish gray (GLEY1 6/5GY)	
SS 29	☒	8-12-18	18		125		SAA except very stiff	
SS 30	☒	19-17-19	18		130		SAA except hard, contains no shell fragments	
SS 31	☒	8-29-39	18		135		SAA	
SS 32	☒	7-11-12	18		140		SAA except very stiff, contains some shell fragments	
SS 33	☒	15-50/5"	11		145		SAA except hard, contains abundant shell hash	
				78.2				Top of Still Branch Formation at a depth of 146.75 feet
SS 34	☒	10-12-16	18	74.9	150		**SAND, silty, clayey (SC-SM)** - Greenish black (GLEY1 3/10Y), moist, medium dense, fine grained, nonplastic to low plasticity, -HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1111**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	B-1112

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1144223.4 E 622691.3	1/9/2007	1/9/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	23.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
213.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			213.7			
SS 1	4-8-5	18	212.7		**SAND, silty with gravel (SM)** - Dark greyish brown (10YR 4/2), dry, medium dense, fine to coarse grained	Top of Fill at a depth of 0.0 feet
SS 2	4-5-6	18			**SAND, silty with gravel (SM)** - Red (2.5YR 4/6), dry, medium dense, fine grained	Top of Barnwell Group at a depth of 1.0 feet
SS 3	3-2-3	15			SAA except violet red (10R 5/3), contains traces of CLAY	
			208.2	5	SAA except loose	
SS 4	4-6-6	15			**SAND, silty, clayey (SC-SM)** - Violet red (10R 5/3), damp, medium dense, fine grained	
			205.7			
SS 5	4-3-10	12			**CLAY, sandy (CL)** - Light olive brown (2.5Y, 5/3), damp, stiff, fine grained	
			203.2	10		
SS 6	1-1-2	17			**CLAY, silty (CL-ML)** - Light yellowish brown (2.5Y 6/4), damp, soft	
SS 7	0-1-1	8			SAA except yellow (2.5Y 7/8), contains shell fragments	
				15		
			196.7			
SS 8	4-4-4	14			**SAND, clayey (SC)** - Yellow (5Y 8/6), damp, loose, contains shell fragments	
				20		
			190.7			
					Boring terminated at 23 feet. Drilling halted by T. McCallum with Southern Nuclear Company due to concerns about proximity to existing switchyard.	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1112

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1112A

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1144219.4 E 622561.5	2/28/2007	3/2/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
227.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			227.1			
SS 1	7-8-8	10			**SAND, silty with gravel (SM)** - Red (10R 5/6), damp, medium dense, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet.
SS 2	10-11-15	14			SAA except light red (10R 7/6)	
			223.9			
SS 3	7-13-16	12			**SAND, silty (SM)** - Red (2.5YR 5/6), moist, medium dense, nonplastic, -HCL	
			221.6	5		
SS 4	2-8-14	14			**SAND, with silty clay (SP-SC)** - Reddish yellow (5YR 7/6), moist, medium dense, nonplastic, -HCL	
SS 5	4-4-5	16		10	SAA except red (2.5YR 4/6), loose, low plasticity	
SS 6	6-10-14	17			SAA except red (2.5YR 4/8), damp, medium dense	
			214.1			
SS 7	16-25-23	18		15	**SAND, silty (SM)** - Reddish yellow (5YR 6/8), moist, dense, nonplastic, -HCL	
			210.1			
SS 8	25-35-28	18		20	**SAND, with silty clay (SP-SC)** - Reddish yellow (5YR 6/6), damp, very dense, nonplastic, -HCL	
			205.1			
SS 9	8-10-13	18		25	**SAND, clayey (SC)** - Light red (2.5YR 7/8), damp, medium dense, medium plasticity, -HCL	
SS 10	5-6-9	18		30	SAA except reddish yellow (7.5YR 6/6), moist, low plasticity	
SS 11	3-4-5	18		35	SAA except reddish yellow (5YR 7/8), loose, medium plasticity	
			190.1			
SS 12	5-4-4	10		40	**SAND, with silty clay (SP-SC)** - Reddish yellow (7.5YR 7/8), damp, loose, nonplastic, -HCL	
SS 13	2-3-1	4		45	SAA except reddish yellow (7.5YR 6/8), low plasticity	
SS	1-2-3	11			SAA except reddish yellow (7.5YR 7/8), moist, nonplastic to low plasticity	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1112A

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1112A

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	3-2-2	10		55	SAA except medium grained, low plasticity	
			170.1			
SS 16	1-3-2	5		60	**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), moist, loose, medium grained, nonplastic, -HCL	
SS 17	WOH/6"-2-2	14		65	SAA except very pale brown (10YR 8/4)	
			160.1			
SS 18	WOR/18"	7		70	**SAND, with silty clay (SP-SC)** - Yellow (10YR 7/6), moist, very loose, medium grained, nonplastic, -HCL	
SS 19	WOR/18"	4		75	SAA	
			149.6			
SS 20	18-5-4	18	148.1	80	**SILT, gravelly with sand (ML)** - Very pale brown (10YR 8/4), moist, loose, nonplastic, contains fragments of parent material, +HCL	
			145.1		**CLAY, silty, sandy (CL-ML)** - Grayish brown (2.5Y 5/2), moist, stiff, medium plasticity, +HCL	Top of Blue Bluff Marl at a depth of 82.0 feet
SS 21	5-9-12	18		85	**CLAY, silty with sand (CL-ML)** - Reddish yellow (7.5YR 7/6) and greenish gray (GLEY1 5/10Y), damp, very stiff, low plasticity, fine grained SAND, +HCL	
SS 22	15-19-22	18		90	SAA except dark greenish gray (4/5GY), hard, nonplastic to low plasticity, contains shell hash	
			135.1			Water level depth at end of 02/28/2007 = Ground surface
SS 23	10-15-25	18		95	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/10GY), damp, hard, low plasticity, contains shell hash, +HCL	Water level depth at beginning of 3/1/2007 = 70 feet
SS 24	11-17-50/5"	17		100	SAA except greenish gray (GLEY1 6/5GY)	
SS 25	50/5"	5		105	SAA except greenish gray (GLEY1 6/10Y), moist, nonplastic to low plasticity, contains shell fragments	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1112A**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1112A

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	30-17-21	18		110	SAA except light greenish gray (GLEY1 7/10Y), damp, low plasticity, contains minor shell hash	
SS 27	30-31-45	18		115	SAA except greenish gray (GLEY1 6/10Y)	
SS 28	20-15-40	18		120	SAA except light greenish gray (GLEY1 7/10Y)	
			105.1			
SS 29	31-46-30	18		125	**SILT, with sand (ML)** - Light greenish gray (GLEY1 7/10Y), damp, hard, nonplastic, +HCL	
			100.1			
SS 30	11-17-17	18		130	**CLAY, silty with sand (CL-ML)** - Light greenish gray (GLEY1 7/10Y), damp, hard, nonplastic, +HCL	
SS 31	15-17-21	18		135	SAA	
			90.1			
SS 32	26-28-19	18		140	**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 7/5GY), moist, hard, medium plasticity, +HCL	
			85.1			
SS 33	9-11-11	18		145	**SILT, with sand (ML)** - Light greenish gray (GLEY1 7/5GY), damp, very stiff, low plasticity, +HCL	
			80.1			Top off Still Branch Formation at a depth of 147.0 feet
SS 34	2-8-12	18	77.1	150	**SAND, silty (SM)** - Very dark greenish gray (GLEY2 3/10Y), moist, medium dense, nonplastic to low plasticity, -HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1112A**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-1113

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Mabie	N 1143901.4 E 620217.2	2/13/2007	2/14/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	170.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
250.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			250.0			
SS 1	3-5-6	12			*SAND, with silt (SP-SM) - Red (2.5YR 5/8), damp, medium dense, fine grained, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	10-8-9	15			SAA	
SS 3	4-4-4	12		5	SAA except red (2.5YR 4/8), moist, loose	
SS 4	3-3-3	13			SAA	
SS 5	3-4-5	10		10	SAA	
SS 6	3-4-5	8			SAA except yellowish brown (10YR 5/4), fine to medium grained	
SS 7	4-6-7	10		15	SAA except yellowish red (5YR 5/6), medium dense, fine grained	
			233.0			
SS 8	4-6-8	10		20	*SAND (SP) - Red (2.5YR 4/8), damp, medium dense, fine grained, nonplastic, -HCL	
SS 9	5-6-8	8		25	SAA	
SS 10	4-5-7	6		30	SAA	
			218.0			
SS 11	4-5-4	11		35	*CLAY, with sand (CL) - Brownish yellow (10YR 6/6), damp, stiff, nonplastic to low plasticity, -HCL	
			213.0			
SS 12	1-WOH/12"	7		40	SAND, silty (SM) - Brownish yellow (10YR 6/6), wet, very loose, fine grained, nonplastic, -HCL	
			208.0			
SS 13	WOH/18"	10		45	SILT, with sand (ML) - Light brownish gray (2.5Y 6/2), wet, very soft, nonplastic, -HCL	
			203.2			
SS	22-33-13	16			CLAY, silty with sand (CL-ML) - Light gray (2.5Y 7/2), wet, hard, low plasticity, contains	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1113

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-1113

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					shell hash, +HCL	Installed 3" steel casing to a depth of 50.0 feet
			198.0			
SS 15	3-3-4	18		55	**CLAY, silty (CL-ML)** - Light gray (5Y 7/2), moist, stiff, low plasticity, contains scarce shell fragments, +HCL	
SS 16	2-3-5	18		60	SAA	
SS 17	3-4-4	18		65	SAA except medium stiff	
SS 18	6-13-50/2"	14		70	SAA except hard	
			178.0			
SS 19	25-50/5"	8		75	**CLAY, silty with sand (CL-ML)** - Pale yellow (2.5Y 8/2), wet, hard, nonplastic to low plasticity, contains abundant shell hash, +HCL	
			173.0			
SS 20	6-12-23	18		80	**SAND, with silty clay (SP-SC)** - Light yellowish brown (2.5Y 6/4), wet, dense, nonplastic to low plasticity, contains shell hash, +HCL	
SS 21	7-20-24	18		85	SAA	Water level depth at end of 2/13/07 = Top of Casing
SS 22	18-19-25	15		90	SAA except light gray (2.5Y 7/2)	Water level depth at beginning of 2/14/07 = 31.42 feet
SS 23	14-10-18	15		95	SAA except medium dense, fine grained	
SS 24	11-18-18	16		100	SAA except dense	
SS 25	14-14-14	15		105	SAA	
			143.0			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1113**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-1113

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	24-20-30	18		110	**CLAY, silty (CL-ML)** - Light gray (2.5Y 7/2), wet, hard, low plasticity, contains shell hash, +HCL	
SS 27	12-14-37	18		115	SAA	
			133.0			
SS 28	7-8-12	18		120	**SAND, with clay (SP-SC)** - Yellow (10YR 7/6), wet, medium dense, nonplastic to low plasticity, contains shell fragments, +HCL	
			128.0			
SS 29	9-11-13	18		125	**SAND, with silty clay (SP-SC)** - Pale brown (10YR 6/3), wet, medium dense, fine grained, nonplastic to low plasticity, contains shell fragments	
			123.0			
SS 30	10-11-13	7		130	**SAND, with silt (SP-SM)** - Pale brown (10YR 6/3), wet, medium dense, fine grained, nonplastic, contains shell fragments, +HCL	
			118.0			
SS 31	18-36-43	1		135	**SAND (SP)** - Pale brown (10YR 6/3), wet, very dense, fine to medium grained, nonplastic, contains shell fragments, +HCL	
			113.0			
SS 32	50/4"	2		140	**SAND, with silty clay (SP-SC)** - Pale brown (10YR 6/3), wet, very dense, nonplastic to low plasticity, contains shell fragments and cemented SAND grains, +HCL	Top of Utley Limestone at a depth of 137.0 feet
			108.0			
SS 33	50/3"	0		145	**NO RECOVERY**	
SS 34	50/1"	0		150	**NO RECOVERY**	
			98.2			Top of Blue Bluff Marl at a depth of 151.75 feet
SS 35	10-50/5"	11		155	**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/10GY), moist, hard, low plasticity, contains scarce shell fragments, +HCL	
SS 36	50/5"	5		160	SAA	
SS	13-18-43	18			SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1113**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-1113

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
37						165			
SS 38		▲	17-15-28	18	80.0	170		SAA	
								Boring terminated at 170 feet	Water level depth at end of 2/14/07 = 38.42 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1113**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1116

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1143894.1 E 621264.7	12/14/2006	12/15/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	CME-850	3 Inches	165952	138.5

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
261.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			261.8			
SS 1	1-1-1	18			**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), damp, very loose, fine grained, rounded	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-1-1	18			SAA	
SS 3	1-2-3	18		5	SAA except light yellowish brown (10YR 6/4), wet, loose	
SS 4	2-2-4	15			SAA except very pale brown (10YR 7/4), damp	
SS 5	5-15-22	18	251.3	10	SAA except dense	
SS 6	15-18-21	18			***SAND, clayey (SC)** - Red (2.5YR 4/8), damp, dense, medium grained, rounded	
SS 7	14-18-22	18		15	SAA	
SS 8	10-14-18	14		20	SAA	
SS 9	15-17-20	15	234.8	25	SAA	
SS 10	10-10-20	18	229.8	30	**CLAY, with sand (CL)** - Red (2.5YR 4/8), reddish yellow (7.5YR 6/8), and pale yellow (5Y 8/2), damp, very stiff, medium plasticity	
SS 11	5-5-5	13	224.8	35	***SAND, clayey (SC)** - Yellowish brown (10YR 5/8), damp, loose, medium grained, subrounded	
SS 12	2-2-3	18	219.8	40	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/4), wet, loose, medium grained	
SS 13	6-3-5	18	214.8	45	**CLAY (CL)** - Pale yellow (5Y 8/3), damp, medium stiff, medium plasticity, +HCL	
SS	3-3-4	18			**CLAY, silty (CL-ML)** - Pale yellow (5Y 8/3), damp, medium stiff, medium plasticity, +HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1116

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1116

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	2-3-4	18		55	SAA	
SS 16	4-4-3	18		60	SAA except pale yellow (5Y 7/4)	
			199.8			
SS 17	24-26-25	17		65	**CLAY, gravelly (CL)** - Pale yellow (5Y 8/2), damp, hard, +HCL	
			194.8			
SS 18	8-4-6	18		70	**CLAY, silty (CL-ML)** - Pale yellow (5Y 8/3), damp, stiff, medium plasticity, +HCL	
SPT 19	7-12-20	18		75	SAA except hard, contains shell fragments	
			184.8			
SS 20	11-11-9	18		80	**CLAY, gravelly (CL)** - Pale yellow (5Y 8/2), damp, very stiff, contains shell fragments, +HCL	
			179.8			
SS 21	10-14-16	18		85	**CLAY, sandy with gravel (CL)** - Pale yellow (5Y 8/2), damp, very stiff, low plasticity, contains shell fragments, +HCL	
			174.8			
SS 22	12-14-24	18		90	**SAND, with clay (SP-SC)** - Very pale brown (10YR 8/2), damp, dense, fine grained, subrounded, +HCL	
			169.8			
SS 23	10-16-12	18		95	**CLAY, gravelly with sand (CL)** - Very pale brown (10YR 8/2), damp, very stiff, contains shell fragments, +HCL	
			164.8			
SS 24	13-16-13	18		100	**SAND, clayey (SC)** - Pale yellow (5Y 8/2), wet, medium dense, fine grained, contains shell fragments, +HCL	Water level depth at end of 12/14/06 = Ground surface
SS 25	30-25-27	17		105	SAA except pale yellow (2.5Y 8/2), dry, very dense	Water level depth at beginning of 12/15/06 = 27.0 feet
			154.8			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1116**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1116

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	13-12-14	13		110		**SAND, silty (SM)** - Pale yellow (2.5Y 8/3), wet, medium dense, medium grained, rounded, +HCL	
				149.8				
SS 27	☒	13-50/2"	8		115		**SAND, clayey (SC)** - Pale yellow (2.5Y 8/3), wet, very dense, medium grained, rounded, +HCL	
				144.8				Top of Utley Limestone at a depth of 117.0 feet
SS 28		50/0"	0		120		**NO RECOVERY**	
				139.8				Loss of circulation at a depth of 122.0 feet
SS 29	☒	WOH/18"	18		125		**SILT (ML)** - Light yellowish brown (2.5Y 6/4) and brownish yellow (10YR 6/8), damp, very soft, -HCL	
				134.8				Top of Blue Bluff Marl at a depth of 127.0 feet
SS 30	☒	13-17-50/4"			130		**SILT, with sand (ML)** - Greenish gray (GLEY1 5/1), dry, hard, +HCL	
				129.8				
SS 31	☒	22-25-37	18		135		**CLAY (CL)** - Greenish gray (GLEY1 5/1), dry, hard, medium plasticity, contains shell fragments, +HCL	
				124.8				
				123.3			**NO RECOVERY**	
SS 32		50/0"	0				Boring terminated at 138.5 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1116**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1117

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1143890.8 E 621628.4	1/31/2007	2/2/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	3 Inches	337153	149.3

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
263.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			263.9			
SS 1	1-1-1	15			**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), dry, very loose, fine grained, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-1-1	18			SAA	
SS 3	1-2-2	10			SAA except damp	
				5		
SS 4	2-2-2	11			SAA	
SS 5	3-4-9	10.5			SAA except very pale brown (10YR 7/3), medium dense	
			253.4	10		
SS 6	13-20-18	13			**SAND, clayey (SC)** - Red (2.5YR 4/8), damp, dense, fine grained, low plasticity	
SS 7	18-18-17	11			SAA	
				15		
SS 8	7-10-9	11			SAA except moist, medium dense, contains CLAY seams	
				20		
SS 9	5-2-8	13			SAA except yellowish red (5YR 5/8), fine to coarse grained	
				25		
SS 10	4-8-9	14			SAA	
				30		
			231.9			
SS 11	3-3-5	12			**SAND, with clay (SP-SC)** - Yellow (10YR 7/6), damp, loose, low plasticity, contains traces of phosphates	
				35		
SS 12	3-3-3	18			SAA except pale yellow (5Y 8/2), -HCL	
				40		
			221.9			
SS 13	8-11-11	18			**CLAY, silty (CL-ML)** - Pale yellow (5Y 7/4), dry to damp, very stiff, medium plasticity, contains traces of shell fragments, +HCL	
				45		
SS	7-14-12	18			SAA except greenish gray (GLEY1 5/5G), low plasticity	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1117

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1117

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								
SS 15	☒	7-8-8	18		55		SAA except pale yellow (5Y 7/4)	
SS 16	☒	16-50/3"	7		60		SAA except pale yellow (5Y 7/3), hard, contains many shell fragments	
				201.9				
SS 17	☒	23-29-29	12		65		**SAND, clayey (SC)** - Yellow (2.5Y 7/6), dry to damp, very dense, fine to medium grained, low plasticity, contains many shell fragments, +HCL	
SS 18	☒	7-23-35	16		70		SAA except pale yellow (5Y 8/3), contains trace shell fragments with cemented SAND	
				191.9				
SS 19	☒	12-13-12	18		75		**SAND, with clay (SP-SC)** - Pale yellow (5Y 8/2), dry to damp, medium dense, fine grained, low plasticity, contains trace of phosphate and cemented grains, +HCL	
				186.9				
SS 20	☒	10-12-18	12		80		**SAND, clayey (SC)** - Pale yellow (5Y 8/3), dry to damp, dense, fine to coarse grained, low plasticity, contains traces of phosphate grains and shell fragments, +HCL	
SS 21	☒	9-11-12	13		85		SAA except olive yellow (2.5Y 6/8), medium dense	
SS 22	☒	30-13-20	15		90		SAA except pale yellow (2.5Y 8/4), dense, fine to medium grained, contains cemented SAND	
				171.9				
SS 23	☒	8-7-7	18		95		**CLAY, silty with sand (CL-ML)** - Pale yellow (5Y 8/3), dry to moist, stiff, fine grained SAND, contains many shell fragments and trace phosphates, +HCL	
				166.9				
SS 24	☒	32-9-17	16.5		100		**SAND, clayey (SC)** - Pale yellow (2.5Y 8/2), moist, medium dense, fine to coarse grained, contains trace shell fragments and phosphate grains, +HCL	
SS 25	☒	9-15-18	16		105		SAA except pale yellow (5Y 8/2), contains CLAY seams	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1117**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1117

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	5-9-11	15		110	SAA except fine to medium grained, contains many shell fragments	
SS 27	5-4-11	10.5		115	SAA	
			146.9			
SS 28	3-8-10	18		120	**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/5GY), dry to damp, very stiff, low plasticity, contains traces of shell fragments, +HCL	Loss of circulation from depths of 118.0 to 119.0 feet
			140.4			
SS 29	12-22-26	18		125	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, medium plasticity, contains traces of shell fragments and phosphates	Top of Blue Bluff Marl at a depth of 123.5 feet
SS 30	9-50/1"	7		130	SAA	
SS 31	50/1"	1		135	SAA	
SS 32	50/3"	3		140	SAA except low plasticity	
SS 33	9-17-50/4"	16		145	SAA	
SS 34	32-50/3"	9	114.6		SAA Boring terminated at 149.25 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1117**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1118

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1143885.9 E 622008.0	12/12/2006	12/13/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	CME-850	3 Inches	165952	149.4

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
257.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			257.9			
SS 1	6-8-12	13			**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), damp, medium dense, fine grained, rounded	Top of Barnwell Group at a depth of 0.0 feet
SS 2	10-10-14	18			SAA	
			254.4			
SS 3	4-8-16	17		5	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8) and yellowish red (5YR 4/6), dry, medium dense, contains pale yellow (5Y 7/3) clay lenses	
SS 4	14-16-20	17			SAA except red (2.5YR 5/8), damp, dense, medium grained, rounded	
SS 5	9-15-18	18		10	SAA except red (2.5YR 4/8)	
SS 6	14-14-20	17			SAA except red (2.5YR 5/8)	
SS 7	10-15-17	17		15	SAA	
SS 8	9-10-12	15		20	SAA except medium dense	
SS 9	8-10-13	18		25	SAA except reddish yellow (5YR 6/8)	
SS 10	6-7-8			30	SAA except brownish yellow (10YR 6/8), wet, fine grained	
			225.9			
SS 11	2-1-2	18		35	**CLAY, sandy (CL)** - Pale yellow (5Y 8/3), damp, soft, medium plasticity	
			220.9			
SS 12	6-40-40	17		40	**CLAY, with silt (CL)** - Pale yellow (5Y 8/3), damp, hard, medium plasticity, + HCL	
			214.4			
SS 13	9-10-13	18		45	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/1), dry, very stiff, +HCL	
			210.9			
SS	40-50/1"	7			**CLAY, silty with gravel (CL-ML)** - Pale yellow (5Y 8/3), dry, hard, gravel consists of	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1118

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1118

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					shell fragments, +HCL	
SS 15	16-25-14	18		55	SAA	
			200.9			
SS 16	15-16-15	15		60	**SAND, clayey with gravel (SC)** - Yellow (2.5Y 8/6), damp, dense, gravel consists of shell fragments, +HCL	
SS 17	14-11-15	18		65	SAA except wet, medium dense, fine grained	
			190.9			
SS 18	8-9-13	18		70	**CLAY, with silt (CL-ML)** - Pale yellow (5Y 8/3), damp, very stiff, medium plasticity, +HCL	
			185.9			
SS 19	14-15-18	18		75	**CLAY, sandy with gravel (CL-ML)** - Pale yellow (5Y 8/4), damp, hard, gravel consists of shell fragments, +HCL	
SS 20	20-19-22	17		80	SAA	Water level depth at end of 12/12/2006 = Ground surface
			175.9			
SS 21	13-13-20	18		85	**SAND, clayey with gravel (SC)** - Pale yellow (5Y 8/2), damp, dense, gravel consists of shell fragments, medium grained, sub-rounded, +HCL	Water level depth at beginning of 12/13/2006 = 34.0 feet
SS 22	50/1"	1		90	SAA	
SS 23	17-17-30	18		95	SAA	
			160.9			
SS 24	18-20-28	17		100	**SAND, clayey (SC)** - Pale yellow (5Y 8/3), wet, dense, fine grained, rounded, -HCL	
			155.9			
SS 25	30-15-50/5"	17		105	**CLAY, sandy (CL)** - Pale yellow (2.5Y 8/4) and yellow (2.5Y 8/6), damp, hard, +HCL	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1118**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1118

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		6-8-50/5"	15		110		SAA except pale yellow (2.5Y 8/3)	
				144.9				
SS 27		21-32-26	18		115		**CLAY, with silt (CL)** - Greenish gray (GLEY1 5/1), dry, hard, medium plasticity, +HCL	Top of Blue Bluff Marl at a depth of 113.0 feet
SS 28		17-22-28	18		120		SAA	
				135.9				
SS 29		50/1"	0		125		**NO RECOVERY**	
				130.9				
SS 30		50/2"	2		130		**CLAY, with silt (CL)** - Greenish gray (GLEY1 5/1), dry, hard, medium plasticity, +HCL	
SS 31		15-18-50/4"	16		135		SAA	
SS 32		30-22-50/5"	17		140		SAA except greenish gray (GLEY1 6/1), damp	
				115.9				
SS 33		50/2"	0		145		**NO RECOVERY**	
				110.9				
SS 34		28-50/5"	11	108.5			**CLAY, with silt (CH)** - Greenish gray (GLEY1 5/1), damp, hard, high plasticity, +HCL Boring terminated at 149.42 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1118**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1119

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1143888.3 E 622333.8	1/16/2007	1/17/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
223.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			223.6			
SS 1	2-1-1	6			**SAND, with silt (SP-SM)** -Brown (7.5YR 4/4), moist, very loose, fine grained, nonplastic, contains organics	Top of Barnwell Group at a depth of 0.0 feet
			222.1			
SS 2	2-6-6	17			**CLAY, with sand (CL)** - Pale yellow (5Y 7/4), moist, stiff, very fine grained SAND, low plasticity	
SS 3	3-4-5	15		5	SAA except contains organics	
SS 4	5-4-5	17			SAA	
			215.1			
SS 5	9-8-7	15		10	**CLAY (CL)** - Greenish gray (GLEY1 6/5G), moist, stiff, low plasticity, contains traces of fine SAND and angular GRAVEL, +HCL	
SS 6	4-6-8	17			SAA	
SS 7	6-7-8	18		15	SAA except pale yellow (5Y 7/3), contains traces of shells and abundant laminations	
SS 8	11-14-26	18		20	SAA except pale yellow (5Y 7/4), hard, contains shell hash and no laminations	
			201.8			
SS 9	9-7-6	18		25	**CLAY, with sand (CL)** - Pale yellow (5Y 7/4), moist, stiff, low plasticity, +HCL	
			196.8			End logging by R. Clark Begin logging by B. Mabie
SS 10	4-5-10	18		30	**CLAY (CL)** - Pale yellow (5Y 8/4), moist, stiff, low plasticity, contains shell hash, +HCL	
			191.8			
SS 11	8-11-11	18		35	**SAND, with clay (SP-SC)** - Olive yellow (2.5Y 6/8), moist, medium dense, low plasticity, contains shell hash, +HCL	
SS 12	5-8-11	18		40	SAA except pale yellow (5Y 8/3), medium grained, contains some iron staining	
SS 13	6-8-9	16		45	SAA except yellow (2.5Y 7/8), nonplastic to low plasticity, contains shell fragments	
			176.8			
SS	13-13-9	9			**CLAY, with sand (CL)** - Pale yellow (2.5Y 8/4), wet, very stiff, fine grained SAND,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1119

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 3	HOLE NO. B-1119

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					medium plasticity, contains shell hash, +HCL	
SS 15	9-11-12	12		55	SAA except contains more shell hash	
			166.8			
SS 16	5-7-8	15		60	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 7/3), wet, medium dense, medium grained, low plasticity, contains shell hash, +HCL	
			161.8			
SS 17	5-4-6	18		65	**CLAY, with sand (CL)** - Brownish yellow (10YR 6/8), moist, stiff, low plasticity, contains shell hash, +HCL	
			156.8			
SS 18	42-50/5"	11		70	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), wet, very dense, medium grained, low plasticity, contains shell hash, +HCL	Top of Utley Limestone at a depth of 66.8 feet Installed 3" steel casing to a depth of 70.0 feet
SS 19	50/4"	3		75	SAA except pale yellow (2.5Y 8/3), nonplastic, contains cemented SAND and shell hash	
			146.8			
SS 20	11-50/3"	7		80	**SAND, silty (SM)** - Pale yellow (2.5Y 8/4), moist, very dense, fine to coarse grained, nonplastic to low plasticity, contains shell hash, +HCL	
			141.8			
SS 21	6-23-20	18		85	**SILT (ML)** - Greenish gray (GLEY1 4/5G), moist, hard, nonplastic to low plasticity, contains shell fragments, +HCL	Top of Blue Bluff Marl at a depth of 81.75 feet Advanced casing to 85.0 feet Water level depth at end of 01/16/07 = 21.0 feet Water level depth at beginning of 01/17/07 = 24.0 feet
SS 22	8-8-11	18		90	SAA except very stiff	
SS 23	9-12-12	18		95	SAA except low plasticity	
SS 24	8-12-31	18		100	SAA except hard	
SS 25	34-41-46	18		105	SAA	

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-1119

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1119

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	19-16-38	18		110		SAA except greenish gray (GLEY1 6/5GY), contains traces of CLAY	
SS 27	☒	11-35-17	18		115		SAA	
SS 28	☒	50/5"	4		120		SAA except nonplastic, cemented	
SS 29	☒	8-13-14	18		125		SAA except greenish gray (GLEY1 5/5G), very stiff, low plasticity, not cemented	
				96.8				
SS 30	☒	9-12-29	18		130		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5G), moist, hard, low plasticity, +HCL	
				91.8				
SS 31	☒	11-15-43	18		135		**SILT (ML)** - Greenish gray (GLEY1 6/10GY), moist, hard, nonplastic to low plasticity, +HCL	
				86.8				
SS 32	☒	11-18-16	18		140		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5G), moist, hard, low plasticity, contains shell fragments, +HCL	
				81.8				
SS 33	☒	9-9-13	18		145		**SILT (ML)** - Greenish gray (GLEY1 5/5G), moist, very stiff, low plasticity, contains shell fragments, +HCL	
				76.8				
SS 34	☒	14-21-25	18	73.6	150		**SAND, clayey (SC)** - Greenish black (GLEY1 2.5/5GY), wet, dense, fine to medium grained, nonplastic, +HCL	
							Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1119**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1120

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1143893.1 E 622558.5	2/28/2007	3/6/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Melvin-MACTEC	CME-75	3 Inches	219505	149.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
227.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			227.2			
SS 1	8-18-18	14			**SAND, silty (SM)** - Red (2.5YR 4/8), dry, dense, contains GRAVEL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	14-17-27	14			SAA	
			223.9			
SS 3	8-13-9	8			**GRAVEL, silty (GM)** - Brown and gray (7.5YR 6/6 to 4/1)	
			221.7	5		
SS 4	11-12-17	9			**SAND, silty (SM)** - Yellowish red (5YR 5/8), dry, medium dense	
			219.2			
SS 5	7-10-17	9		10	**SAND, clayey (SC)** - Yellow (10YR 7/8) to red (5YR 5/8), dry, medium dense	
SS 6	18-15-12	11			SAA except brown (7.5YR 4/4)	
SS 7	6-8-12	10		15	SAA except dark gray (5YR 4/1), contians reddish brown CLAY lens	
			210.2			
SS 8	3-3-6	18		20	**CLAY (CL)** - Red (2.5YR 5/8) and green (GLEY1 6/10GY), damp, stiff	
			205.2			
SS 9	7-8-6	14		25	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), dry, medium dense, contains CLAY lenses	
			200.2			
SS 10	2-2-3	13		30	**SILT (ML)** - Pale yellow (5Y 8/4), dry, medium stiff	
			195.2			
SS 11	4-4-3	18		35	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), dry, loose, contains CLAY lenses	
SS 12	2-4-3	9		40	SAA except yellow (2.5Y 8/6)	
SS 13	3-2-3	12		45	SAA except yellow (2.5Y 7/3), moist, -HCL	
SS	14-9-12	18			SAA except pale yellow (2.5Y 8/2), medium dense, +HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1120

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 3	HOLE NO. B-1120

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						Casing driven to 50.0 feet
SS 15	10-14-17	10		55	SAA except pink (7.5YR 7/3), dense	
			170.2			
SS 16	12-15-21	10		60	**GRAVEL, clayey (GC)** - Pink (7.5YR 7/3), moist, dense, contains shells, +HCL	
SS 17	27-20-18	11		65	SAA	
			160.2			
SS 18	27-50/2"	5		70	**SAND, clayey with gravel (SC)** - Pinkish white (7.5YR 8/2), moist, very dense, +HCL	
SS 19	WOH/12"-3	10		75	SAA except very pale brown (10YR 8/3), wet, loose	Loss of circulation at a depth of 73.5 feet
			150.2			
SS 20	7-3-1	4		80	**SILT (ML)** - Light olive brown (2.5Y 5/4), wet, soft, contains minor shell hash, +HCL	
			145.2			Top of Utley Limestone at a depth of 82.0 feet
SS 21	50/5"	5		85	**GRAVEL, silty (GM)** - Very pale brown (10YR 8/2), wet, very dense, contains shells, +HCL	
			140.4			Top of Blue Bluff Marl at a depth of 86.75 feet
SS 22	20-17-18	18		90	**CLAY (CL)** - Greenish gray (GLEY1 5/1/10Y), dry to damp, hard, +HCL	
SS 23	16-30-45	18		95	SAA	
SS 24	50/3"	3		100	SAA	Installed 3" steel casing to a depth of 90.0 feet Water level depth at end of 2/28/07 = 75.0 feet
			125.2			
SS 25	15-25-30	18		105	**SILT (ML)** - Greenish gray (GLEY1 5/1/5GY), moist, hard, +HCL	Water level depth at beginning of 3/1/07 = 75.0 feet

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-1120

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1120

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	15-29-37	18		110	SAA	
SS 27	16-24-38	18		115	SAA	
			110.2			
SS 28	50/4"	4		120	**CLAY (CL)** - Greenish gray (GLEY1 6/1/10Y), hard, +HCL	
SS 29	50/5"	5		125	SAA	
			100.2			
SS 30	17-12-18			130	**SILT (ML)** - Greenish gray (GLEY1 6/1/10Y), hard, +HCL	
SS 31	17-50/3"			135	SAA	
SS 32	15-23-40	18		140	SAA	Water level depth at end of 3/5/07 = 53.0 feet
SS 33	20-27-28	18		145	SAA except damp	Water level depth at beginning of 3/6/07 = 78.0 feet
SS 34	16-30-50/4"	16	77.4		SAA except contains shell hash	
					Boring terminated at 149.83 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1120**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1121

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1143575.6 E 620216.3	2/8/2007	2/9/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
241.3	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			241.3			
SS 1	5-6-6	9			*SAND, silty (SM) - Red (2.5YR 5/8), damp, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	6-8-9	10			SAA except pale yellow (2.5Y 8/4)	
SS 3	6-8-9	10		5	SAA except very dark grayish brown (10YR 3/2)	
SS 4	8-11-16	11				
SS 5	14-16-20	13	230.8	10	SAA except yellowish red (5YR 4/6), moist, dense	
SS 6	8-12-13	9	228.3		SAND, clayey (SC) - Yellowish red (5YR 4/6), moist, medium dense, fine grained, nonplastic to low plasticity	
SS 7	4-5-5	10		15	SAND, with silt (SP-SM) - Yellowish brown (10YR 5/6), moist, loose, fine grained, contains trace CLAY	Installed 3' steel casing to a depth of 13.5 feet
SS 8	11-13-20	9		20	SAA except yellowish red (5YR 5/6), dense	
			219.3			
SS 9	3-5-7	13		25	SAND, clayey (SC) - Yellowish red (5YR 5/8), moist, medium dense, fine grained	
			214.3			
SS 10	4-5-6	10		30	SAND, with silt (SP-SM) - Yellowish brown (10YR 5/6), moist, medium dense, fine grained, contains trace CLAY	
			209.3			
SS 11	1-1-3	14		35	CLAY, silty (CL-ML) - Pale yellow (2.5Y 7/4), wet, soft, medium to high plasticity, contains traces of very fine SAND	
			204.8			
SS 12	1-1-2	16		40	SAND, silty (SM) - Pale yellow (5Y 8/2), wet, very loose, fine grained, low plasticity, contains trace CLAY, +HCL	
			199.3			
SS 13	8-6-3	18		45	CLAY, silty (CL-ML) - Pale yellow (5Y 7/3), wet, stiff, high plasticity, +HCL	
SS	4-4-4	18			SAA except pale yellow (5Y 8/3), medium to high plasticity	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1121

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1121

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	4-5-5	18	184.3	55	SAA	
SS 16	4-13-23	18	179.3	60	**SAND, clayey (SC)** - Pale yellow (5Y 8/2), wet, dense, fine grained, medium to high plasticity, contains trace shell fragments, +HCL	
SS 17	5-6-7	18	174.3	65	**CLAY, silty with sand (CL-ML)** - Pale yellow (5Y 8/4), wet, stiff, medium to high plasticity, very fine SAND, +HCL	
SS 18	7-9-9	18	169.3	70	**CLAY, with sand (CH)** - Yellow (5Y 8/6), wet, very stiff, medium to high plasticity, fine grained SAND, contains shell fragments up to 1/8", +HCL	Water level depth at end of 2/8/07 = Ground Surface
SS 19	10-43-20	18	164.3	75	**CLAY (CH)** - Pale yellow (5Y 8/3), wet, hard, medium plasticity, contains shell fragments up to 1/2", +HCL	Water level depth at beginning of 2/9/07 = 17.5 feet
SS 20	50/5"	4	159.3	80	**CLAY, sandy (CL)** - Pale yellow (5Y 8/3), wet, hard, low to medium plasticity, fine grained SAND, contains trace fine shell fragments, +HCL	
SS 21	8-17-40	10	154.3	85	**SAND, clayey (SC)** - Pale yellow (5Y 8/3), wet, very dense, fine grained, nonplastic to low plasticity, contains shell fragments up to 1/2", +HCL	
SS 22	10-11-13	13	149.3	90	**SAND, with clay (SP-SC)** - Pale yellow (5Y 8/4), wet, medium dense, fine to medium grained, +HCL	
SS 23	18-20-15	11	144.3	95	**SAND, clayey (SC)** - Pale yellow (5Y 8/3), wet, dense, fine grained, nonplastic, contains trace shell fragments up to 1/4" and shell hash lenses up to 1" thick, +HCL	
SS 24	5-25-22	18		100	**SAND, with silt (SP-SM)** - Very pale brown (10YR 8/4), wet, dense, fine to medium grained, +HCL	
SS 25	5-7-50/4"	16		105	SAA except very pale brown (10YR 8/2), very dense	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1121**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1121

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	9-8-8	18		110	SAA except medium dense, medium grained, contains shell fragments up to 1/4"	
SS 27	8-12-10	16		115	SAA except fine grained, contains trace shell fragments up to 1/8"	
SS 28	9-11-12	14		120	SAA except pale yellow (2.5Y 8/3), contains no shell fragments	
SS 29	6-10-12	18		125	SAA except contains traces of shell fragments	
			114.3			Top of Utley Limestone at a depth of 127.0 feet
SS 30	50/3"	1		130	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/4), wet, very dense, fine grained, nonplastic to low plasticity, contains cemented SAND in bottom 1/4", +HCL	
			109.3			
SS 31	50/.5"	0		135	**NO RECOVERY**	
			104.3			
SS 32	50/5.5"	5		140	**CLAY, sandy (CH)** - Pale yellow (2.5Y 8/2), wet, hard, medium to high plasticity, fine grained SAND, contains some fine shell fragments, +HCL	
			98.8			Top of Blue Bluff Marl at a depth of 142.5 feet
SS 33	10-14-17	18		145	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10GY), wet, hard, medium plasticity, +HCL	
SS 34	13-14-18	18			SAA	
			91.3	150	Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1121**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1123

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1143575.4 E 620922.0	1/25/2007	1/30/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	3 Inches	337153	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
241.3	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			241.3			
SS 1	3-5-6	18			**SAND, silty (SM)** - Strong brown (7.5YR 5/8), moist, medium dense, fine grained, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-4-4	15			SAA except red (2.5YR 5/8), damp, loose	
SS 3	3-4-4	8		5	SAA	
			235.3			
SS 4	2-3-3	11			***SAND, with silt (SP-SM)** - Red (2.5YR 5/8), damp, loose, fine grained, nonplastic	
SS 5	5-7-8	8			SAA except medium dense	
			230.8	10		
SS 6	5-8-8	13			**SAND, clayey (SC)** - Red (10R 4/8), damp, medium dense, fine grained, low plasticity	
SS 7	5-8-8	13		15	SAA	
SS 8	6-9-11	12		20	SAA	
SS 9	7-10-10	12		25	SAA	
SS 10	7-9-11	14		30	SAA except contains some coarse grains	
			209.3			
SS 11	7-13-10	8		35	**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), moist, medium dense, fine to coarse grained, low plasticity	
			204.3			
SS 12	4-4-8	13		40	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), moist, medium dense, fine to coarse grained, low plasticity	
SS 13	2-4-5	12		45	SAA except brownish yellow (10YR 6/8)	
			194.3			
SS	2-4-4	18			**CLAY, silty with sand (CL-ML)** - Brownish yellow (10YR 6/6), moist, medium stiff,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1123

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1123

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					medium plasticity, contains traces of shell fragments, -HCL	
SS 15	2-4-4	18		55	SAA except olive yellow (2.5Y 6/8)	
			184.3			
SS 16	1-7-8	14		60	**SAND, clayey (SC)** - Yellow (5Y 7/6), moist, medium dense, fine to medium grained, low plasticity, -HCL	Water level depth at end of 1/25/07 = Top of Casing
SS 17	5-7-7	10		65	SAA except pale yellow (2.5Y 8/4), damp	Water level depth at beginning of 1/26/07 = 12.0 feet
			174.3			
SS 18	7-13-16	8		70	**SAND, with clay (SP-SC)** - Yellow (10YR 7/6), damp, medium dense, fine to medium grained, low plasticity, -HCL	
			169.3			
SS 19	7-7-8	12.5		75	**SAND, clayey (SC)** - Pale yellow (2.5Y 7/4), damp, medium dense, fine to medium grained, low plasticity, -HCL	
SS 20	7-8-8	18		80	SAA except yellow (2.5Y 7/6), fine grained	
			157.8			
SS 21	50/5"	5		85	**GRAVEL, with clay and sand (GP-GC)** - Very pale brown (10YR 8/2), moist, very dense, fine to medium grained SAND, contains shell fragments and cemented SAND, +HCL	
			154.3			
SS 22	5-6-10	18		90	**SAND, clayey (SC)** - Yellow (2.5Y 7/6), moist, medium dense, fine grained,low plasticity, contains CLAY seams, -HCL	
			149.3			
SS 23	12-27-30	11		95	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/4), moist, very dense, fine to medium grained, -HCL	
			144.3			Top of Utley Limestone at a depth of 97.0 feet
SS 24	50/1"	0		100	**NO RECOVERY**	
			139.3			
SS 25	50/3"	3		105	**GRAVEL, with clay (GP-GC)** - Very pale brown (10YR 8/2), wet, very dense, fine to coarse grained SAND, contains shell fragments, +HCL	Loss of circulation at a depth of 103.5 feet Installed 4" steel casing to a depth of

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	B-1123

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1123

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
				132.8				105.0 feet
SS 26	☒	15-50/2"	5.5		110		**CLAY, silty (CL-ML)** Dark greenish gray (GLEY1 4/10GY), dry to damp, hard, contains traces of shell fragments, +HCL	Top of Blue Bluff Marl at a depth of 108.5 feet
SS 27	☒	16-50/6"	12		115		SAA except dark greenish gray (GLEY1 4/5GY)	Water level depth at end of 1/26/07 = Top of Casing
SS 28	☒	24-50/1"	7		120		SAA except greenish gray (GLEY1 5/5GY), also contains traces of phosphate grains	
SS 29	☒	30-21-50/2"	14		125		SAA	
SS 30	☒	12-17-50/3"	15		130		SAA	
SS 31	☒	17-39-50/1"	13		135		SAA	
SS 32	☒	9-50/6"	12		140		SAA	
SS 33	☒	24-23-22	18		145		SAA	
SS 34	☒	19-34-20	18	91.3	150		SAA except light greenish gray (GLEY1 7/5GY) Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1123**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1124

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1143627.6 E 621421.6	1/23/2007	1/25/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	3 Inches	337153	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
241.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			241.2			
SS 1	5-5-8	15.5	239.7		**GRAVEL, with sand (GP)** - Red (10R 5/8), damp, medium dense	Top of Fill at a depth of 0.0 feet
SS 2	6-7-10	13.5			***SAND, with silt (SP-SM)** - Red (10R 5/8), damp, medium dense, fine grained, nonplastic	Top of Barnwell Group at a depth of 1.5 feet
SS 3	5-10-19	13		5	SAA except strong brown (7.5YR 5/6), moist	
SS 4	6-12-14	8			SAA except brownish yellow (10YR 6/6)	
SS 5	3-4-4	8.5		10	SAA except loose	
SS 6	4-6-10	9	228.2		SAA	
SS 7	9-12-14	13		15	***SAND, clayey (SC)** - Red (2.5YR 5/6), moist, medium dense, fine grained	
SS 8	8-10-12	14		20	SAA except red (10R 4/8)	
SS 9	5-10-12	14		25	SAA	
SS 10	6-8-8	12		30	SAA, except Red (2.5YR 4/8)	
SS 11	4-4-4	12		35	SAA except loose, fine to coarse grained, low plasticity	
SS 12	3-4-3	17		40	SAA	
SS 13	4-5-4	18		45	SAA except yellowish red (5YR 5/8)	
			194.5			
SS	3-3-4	18			**CLAY, silty with sand (CL-ML)** - Very pale brown (10YR 7/4), medium stiff, low plasticity,	Loss of circulation at a depth of 48.0 feet

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1124

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1124

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					-HCL	
SS 15	2-3-4	18		55	SAA except yellow (2.5Y 7/6)	
SS 16	3-3-4	18		60	SAA	
			179.5			
SS 17	5-8-5	18		65	**SAND, clayey (SC)** - Yellowish brown (10YR 5/8), medium dense, fine grained, low plasticity, -HCL	
SS 18	7-9-11	14		70	SAA except yellow (2.5Y 7/8)	
SS 19	8-9-10	16		75	SAA except brownish yellow (10YR 6/8)	
			164.5			
SS 20	8-11-11	13		80	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/6), damp, medium dense, fine to medium grained, low plasticity, -HCL	
SS 21	4-4-8	18		85	SAA except yellow (10YR 7/6)	
SS 22	8-12-13	14		90	SAA except very pale brown (10YR 7/3)	
			147.7			
SS 23	7-11-11	16		95	**SAND, silty (SM)** - Light greenish gray (GLEY1 8/N), moist, medium dense, fine to medium grained, contains shell fragments, +HCL	Loss of circulation at a depth of 95.0 feet
			144.2			
SS 24	21-50/1"	7		100	**SILT (ML)** - Very dark grayish brown (10YR 3/2), moist, very stiff, contains shell fragments SAA except greenish gray (GLEY1 5/10GY), dry, hard, contains traces of shell fragments, +HCL	Top of Blue Bluff Marl at a depth of 97.0 feet
SS 25	14-50/5"	11		105	SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1124**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1124

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	X	10-17-40	18		110		SAA except dark greenish gray (GLEY1 4/5GY), low plasticity	
				129.2				
SS 27	X	15-17-28	18		115		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10Y), dry to damp, hard, medium plasticity, contains shell fragments, +HCL	
SS 28	X	11-50/6"	12		120		SAA	
SS 29	X	11-18-39	18		125		SAA except greenish gray (GLEY1 5/10GY)	
SS 30	X	17-50/5"	11		130		SAA except dark greenish gray (GLEY1 4/5GY)	Water level depth at beginning of 01/25/07 = 45.0 feet
SS 31	X	19-37-22	18		135		SAA except greenish gray (GLEY1 5/5GY)	
SS 32	X	11-50/5"	11		140		SAA	
SS 33	X	10-12-17	18		145		SAA except very stiff	
SS 34	X	16-19-30	18	91.2	150		SAA except hard Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1124**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1125

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Gandy	N 1143586.8 E 621628.2	1/19/2007	1/23/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	4 Inches	337153	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
241.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			241.0			
SS 1	2-3-7	18			**SAND, silty (SM)** - Red (10R 5/8), damp, medium dense, fine grained, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	8-8-10	17	238.0		SAA except reddish brown (2.5YR 4/4)	
SS 3	9-12-17	12	235.5	5	**SAND, silty with gravel (SM)** - Red (2.5YR 4/6), damp, medium dense, fine grained, nonplastic	
SS 4	8-15-22	15			***SAND, with silt and gravel (SP-SM)** - Red (2.5YR 4/6), damp, dense, fine grained, nonplastic	
SS 5	5-12-21	10		10	SAA except moist	Water level depth at end of 01/22/07 = Ground surface
SS 6	8-16-18	9.5	230.0		**SAND, silty (SM)** - Strong brown (7.5YR 5/6), moist, dense, fine grained, nonplastic	
SS 7	7-14-10	12	228.0	15	**SAND, clayey (SC)** - Yellowish red (5YR 5/8), damp, medium dense, fine grained, low plasticity	
SS 8	5-8-11	14.5		20	SAA except reddish yellow (7.5YR 6/8), moist, fine to medium grained, contains 2" clay seam	
			219.2			
SS 9	4-4-5	15		25	***SILT, with sand (MH)** - Brownish yellow (10YR 6/6), damp, stiff, high plasticity	
SS 10	3-4-4	18		30	SAA except very pale brown (10YR 7/4), moist, medium stiff	
			209.2			
SS 11	3-3-3	18		35	**SILT (ML)** - Very pale brown (10YR 7/3), damp, medium stiff, low plasticity	
			204.2			
SS 12	WOH/6"-1-1	13		40	**CLAY, silty (CL-ML)** - Very pale brown (10YR 7/4), moist, soft, medium plasticity, contains traces of SAND	
			199.2			
SS 13	3-3-3	10.5		45	**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/8), moist, loose, fine grained, low plasticity, -HCL	
			194.5			
SS	3-10-10	15			**CLAY, silty with sand (CL-ML)** - Very pale brown (10YR 8/4), moist, very stiff, low	Loss of circulation at a depth of 48.5 feet

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1125

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1125

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					plasticity, contains shell hash, +HCL	Water level depth at end of 01/19/07 = Ground surface
SS 15	5-8-9	18		55	SAA except pale yellow (2.5Y 8/4), damp, medium plasticity	Water level depth at end of 01/19/07 = Ground surface Reamed hole to a depth of 50.0 feet using a 4" drill bit. Installed 4" steel casing to a depth of 50.0 feet
SS 16	7-12-14	17		60	SAA except pale yellow (2.5Y 8/3)	
			179.2			
SS 17	8-16-25	16		65	**SAND, clayey (SC)** - Pale yellow (2.5Y 8/2), damp, dense, fine to medium grained, low plasticity, contains abundant shell fragments, +HCL	
			174.2			
SS 18	14-23-20	15		70	**SAND, with clay and gravel (SP-SC)** - Pale yellow (2.5Y 8/2), moist, dense, fine to medium grained, low plasticity, contains abundant shell fragments, +HCL	
SS 19	6-7-9	18		75	SAA except very pale brown (10YR 8/3), medium dense, fine grained	
			164.2			
SS 20	10-10-20	18		80	**SAND, with clay (SP-SC)** - Very pale brown (10YR 8/2), damp, dense, fine grained, low plasticity, +HCL	
SS 21	27-50/2"	8		85	SAA except very pale brown (10YR 8/3), very dense	
			154.2			Top of Utley Limestone at a depth of 86.8 feet
SS 22	50/5"	5		90	**GRAVEL, with clay and sand (GP-GC)** - Very pale brown (10YR 8/4), wet, very dense, fine grained SAND, GRAVEL consists of shell fragments, +HCL	
			149.2			
SS 23	17-13-50/4"	12		95	**SAND, with silt and gravel (SP-SM)** - Very pale brown (10YR 7/4), moist, dense, medium to coarse grained, contains abundant shell hash and fragments, +HCL	
			144.5			Top of Blue Bluff Marl at a depth of 96.5 feet
SS 24	9-14-50/3"	14		100	**SILT (ML)** - Greenish gray (GLEY1 6/1/10Y), dry, hard, contains minor shell hash, +HCL	
SS 25	9-11-16	18		105	SAA except greenish gray (GLEY1 5/1/10Y), very stiff	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1125**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1125

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		15-14-18	18		110		SAA except dry to damp, hard, low plasticity	
				129.2				
SS 27		7-10-15	18		115		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/1/10Y), damp, very stiff, medium plasticity, +HCL	
SS 28		9-11-18	18		120		SAA except hard	
SS 29		21-50/4"	10		125		SAA except contains trace of shell hash	
SS 30		12-23-44	18		130		SAA	
				109.2				
SS 31		50/5"	5		135		**SILT, sandy (ML)** - Greenish gray (GLEY1 6/1/10Y), dry, hard, +HCL	
				104.2				
SS 32		16-50/4"	10		140		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/1/10Y), damp, hard, low plasticity, +HCL	
SS 33		15-16-14	18		145		SAA	
SS 34		9-12-16	18	91.0	150		SAA except very stiff, medium plasticity	
							Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1125**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1126

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1143567.7 E 621980.4	1/5/2007	1/10/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.9			
SS 1	9-10-10	13	219.4		**GRAVEL (GP)** - Surface gravel	Top of Fill a depth of 0.0 feet
SS 2	7-10-10	16	216.6		**SAND (SP)** - Red (10R 4/6), dry, medium dense SAA except red (2.5YR 4/8)	Top of Barnwell Group at a depth of 0.5 feet
SS 3	9-13-17	15	214.4	5	**SAND, clayey (SC)** - Red (2.5YR 4/8) and pale yellow (10YR 8/4), dry, medium stiff	
SS 4	14-13-13	11	211.9		**SAND (SP)** - Red (5YR 5/8), damp, medium dense, fine to coarse grained	
SS 5	9-9-17	10	209.4	10	**SAND, with clay (SP-SC)** - Red (2.5YR 5/8), damp, medium dense	
SS 6	8-9-12	4			**SAND, clayey (SC)** - Reddish yellow (7.5YR 6/8), damp, medium dense	
SS 7	7-8-8	7		15	SAA except brown (7.5YR 5/8) and pale yellow (2.5Y 8/2)	
			202.9			
SS 8	7-7-9	8		20	**SAND (SP)** - Brownish yellow (10YR 6/6), moist, medium dense	
			197.9			
SS 9	2-4-5	18		25	**CLAY (CL)** - Light greenish gray (GLEY1 8/1/5GY), damp, stiff, -HCL	
			193.4			
SS 10	21-7-7	13		30	**SAND, silty (SM)** - Pale yellow (5Y 8/2), damp, medium dense, contains shell fragments and coquina, +HCL	Loss of circulation, added drilling fluid
			187.9			
SS 11	3-4-6	18		35	**SAND, clayey (SC)** - Pale yellow (5Y 7/4), damp, medium dense, -HCL	
			182.9			
SS 12	8-12-16	11		40	**GRAVEL, with clay (GP-GC)** - Pale yellow (5Y 8/3), damp, medium dense, contains shell fragments, +HCL	Loss of circulation at a depth of 38.5 feet
			177.9			
SS 13	17-31-40	0		45	**NO RECOVERY**	
			172.9			
SS	15-17-19	10			**SAND, silty, clayey (SC-SM)** - Pale yellow (2.5Y 8/4), moist, medium dense, contains shell	Installed 4" steel casing to a depth of 47.0 feet

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1126

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1126

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					fragments, +HCL	
SS 15	16-13-14	11		55	SAA	
			162.9			
SS 16	8-9-9			60	**SAND, with clay (SP-SC)** - Reddish yellow (7.5YR 6/6) and white (7.5YR 8/1), moist to wet, medium dense	Water level depth at end of 01/08/2007 = Ground surface
			157.9			
SS 17	9-5-11	14		65	**SAND (SP)** - Pale yellow (2.5Y 8/1), wet, medium dense, contains traces of fines, -HCL	
			152.9			
SS 18	3-1-1	18		70	**SAND, with clay (SP-SC)** - Pale brown (10YR 7/3), wet, very loose, -HCL	Encountered cemented layers from 69 to 69.5 feet. Loss of circulations at a depth of 69.5 feet.
			147.9			
SS 19	5-7-18	8		75	**CLAY, sandy(CL)** - Dark olive brown (2.5Y 3/3), moist, very stiff, -HCL	Encountered cemented layers from 72 to 74 feet and continued loss of circulation
			141.4			Casing advanced to a depth of 76.0 feet, circulation reestablished
SS 20	50/1"	1		80	**CLAY (CL)** - Dark greenish gray (GLEY1 4/1/10Y), wet, hard, contains limestone, +HCL	Top of Blue Bluff Marl at a depth of 78.5 feet
SS 21	19-22-29	18		85	SAA except damp, contains shell fragments	
						Cemented layers
SS 22	50/1"	1		90	SAA	
SS 23	12-20-22	18		95	SAA except greenish grey (GLEY1 5/1/10Y)	
SS 24	11-19-50/1"	13		100	SAA	
SS 25	11-50/1"	7		105	SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1126**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1126

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		50/1"	1		110		SAA except contains some limestone lenses	
SS 27	X	40-44-48	18		115		SAA except (GLEY1 6/1/10Y)	
SS 28	X	32-30-50/1"	13		120		SAA	
				97.9				
SS 29	X	12-13-15	18		125		**CLAY, silty (CL-ML)** - Greenish gray (5Y 5/1.5), damp, very stiff	
SS 30	X	14-21-30	18		130		SAA except hard	Water level depth at end of 01/09/2007 = Ground surface
SS 31	X	26-28-27	18		135		SAA	
SS 32	X	11-13-18	18		140		SAA	
				77.9				Top of Still Branch Formation at a depth of 142 feet
SS 33	X	13-13-40	11		145		**SAND (SP)** - Greenish black (GLEY1 2.5/1/10Y), wet, very dense, +HCL	
				72.9				
SS 34	X	12-31-25	13	69.9	150		**SAND, clayey (SC)** - Very dark greenish gray (GLEY1 3/1/10Y), wet, very dense, contains clay lenses, -HCL Boring terminated at 150 feet	Water level depth at end of 01/10/2007 = 65.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1126**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1127

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1143573.3 E 622332.3	11/28/2006	11/30/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	CME-850	3 Inches	165952	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.7			
SS 1	6-8-6	16.5			**ASPHALT** pavement and **GRAVEL**	Top of Fill at a depth of 0.0 feet.
SS 2	8-7-7	18	217.7			
SS 3	7-8-6	12	216.2		**SAND, silty (SM)** - Yellowish brown (10YR 5/6), damp, medium dense, contains traces of yellow (10YR 7/6) SAND	Top of Barnwell Group at a depth of 2.0 feet.
				5	**SAND, clayey (SC)** - Yellowish brown (10YR 5/6), damp, medium dense, contains traces of yellow (10YR 7/6) SAND	
SS 4	9-12-15	15			SAA except red (2.5YR 4/6), contains traces of strong brown (7.5YR 5/8) SAND	
SS 5	9-12-23	16		10	SAA except dense	
SS 6	14-14-20	18			SAA	
SS 7	10-11-13	15		15	SAA	
			201.7			
SS 8	10-12-12	15		20	***SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/8), dry, medium dense, 40% coarse grained, rounded	Water level depth at end of 11/28/2006 = Ground surface
			197.7			
SS 9	6-6-6	12		25	**SAND, silty (SM)** - Yellowish brown (10YR 5/6), damp, medium dense, 40% coarse grained, rounded	Water level depth at beginning of 11/29/2006 = 4.25 feet
			192.7			
SS 10	3-2-4	18		30	**CLAY, with sand (CL)** - Brownish yellow (10YR 6/8), damp, medium stiff, medium plasticity	
SS 11	3-3-5	18		35	SAA except brownish yellow (10YR 6/6), moist	
			182.7			
SS 12	4-3-4	18		40	**CLAY, sandy (CL)** - Yellow (10YR 7/8), moist, medium stiff, medium plasticity	
			177.7			
SS 13	5-6-5	16		45	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), moist, medium dense, 50% coarse grained, rounded	
SS	5-8-10	18			SAA except 40% coarse grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1127

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1127

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			167.7			
SS 15	14-14-20	13		55	**SAND, with silt (SP-SM)** - Yellow (10YR 7/8), wet, dense, 40% coarse grained, rounded	
SS 16	10-14-18	12		60	SAA except brownish yellow (10YR 6/8)	
SS 17	8-11-18	11	152.7	65	SAA except brownish yellow (10YR 6/6), wet, medium dense, 50% coarse grained, rounded	
SS 18	4-4-4	14		70	**SAND, clayey (SC)** - Pale yellow (2.5Y 7/3), wet, loose, rounded	
SS 19	5-8-12	13	141.7	75	SAA except medium dense	
SS 20	12-15-25	18		80	**SILT (ML)** - Dark greenish gray (GLEY1 4/1), dry, hard, low plasticity	Top of Blue Bluff Marl at a depth of 78.0 feet.
SS 21	29-19-29	18	132.7	85	SAA	
SS 22	15-50/3"	10.2		90	**CLAY, silty, sandy (CL-ML)** - Dark greenish gray (GLEY1 4/1), dry, hard, low plasticity	
SS 23	22-50/2"	8	122.7	95	**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 5/1), dry, hard, with traces of SAND, medium plasticity	
SS 24	20-50/6"	12		100	**CLAY (CL)** - Greenish gray (GLEY1 5/1), dry, hard, medium plasticity	
SS 25	20-40-32	18		105	SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1127**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1127

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	10-50/3"	10.2		110	SAA except damp	
SS 27	17-32-36	18	102.7	115	SAA	Water level depth at end of 11/29/2006 = 3.0 feet
SS 28	50/3"	0	97.7	120	**NO RECOVERY**	Water level depth at beginning of 11/30/2006 = 27.0 feet
SS 29	14-21-28	18		125	SAA except greenish gray (GLEY1 6/1)	
SS 30	15-15-45	18		130	SAA except dry	
SS 31	15-50/6"	12		135	SAA except damp	
SS 32	10-15-18	18		140	SAA except dry	
SS 33	11-15-50/5"		76.7	145	**SAND, clayey (SC)** - Very dark grayish green (GLEY1 3/2), damp, very dense, rounded, low plasticity	Top of Still Branch Formation at a depth of 143.0 feet.
SS 34	9-13-28		69.7	150	SAA except greenish black (GLEY1 2.5/1), dense, medium plasticity Boring terminated at 150 feet.	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1127**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1128

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1143572.7 E 622682.4	1/10/2007	1/10/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	73.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.3	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.3			
SS 1	6-11-12	18			**SAND, silty (SM)** - Strong brown (7.5YR 5/8), damp, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	9-8-10	18			SAA	
			215.0			
SS 3	2-5-4	14		5	**SAND, silty, clayey (SC-SM)** - Strong brown (7.5YR 5/8), damp, loose, fine grained	
SS 4	3-3-4	18			SAA	
SS 5	3-4-5	16			SAA except Yellow (10YR 7/8)	
			207.8	10		
SS 6	3-4-4	14			**CLAY, with sand (CL)** - Yellow (5Y and 2.5Y 7/8) damp, medium stiff, fine grained, low plasticity	
			205.3			
SS 7	2-3-5	18		15	**CLAY, silty (CL-ML)** - Pale yellow (5Y 7/3), damp, medium stiff, high plasticity	
			202.3			Top of Utley Limestone at a depth of 16.0 feet
SS 8	6-7-10	18		20	**CLAY, silty (CL-ML)** - Pale yellow (5Y 8/3), damp, very stiff, low plasticity, contains shell fragments	
			196.5			
SS 9	8-8-9	18		25	**SAND, clayey (SC)** - Pale yellow (5Y 18/3), damp, medium dense, fine grained, contains shell fragments	
			191.5			
SS 10	3-5-10	18		30	**CLAY, silty (CL-ML)** - Pale yellow (5Y 8/3), damp, very stiff, low plasticity, contains shell fragments	
			186.5			
SS 11	10-27-14	18		35	**SAND, clayey (SC)** - Pale yellow (5Y 8/4), damp, dense, fine grained, contains shell fragments, +HCL	
			181.5			
SS 12	10-15-18	15		40	**SAND, silty (SM)** - Pale yellow (5Y 8/3), moist, dense, fine to medium grained, +HCL	
SS 13	12-16-21	16		45	SAA	
SS	9-11-21	14			SAA except pale yellow (5Y 7/3), damp	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1128

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-1128

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					166.5				Installed 3" steel casing to a depth of 50.0 feet
SS 15	X	▲	8-9-14	16	161.5	55		**CLAY, silty, sandy (CL-ML)** - Yellow (2.5Y 7/8), damp, stiff, high plasticity, contains shell fragments, +HCL	
SS 16	X	▲	4-10-11	18	156.5	60		**SAND, clayey (SC)** - Yellow (2.5Y 7/6), damp, medium dense, contains shell fragments, +HCL	
SS 17	X	▲	17-11-13	18	151.5	65		**CLAY, silty (CL-ML)** - Pale yellow and olive yellow (5Y 7/5 and 6/8), damp, very stiff, high plasticity, contains shell fragments, +HCL	
SS 18	X		▲ 21-50/4"		145.3	70		**CLAY, sandy (CH)** - Yellow (5Y 8/6), damp, hard, high plasticity, +HCL	Loss of circulation at a depth of 73.0 feet
								Boring terminated at 73.0 feet. Casing shoe lost in hole. Hole abandoned and offset 3 feet west.	See B-1128A for continuation

SITE	Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-1128

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1128A

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1143573.7 E 622685.5	1/11/2007	1/15/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	148.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
217.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % ☐ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET (217.9)	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
								SEE B-1128 FOR LITHOLOGY TO 70 FEET	
						5			
						10			
						15			
						20			
						25			
						30			
						35			
								SEE B-1128 FOR LITHOLOGY TO 70 FEET	
						40			
						45			

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1128A

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1128A

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
				55, 60, 65		
				70		Loss of circulation at a depth of 71.0 feet
			146.9			
SS 1	4-6-10	16		75	**CLAY, sandy (CL)** - Pale yellow (5Y 8/3), damp, very stiff, low plasticity, contains shell fragments, +HCL	
			141.4			Top of Blue Bluff Marl at a depth of 76.5 feet
SS 2	5-11-50/4"	16		80	**CLAY (CH)** - Greenish gray (GLEY1 5/1), damp, hard, high plasticity, +HCL	Water level depth at end of 01/11/07= Ground surface
SS 3	10-12-14	18		85	SAA except very stiff	Water level depth at beginning of 01712/07= 17.0 feet
SS 4	50/3"	3		90	SAA except hard, contains shell fragments	
SS 5	8-11-13	18		95	SAA except very stiff	
SS 6	11-50/4"	10		100	SAA except hard	
SS 7	20-28-50/5"			105	SAA except contains some cemented layers	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1128A**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1128A

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 8	⊠	48-50/1"	7		110		SAA except greenish gray (GLEY1 6/1), no cemented layers or shell fragments	
SS 9	⊠	8-13-14	18		115		SAA except very stiff	
SS 10	⊠	12-27-50/3"			120		SAA except hard	
SS 11	⊠	8-27-23	18		125		SAA except light greenish gray (GLEY1 7/1)	
SS 12	⊠	11-19-29	18		130		SAA	
SS 13	⊠	21-26-26			135		SAA	
				81.2				
SS 14	⊠	10-13-14	18		140		**CLAY (CL)** Olive gray (5Y 5/2), damp, very stiff, +HCL	
				76.2			**SAND, clayey (SC)** - Dark greenish grey (GLEY1 4/1), damp, dense, fine to medium grained, -HCL	Top of Still Branch Formation at a depth of 141.75 feet
SS 15	⊠	6-9-32	18		145			
				71.2				
SS 16	⊠	50/3.5"		69.1			**SAND, silty (SM)** - Dark gray (2.5Y 4/1), damp, very dense, fine grained, -HCL Boring terminated at 148.80 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1128A**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1129

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1143278.2 E 621893.7	1/3/2007	1/4/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.8			
SS 1	12-13-12	12	220.3		**GRAVEL, with sand (GP)** - Brown (7.5YR 4/6), dry, medium dense	Top of Fill at a depth of 0.0 feet
SS 2	12-16-18	18			**SAND, with silt (SP-SM)** - Red (2.5YR 4/6 to 10R 4/8), dry, dense	Top of Barnwell Group at a depth of 1.5 feet
SS 3	12-17-20	11		5	SAA except red (2.5YR 4/6) to reddish yellow (7.5YR 6/8)	
SS 4	12-10-8	12			SAA except brown (7.5YR 5/8), medium dense	
SS 5	11-15-18	14	211.3	10	SAA except orange brown (7.5YR 5.5/8) and red (2.5YR 4/8), dense	
SS 6	14-24-26	11	208.8		**SAND, silty (SM)** - Red (2.5YR 5/8), dry, very dense	
SS 7	11-17-21	14	204.8	15	**SAND, with silt (SP-SM)** - Red (2.5YR 4/8), dry, dense	
SS 8	8-10-10	10	199.8	20	**SAND, silty (SM)** - Red (2.5YR 4/8), damp, dense	Water level depth at end of 01/03/2007 = Ground surface
SS 9	10-17-18	0	194.8	25	**NO RECOVERY**	Water level depth at beginning of 01/04/2007 = Borehole dry
SS 10	7-11-8	7		30	**SAND, with silt (SP-SM)** - Brown (7.5YR 5/8), damp, medium dense	
SS 11	7-8-10	10	184.8	35	SAA except brownish yellow (10YR 6/8)	
SS 12	5-5-7	13	179.8	40	**CLAY (CL)** - Yellow (10YR 7/8), damp, stiff	
SS 13	5-9-10	5		45	**SAND, with silt (SP-SM)** - Yellow (10YR 7/8), damp, medium dense	
SS	5-8-8	8			SAA	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1129

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1129

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14				169.8				
SS 15		10-10-17	8		55		**SAND (SP)** - Yellow (2.5Y 8/4) and light red (10R 6/8), damp, medium dense, -HCL	
SS 16		10-12-16	9		60		SAA	
SS 17		12-15-17	8	154.8	65		SAA except dense	
SS 18		10-12-16	12	149.8	70		**SAND, silty (SM)** - Pale yellow (2.5Y 8/4), moist to wet, medium dense, -HCL	
SS 19		10-18-25	12	145.0	75		**SAND (SP)** - Pale yellow (2.5Y 8/3), wet, dense, -HCL	
SS 20		50/4"	4	140.1	80		**GRAVEL, silty (GM)** - Pale yellow (2.5Y 8/4), wet, very dense, contains shell hash, +HCL	Top of Utley Limestone at a depth of 76.8 feet
SS 21		25-30-31	18		85		**CLAY (CL)** - Greenish gray (GLEY1 5/1 to GLEY1 5/1/5GY), damp, hard, contains traces of shell hash, +HCL	Top of Blue Bluff Marl at a depth of 81.7 feet
SS 22		30-40-45	18		90		SAA	
SS 23		15-24-36	18		95		SAA	
SS 24		10-15-17	18	121.8	100		SAA Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1129**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1130

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1142482.8 E 622250.0	3/8/2007	3/9/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	4 Inches	337153	99.2

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
217.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			217.5			
SS 1	6-7-10	18			**SAND, clayey (SC)** - Red (2.5YR 4/8), dry, medium dense, fine grained, low plasticity	Top of Barnwell Group at a depth of 0.0 feet
SS 2	4-18-39	18			SAA except very dense	
SS 3	11-19-13	16		5	SAA except dense	
SS 4	9-14-14	16			SAA	
SS 5	7-9-11	17		10	SAA	
SS 6	7-9-9	16	204.5		SAA except red (10R 4/8)	
SS 7	4-5-6	15		15	**SAND, silty (SM)** - Yellowish red (5YR 5/8), dry to damp, medium dense, fine grained, nonplastic	
SS 8	4-8-14	11.5		20	SAA except strong brown (7.5YR 5/8), damp, low plasticity, contains CLAY seams and trace phosphate grains	
SS 9	5-11-20	11		25	SAA except dense	
			190.5			
UD 1		16		30	***SAND, clayey (SC)** - Brownish yellow (10YR 6/8), damp, fine grained, low plasticity, -HCL Pocket Penetrometer: 1.0 TSF	Direct Push
			185.5			
UD 2		24	183.0	35	**CLAY, sandy (CL)** - Brownish yellow (10YR 6/8), damp, low plasticity, fine grained SAND Pocket Penetrometer: 2.5 TSF ***SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), damp, fine grained	Direct Push
UD 3		19		40	SAA except light red (10R 6/6) to brownish yellow (7.5YR 6/6), low plasticity Pocket Penetrometer: 1.0 TSF	Direct Push
SS 10	3-3-6	11		45	SAA except yellowish brown (10YR 5/8), loose	
SS	3-4-4	18			SAA except pale yellow (2.5Y 7/4)	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1130

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1130

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11						
SS 12	1-2-4	18		55	SAA	
			160.5			
SS 13	9-12-11	11		60	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), damp, medium dense, fine grained, nonplastic, contains trace phosphate grains	
			155.5			
SS 14	1-3-4	18		65	**CLAY, silty with sand (CL-ML)** - Pale yellow (5Y 7/3), damp, medium stiff, low plasticity, fine grained SAND, -HCL	
SS 15	1-3-1	17		70	SAA except soft, contains shell fragments	Loss of circulation at a depth of 70.0 feet. Reamed hole with a 4" drill bit. Installed 4" steel casing to a depth of 75.0 feet
			145.5			Top of Utley Limestone at a depth of 72.0 feet
SS 16	7-26-3	8.5		75	**SAND, clayey (SC)** - Pale yellow (5Y 8/2), damp, medium dense, fine to medium grained, low plasticity, contains shell fragments, +HCL	
SS 17	1-21-50/2"	8		80	SAA except pale yellow (5Y 7/3), very dense, contains shell fragments and calcareous limestone	
			136.5			Top of Blue Bluff Marl at a depth of 81.0 feet
SS 18	19-30-42	18		85	**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/5GY), damp, hard, low plasticity, contains trace shell fragments, phosphate grains, and SAND and CLAY seams, +HCL	Water level depth at end of 3/8/07 = Top of casing
SS 19	31-50/2"	8		90	SAA except contians many shell fragments	Water level depth at beginning of 3/9/07 = Borehole dry
SS 20	9-11-13	18		95	SAA except dry to damp, very stiff	
SS 21	9-50/2"	8	118.3		SAA except hard Boring terminated at 99.17 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1130**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1131

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1143173.0 E 621823.1	1/16/2007	1/17/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	98.6

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.2			
SS 1	8-9-9	18			**SAND, silty (SM)** - Red (10R 4/6), dry, medium dense	Top of Barnwell Group at a depth of 0.0 feet
SS 2	7-7-10	9			SAA	
SS 3	9-13-13	15			SAA	
			216.7	5		
SS 4	13-28-31	18			**SAND, with silt (SP-SM)** - Red (2.5YR 5/6), moist, very dense, fine to medium grained	
SS 5	8-19-21	18			SAA except brown (7.5YR 5/6), damp, dense, fine grained	
				10		
SS 6	8-21-31	7			SAA except dark brown (10YR 3/3), very dense	
			209.2			
SS 7	3-8-10	18			**SAND (SP)** - Yellowish red (5YR 5/8), moist, medium dense	
				15		Installed 4" steel casing to a depth of 17.5 feet
			205.4			
SS 8	7-12-13	9			**SAND, silty (SM)** - Brown (7.5YR 4/6), moist, medium dense	
				20		
SS 9	7-12-13	11			SAA except yellowish red (5YR 5/8)	
				25		
UD 1		24			SAA except orange (7.5YR 6/6)	Direct Push
				30		Removed casing to retrieve UD sample. Reinstalled casing to a depth of 30.0 feet
UD 2		7			SAA except orange (7.5YR 6/8), damp	Direct Push
				35		
			185.4			
UD 3		23.5			**CLAY (CL)** - Yellowish brown (10YR 7/8)	Direct Push
				40		Water level depth at end of 01/16/07 = Ground surface
SS 10	3-5-6	18			SAA except pale yellow (5Y 7/4), damp, stiff, -HCL	
				45		
			175.4			
SS	4-6-6	18			**SAND, silty, clayey (SC-SM)** - Pale yellow (5Y 7/4), damp, medium dense, -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1131

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1131

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11			170.4			
SS 12	4-5-10	14		55	**SAND, clayey (SC)** - Pale yellow (5Y 7/3), damp, medium dense	
			165.4			
SS 13	7-8-11	12		60	**SAND, silty (SM)** - Pale yellow (5Y 7/4), damp, medium dense	
SS 14	10-11-13	12		65	SAA except yellow (2.5Y 7/3), -HCL	
			155.4			
SS 15	6-7-12	11		70	**SAND, with silt (SP-SM)** - Yellow (2.5Y 7/3), medium dense, -HCL	
			150.4			
SS 16	10-12-13	11		75	**SAND, clayey (SC)** - Pale yellow (5Y 8/4), medium dense, -HCL	
			145.4			
SS 17	12-14-17	3		80	**SAND (SP)** - Pale yellow (5Y 8/2), wet, medium dense, -HCL	
			140.4			
SS 18	14-50/1"	7	137.2	85	**CLAY (CL)** - Brown (10YR 4/3), hard, -HCL, contains pale yellow (5Y 8/2) GRAVEL, +HCL in last 1"	
					GRAVEL (GP) - Pale yellow (5Y 8/2), +HCL	Top of Utley Limestone at a depth of 85.0 feet
			133.7			
SS 19	11-16-21	18		90	**CLAY (CL)** - Greenish gray (GLEY1 5/1/10GY), damp, hard	Top of Blue Bluff Marl at a depth of 88.5 feet
SS 20	21-23-27	18		95	SAA except moist, conatins SAND and shell hash, +HCL	
			123.6			
SS 21	50/1"	1			SAA Boring terminated at 98.58 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1131**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1132

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1142614.2 E 621450.1	1/25/2007	1/25/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.7			
SS 1	50/1"	1	217.2		**GRAVEL, clayey (GC)** - Fill, roadway	Top of Fill at a depth of 0.0 feet
SS 2	7-14-13	11			**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), dry, medium dense	Top of Barnwell Group at a depth of 1.5 feet
SS 3	2-3-11	2	213.2	5	SAA	
SS 4	6-9-14	10	210.7		**SAND, silty (SM)** - Yellowish red (5YR 5/8), damp, medium dense	
SS 5	9-11-12	13	208.2	10	**SAND, silty, clayey (SC-SM)** - Yellowish brown (10YR 5/8), dry, medium dense	
SS 6	9-12-13	13	205.7		**SAND, silty (SM)** - Yellowish red (5YR 5/8), dry, medium dense	
SS 7	7-9-9	13	201.7	15	**SAND, silty, clayey (SC-SM)** - Red (2.5YR 5/6) and yellow (10YR 7/6), dry, medium dense	
SS 8	6-12-10	12	196.7	20	**SAND, silty (SM)** - Red (2.5YR 4/8), dry to damp, medium dense, fine to coarse grained	
SS 9	9-9-9	8		25	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), dry, medium dense	
UD 1		12	186.7	30	SAA except brown (7.5YR 5/8) and pale yellow (2.5Y 8/4) Pocket Penetrometer: 2.75 TSF	Direct Push
UD 2		13		35	***CLAY, sandy (CH)** - Yellowish brown (10YR 5/6) Pocket Penetrometer: 1.5 TSF	Direct Push
UD 3		23.5	176.7	40	SAA Pocket Penetrometer: 2.0 TSF	Direct Push
SS 10	3-5-6	16		45	**SAND, clayey (SC)** - Yellowish brown (10YR 5/8), damp, medium dense	
SS	1-3-5	18			SAA except yellow (2.5Y 7/6), loose, contains CLAY lenses	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1132

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1132

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11						
SS 12	2-6-11	18		55	SAA except medium dense	
			161.7			
SS 13	8-11-12	8		60	**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), dry to damp, medium dense	
			156.7			
SS 14	11-14-15	6		65	**SAND (SP)** - Brownish yellow (10YR 6/6), wet, medium dense	
			151.7			
SS 15	2-6-9	12		70	**SAND, clayey (SC)** - Pale yellow (2.5Y 8/4), wet, medium dense, -HCL	
			146.7			
SS 16	12-20-21	8		75	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/2), wet, dense, -HCL	
SS 17	12-14-14	15		80	SAA except pale yellow (5Y 8/3), moist, medium dense	
			136.7			Top of Utley Limestone at a depth of 81.8 feet
SS 18	50/1"	0		85	**NO RECOVERY**	
			131.7			
SS 19	50/1"	1		90	**GRAVEL, clayey (GC)** - Pale yellow (5Y 8/3), contains shell hash, +HCL	
			126.7			Top of Blue Bluff Marl at a depth of 91.75 feet
SS 20	16-30-34	18		95	**CLAY (CL)** - Dark greenish gray (GLEY1 4/1/10Y), damp, hard, +HCL	
SS 21	17-20-27	18			SAA	
			118.7	100	Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1132**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1133

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1142968.9 E 621451.2	2/13/2007	2/13/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglund-MACTEC	Dietrich D-50	4 Inches	100	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.2			
SS 1	4-5-10	18			**SAND, with clay (SP-SC)** - Red (10R 4/6), damp, medium dense, very fine grained, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	10-12-14	18			SAA except yellowish red (5YR 5/6)	
SS 3	10-15-18	14		5	SAA except yellowish red (5YR 5/8), dense	
SS 4	4-5-5	18			SAA except medium dense, medium grained, contains trace of shell hash	
SS 5	5-8-13	18	210.7	10	SAA except moist, fine and coarse grained, subangular to subrounded	
SS 6	7-11-18	18			**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/6), moist, medium dense, coarse grained, angular to subangular, nonplastic	
SS 7	10-13-16	18	207.2	15	SAA **CLAY (CL)** - Red (7.5YR 4/8, moist, very stiff, low plasticity, low toughness, -HCL	
SS 8	13-12-20	18	199.2	20	SAA except reddish brown (2.5YR 5/4), hard	
SS 9	14-15-19	17		25	***SAND, silty (SM)** - Brownish yellow (10YR 6/8), moist, dense, coarse grained, subrounded, nonplastic, contains trace of shell hash	
UD 1		22		30	SAA except no shell hash Pocket Penetrometer: 4.5 TSF, 3.0 TSF, 4.0 TSF	Direct Push
UD 2		19	184.7	35	SAA except medium dense, fine grained Pocket Penetrometer: 2.0 TSF, 3.0 TSF, 2.5 TSF	Direct Push
UD 3		24	179.2	40	**CLAY (CL)** - Yellow (10YR 7/6), moist, stiff, low plasticity Pocket Penetrometer: 1.0 TSF, 1.5 TSF, 2.0 TSF	Direct Push Changed to a 2 7/8" drill bit
SS 10	4-3-5	18	174.2	45	**CLAY (CH)** - Brownish yellow (10YR 6/6), moist, medium stiff, high plasticity	
SS	7-7-8	17			**CLAY, with sand (CL)** - Light yellowish brown (10YR 6/4), moist, very stiff, low	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1133

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1133

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11					plasticity, fine and coarse grained SAND	
SS 12	4-4-5	18		55	SAA except pale yellow (2.5Y 7/4), stiff, very fine to fine grained SAND, iron staining observed	
SS 13	5-5-6	18		60	SAA except pale yellow (5Y 8/4), moist to wet	
			159.2			
SS 14	6-8-10	14		65	**SAND, with silt (SP-SM)** - Very pale brown (10YR 7/4), wet, medium dense, fine grained, nonplastic	
SS 15	6-8-11	18		70	SAA except yellow (10YR 7/6), medium grained, subangular to subrounded	
			149.2			
SS 16	3-4-9	18		75	**CLAY, with sand (CL)** - Light yellowish brown (2.5Y 6/3), moist, stiff, low plasticity, low toughness, fine grained SAND	
			144.2			
SS 17	4-6-10	18		80	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 7/3), wet, medium dense, fine grained with some medium grained, nonplastic, -HCL	
			140.2			Top of Blue Bluff Marl at a depth of 81.0 feet
SS 18	6-13-30	18		85	**CLAY (CH)** - Dark greenish gray (GLEY1 4/5GY), moist, hard, high plasticity, +HCL	
			134.2			
SS 19	22-27-36	18		90	**CLAY (CL)** - Dark greenish gray (GLEY1 4/5GY), moist, hard, low plasticity, high toughness, +HCL	
SS 20	17-19-26	18		95	SAA except contains trace fossils	
SS 21	18-22-25	18			SAA	
			121.2	100	Boring terminated at 100 feet	Water level depth at beginning of 2/14/07 = 56.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1133**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1134

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1143282.9 E 621104.3	1/22/2007	1/23/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.0	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.0			
SS 1	5-7-8	12	221.5		**SAND, silty (SM)** - Dark red (10R 3/6), dry, medium dense	Top of Fill at 0.0 feet Top of Barnwell Group at a depth of 0.5 feet
SS 2	6-7-9	14			**SAND, silty (SM)** - Dark red (10R 3/6), dry, medium dense	
SS 3	7-8-15	12			SAA except red (2.5YR 4/6) SAA	
				5		
SS 4	6-6-8	15	214.0		SAA except red (2.5YR 4/8), fine to coarse grained	
SS 5	7-8-11	12		10	**SAND with clay (SP-SC)** - Yellowish red (5YR 5/8), damp, medium dense	
SS 6	9-7-9	9			SAA except reddish yellow (7.5YR 6/8)	
SS 7	6-6-8	12		15	SAA except yellow (10YR 7/6)	
			205.0			
SS 8	5-5-8	10		20	**SAND, silty (SM)** - Yellowish brown (10YR 6/8), dry, medium dense	Installed 4" steel casing to a depth of 20.0 feet Water level depth at end of 1/22/2007 = 20.0 feet
SS 9	6-5-5	10		25	SAA except yellow (10YR 7/6), damp	
			195.0			
SS 10	3-3-4	18		30	**CLAY, sandy (CL)** - Brownish yellow (10YR 6/6), damp, medium stiff, fine grained	
SS 11	3-3-4	18		35	SAA	
			185.0			
SS 12	4-6-7	12		40	**SAND, silty, clayey (SC-SM)** - Brownish yellow (10YR 6/8), damp, medium dense	
			180.0			
SS 13	3-4-4	18		45	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), loose	
			175.0			
SS	3-3-3	18			**CLAY, sandy (CL)** - Red (10R 5/8), moist, medium stiff	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1134

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1134

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			170.0			
SS 15	6-6-7	12		55	**SAND, with clay (SP-SC)** - Light red (10R 6/6), wet, medium dense	
			165.0			
SS 16	9-9-10	10		60	**SAND (SP)** - Light red (10R 6/6), damp, medium dense	
			160.3			
SS 17	5-7-12	18		65	**CLAY, with sand (CL)** - Pale yellow (2.5Y 8/3), very stiff, contains shell fragments, +HCL	
			155.0			Top of Utley Limestone at a depth of 67.0 feet
SS 18	17-16-14	11		70	**GRAVEL, clayey (GC)** - White to pale yellow (2.5Y 8/6), medium dense, contains shell fragments	Loss of circulation at a depth of 73.5 feet
SS 19	50/1"	1		75	SAA except pale yellow (2.5Y 8/3), very dense	
SS 20	50/1"	1		80	SAA	
SS 21	34-13-14	9		85	SAA except pale brown (10YR 7/3), wet, medium dense, +HCL	
			135.3			Top of Blue Bluff Marl at a depth of 86.75 feet
SS 22	13-17-47	18		90	**CLAY (CL)** - Dark greenish grey (GLEY 1 4/1/10Y), dry to damp, hard, +HCL	
SS 23	50/1"	1		95	SAA	
SS 24	20-21-31	18	122.0	100	SAA	
					Boring terminated at 100 feet	Water level depth at end of 1/23/2007 = 56.1 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1134**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1136

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1143178.1 E 621023.0	1/24/2007	1/24/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.7			
SS 1	4-5-7	13			**SAND, with silt (SP-SM)** - Red (2.5YR 4/8), dry, medium dense	Top of Fill at 0.0
SS 2	5-6-8	13			**SAND, with silt (SP-SM)** - Red (2.5YR 4/8), dry, medium dense	Top of Barnwell Group at a depth of 0.0 feet
			218.4		SAA except very pale brown (10YR 7/3)	
SS 3	7-7-12	11		5	**SAND, silty (SM)** - Red (2.5YR 5/6), dry, medium dense	
SS 4	7-14-16	6			SAA	
SS 5	8-11-16	13		10	SAA	
SS 6	8-9-11	14			SAA	
SS 7	10-14-14	12		15	SAA	
			204.7			
SS 8	7-8-10	13		20	**SAND, clayey (SC)** - Yellowish red (5YR 5/8), fine to coarse grained	
			199.7			
SS 9	7-8-11	10		25	**SAND (SM)** - Yellow (10YR 7/8), dry to damp, medium dense	
			194.7			
UD 1				30	**NO RECOVERY**	Direct Push
			189.7			
UD 2				35	**SAND, silty, clayey (SC-SM)** - Brownish yellow (10YR 6/8)	Direct Push
			184.7			
UD 3	107			40	***SAND, clayey (SC)** - Pale yellow (5Y 8/3)	Direct Push
UD 4				45	SAA except olive yellow (2.5Y 6/6)	Direct Push
SS	5-4-6	10			SAA except yellow (2.5Y 7/8), wet, medium dense, -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1136

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1136

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
10								
SS 11	▲	5-4-4	15		55		SAA except pale yellow (2.5Y 7/4), loose	
SS 12	▲	5-7-6	12		60		SAA except pale yellow (2.5Y 8/3), medium dense	
SS 13	▲	4-9-8	9		65		SAA	
SS 14	▲	5-5-2	9		70		SAA except pale yellow (2.5Y 7/4), damp, loose	
				149.7				Loss of circulation at a depth of 72.0 feet
SS 15	▲	3-3-5	8		75		**SAND, silty (SM)** - Pale yellow (2.5Y 8/3), dry, loose, -HCL	
SS 16	▲	4-6-7	11		80		SAA except medium dense	
				139.7				
SS 17	▲	4-4-3	11		85		**SAND (SP)** - Pale red (2.5YR 7/2), wet, loose, -HCL	
				134.9				
SS 18	▲	14-7-7	18		90		**CLAY (CL)** - Pale olive (5Y 6/4), moist, stiff, +HCL	
				129.9				Top of Blue Bluff Marl at a depth of 91.75 feet
SS 19	▲	27-50/1"	7		95		**CLAY (CL)** - Dark greenish grey (GLEY 1 4/1/10Y), damp, hard, +HCL	
SS 20	▲	21-23-25	18				SAA	
				121.7	100		Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1136**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1138

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1143469.7 E 619192.8	2/7/2007	2/8/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
215.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			215.8			
SS 1	3-4-6	12	214.3		**SAND, with silt (SP-SM)** - Yellowish red (5YR 4/6), damp, loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	4-3-3	10	212.6		**SAND, clayey (SC)** - Red (2.5YR 4/8), damp, loose, fine grained	
SS 3	2-3-6	9	209.8	5	**SAND, with silt (SP-SM)** - Reddish brown (5YR 4/4), damp, loose, fine grained	
SS 4	2-3-6	9	207.3		***SAND, silty (SM)** - Reddish brown (5YR 4/4), damp, loose, fine grained	
SS 5	1-2-2	8	205.3	10	**SAND, with silt (SP-SM)** - Reddish brown (5YR 4/4), damp, loose, fine grained very loose	
SS 6	2-5-5	10	202.8		***SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/8), damp, loose, fine grained	
SS 7	2-6-7	11		15	***SAND, silty (SM)** - Yellowish red (5YR 5/8), moist, medium dense, fine grained	
SS 8	6-9-8	8		20	SAA except yellowish red (2.5YR 5/8)	
SS 9	4-8-8	9		25	SAA except reddish yellow (7.5YR 6/8)	
			188.8			
SS 10	4-6-6	13		30	***SAND, clayey (SC)** - Brownish yellow (10YR 6/8), moist, medium dense, fine grained	
			183.8			
SS 11	2-4-6	16		35	**CLAY, silty (CL-ML)** - Yellow (10YR 7/6), wet, stiff, medium to high plasticity	
			178.8			
SS 12	1-2-3	18		40	**SAND, clayey (SC)** - Yellow (10YR 7/8), wet, loose, fine grained, nonplastic to low plasticity, -HCL	
			173.3			
SS 13	1-2-3	18		45	**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 8/10Y), wet, medium stiff, medium plasticity, -HCL	
			168.8			
SS	2-5-6	16			**SAND, with silty clay (SP-SC)** - Light greenish gray (GLEY1 7/5GY), wet, medium	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1138

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1138

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14				163.8			dense, fine grained, low to medium plasticity, +HCL	
SS 15		12-11-2	18	158.8	55		**SAND, clayey (SC)** - Pale yellow (2.5Y 7/4), wet, medium dense, medium to coarse grained, nonplastic to low plasticity, contains trace shell fragments, +HCL	
SS 16		6-6-4	16	153.8	60		**CLAY, with sand (CL)** - Pale yellow (5Y 8/4), wet, stiff, medium plasticity, very fine grained SAND, contains shell fragments up to 1" in diameter, +HCL	
SS 17		5-5-7	18	148.8	65		**CLAY (CL)** - Pale yellow (5Y 7/3), wet, stiff, high plasticity, -HCL	
SS 18		4-4-5	12	143.8	70		**SAND, with silt (SP-SM)** - Yellow (5Y 8/6), wet, loose, fine to medium grained, contains shell fragments, +HCL	Loss of circulation at a depth of 68.5 feet. Installed 3" steel casing to 68.5 feet.
SS 19		WOH/6"-1-2	18	138.8	75		**SAND, clayey (SC)** - Pale yellow (2.5Y 7/4), wet, very loose, fine grained, low to medium plasticity, -HCL	
SS 20		1-1-1	16	133.8	80		**SAND, with clay (SP-SC)** - Pale yellow (5Y 8/3), wet, very loose, fine grained, nonplastic, -HCL	Water level depth at end of 2/7/07 = Top of Casing
SS 21		2-2-3	14		85		**SAND (SP)** - Pale yellow (2.5Y 8/4), wet, loose, fine to medium grained, -HCL	Water level depth at beginning of 2/8/07 = 52.5 feet
SS 22		17-23-20	9		90		SAA except pale yellow (5Y 8/2), dense, medium grained	
SS 23		13-16-19	8		95		SAA	
SS 24		7-13-18	8	115.8	100		SAA	
							Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1138**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1139

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1142289.9 E 621026.8	1/31/2007	2/2/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
216.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			216.7			
SS 1	14-15-11	14	215.2		**GRAVEL, silty (GM)** - Crush run and some red SAND, dry, medium dense	Top of Fill at a depth of 0.0 feet
SS 2	12-15-14	15			**SAND, silty (SM)** - Red (2.5YR 4/8), dry, medium dense	Top of Barnwell Group at a depth of 1.5 feet
SS 3	7-9-10	8	211.2	5	SAA	
SS 4	18-16-17	7	208.7		**GRAVEL, silty (GM)** - Red SAND and gray GRAVEL, dense	
SS 5	4-4-5	12		10	**SAND, silty (SM)** - Reddish yellow (5YR 6/8), moist, loose	
SS 6	4-6-6	10	203.7		SAA except damp, medium dense	
SS 7	4-5-6	12	199.7	15	**CLAY, sandy (CL)** - Brownish yellow (10YR 6/8) and light bluish gray (GLEY2 8/1/10B), damp, stiff, contains SAND lenses	
SS 8	5-6-5	9	194.7	20	**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/6), dry, medium dense	Installed 3" steel casing to a depth of 17.0 feet
SS 9	10-13-14	10	189.7	25	**SAND (SP)** - Yellow (10YR 8/6), dry, medium dense	
UD 1		24		30	**SAND, silty (SM)** - Red Pocket Penetrometer: >4.5 TSF	Direct Push Removed casing to retrieve UD sample
UD 2		24		35	SAA Pocket Penetrometer: 0.75 TSF SAA except orange	Direct Push
UD 3		24	177.2	40	SAA except red Pocket Penetrometer: 1.1 TSF **SAND, clayey (SC)** - Orange	Direct Push
SS 10	3-5-7	18		45	SAA except brownish yellow (10YR 6/6), damp, medium dense	
SS	6-8-8	18			SAA except red (10R 5/8)	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1139

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1139

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11						Water level depth at end of 1/31/07 = Ground surface
SS 12	3-4-5	16		55	SAA except pale red (2.5YR 7/2) and yellow (2.5Y 7/6), damp, loose, contains CLAY lense	Water level depth at beginning of 2/2/07 = 38.0 feet
SS 13	4-5-7	15		60	SAA except pale yellow (5Y 8/3), damp, medium dense, no lenses	
			154.9			
SS 14	10-13-16	15		65	**GRAVEL, silty (GM)** - White (5Y 8/1), damp, medium dense, contains shell hash	
			149.7			
SS 15	7-11-15	16		70	**CLAY, sandy (CL)** - Yellow (2.5Y 7.5/6), very stiff	
			144.7			
SS 16	16-16-21	17		75	**SAND, clayey (SC)** - White (2.5Y 8/1), dense, contains shell hash	
			139.7			
SS 17	11-11-12	16		80	**SAND, with clay (SP-SC)** - Pale yellow (5Y 8/3), moist, medium dense	
			134.7			
SS 18	11-11-16	15		85	**SAND (SP)** - Pale yellow (2.5Y 8/2), wet, medium dense	
			129.7			
SS 19	35-50/1"	7		90	**GRAVEL, silty (GM)** - Pale yellow (5Y 8/3), wet, dense, contains shell fragments, +HCL	Top of Utley Limestone at a depth of 87.0 feet
			124.7			
SS 20	8-10-12	18	121.9	95	**SILT (ML)** - Pale olive (6/3) to greenish gray in tip, damp, very stiff, +HCL	Top of Blue Bluff Marl at a depth of 94.8 feet
SS 21	11-23-50	18		100	**CLAY (CL)** Dark greenish gray (GLEY1 4/1/10Y), dry to damp, hard	
SS 22	14-18-26	18		105	SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1139**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 3 OF 3	HOLE NO. B-1139

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 23		23-26-36	18		110		SAA	
SS 24		19-16-21	18		115		SAA	
SS 25		18-28-35	18		120		SAA except greenish gray (GLEY1 5/1/5GY), damp, hard	
SS 26		19-27-36	18		125		SAA	
SS 27		48-50/1"	7	84.7	130		SAA	
SS 28		50/1"	1	79.7	135		**SILT (ML)** - Greenish gray (GLEY1 6/1/10Y), hard, lithified, limestone	
SS 29		29-31-34	18		140		**CLAY (CH)** - Greenish gray (GLEY1 6/1/10Y), damp, hard, high plasticity	
SS 30		28-31-40	18		145		SAA	
SS 31		17-28-35	15	66.7	150		SAA Boring terminated at 150 feet	

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-1139

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1140

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1142290.2 E 621823.6	11/14/2006	11/16/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
216.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			216.6			
SS 1	8-10-15	10	216.0		**GRAVEL** - Parking lot/roadway	Top of Fill at a depth of 0.0 feet.
SS 2	9-10-9	10			**SAND (SP)** - Red (2.5YR 4/6), dry, medium dense, medium grained SAA	Top of Barnwell Group at a depth of 0.6 feet.
SS 3	8-9-8	7		5	SAA	
SS 4	7-8-9	12			SAA except damp	
SS 5	5-7-9	12	206.1	10		
SS 6	6-8-9	10	203.6		**SAND, with clay (SP-SC)** - Reddish yellow (7.5YR 6/6), damp, medium dense, fine grained	
SS 7	7-8-9	10		15	**SAND (SP)** - Reddish yellow (7.5YR 6/8), damp, medium dense, fine grained	
SS 8	9-13-13	10		20	SAA	
SS 9	5-7-9	12	189.6	25	SAA except contains traces of CLAY	
SS 10	5-5-5	18	184.6	30	**SAND, clayey (SC)** - Brown (7.5YR5/8), damp, loose to medium dense, fine to very fine grained	
SS 11	5-5-5	13	179.6	35	**CLAY (CL)** - Olive yellow (2.5Y 6/6), damp, stiff, traces of fine SAND	
SS 12	3-4-5	10	174.6	40	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), wet, loose, fine to medium grained	
SS 13	3-4-5	18		45	**SAND (SP)** - Pale yellow (2.5YR 7/3), moist, loose, fine grained, with traces of CLAY	
SS	9-11-8	7			SAA except pale yellow (2.5Y 7/4), medium dense	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1140

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1140

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	8-17-14	8		55	SAA except yellow (10YR 7/6), with traces of gravel	
			158.1			
SS 16	1-2-6	11		60	**CLAY, sandy (CL)** - Pale yellow (5Y 8/3) to white, moist, stiff to medium stiff, with occasional shell hash	Loss of circulation. Install casing to a depth of 60.0 feet.
SS 17	5-7-25	18		65	SAA except hard, contains shell hash and shell fragments	
			149.6			Casing advanced to a depth of 67.0 feet
SS 18	50/6"	6		70	**SAND (SP)** - White (2.5Y 8/1) and pale yellow (2.5Y 8/2), moist to wet, very dense, contains shells and shell fragments, medium to coarse grained	
SS 19	13-14-25	11		75	SAA except white to pinkish white (10R 8/2), wet, dense	
SS 20	8-12-20	15		80	SAA except pale yellow (5Y 8/3) and brown (5YR 4/3), wet, dense, occasional shell hash	
			133.1			
SS 21	50/1"	1		85	**SAND (SP)** - Pale yellow (2.5 1/7/4), wet, very dense, contains shells and shell fragments, medium grained	Top of Utley Limestone at a depth of 83.5 feet.
			128.1			
SS 22	12-19-26	18		90	**CLAY (CL)** - Dark greenish gray (GLEY1 4/1/5GY), moist, hard, with trace shell hash	Top of Blue Bluff Marl at a depth of 88.5 feet.
SS 23	50/5"	5		95	SAA	
SS 24	50/4"	4		100	SAA	
			114.6			
SS 25	14-19-25	18		105	**SILT (ML)** - Dark greenish gray (GLEY1 4/1/5GY), moist, hard, with traces of very fine grained SAND	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1140**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1140

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	50/6"	6		110	SAA except contains traces of shell hash	Water level depth at end of 11/15/2006 = Ground surface
SS 27	50/3"	3		115	SAA	
SS 28	50/2"	2		120	SAA	
SS 29	50/4"	4		125	SAA	
SS 30	50/4"	4		130	SAA	
SS 31	50/3"	3		135	SAA	
			79.6			
SS 32	50/6"	6		140	**CLAY (CL)** - Greenish gray (GLEY1 6/1/10GY), damp/moist, hard, with traces of SILT and very fine SAND	
SS 33	12-17-20	18		145	SAA	
SS 34	10-20-20	18		150	SAA	
			66.6		Boring Terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1140**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1142

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Mabie	N 1144416.6 E 620649.6	2/12/2007	2/13/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
224.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			224.7			
SS 1	2-1-1	16			**SAND, with silt (SP-SM)** - Red (2.5YR 4/8), damp, very loose, fine grained, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-2-2	15			SAA	
			221.4			
SS 3	2-4-3	12			**SAND, with silty clay (SP-SC)** - Red (2.5YR 4/8), damp, loose, fine grained, nonplastic, -HCL	
			219.2	5		
SS 4	4-6-5	14			**SAND, with silt (SP-SM)** - Red (2.5YR 4/8), moist, medium dense, fine grained, nonplastic, -HCL	
			216.7			
SS 5	5-7-4	8			**SAND, with silty clay (SP-SC)** - Red (2.5YR 4/8), moist, medium dense, fine grained, nonplastic, -HCL	
			214.2	10		
SS 6	4-4-5	10			**SAND, clayey (SC)** - Red (2.5YR 4/8), moist, loose, fine to medium grained, nonplastic to low plasticity, -HCL	
			211.7			
SS 7	4-4-3	11			**SAND, with clay (SP-SC)** -Yellow (10YR 7/8), moist, loose, fine to medium grained, nonplastic, to low plasticity, -HCL	
				15		Installed 3" steel casing to a depth of 15.0 feet
			207.7			
SS 8	3-5-4	11			**SAND, silty, clayey (SC-SM)** - Brownish yellow (10YR 6/6), moist, loose, fine to medium grained, nonplastic to low plasticity, -HCL	
				20		
			202.7			
SS 9	WOH/6"-2-3	16			**CLAY, silty (CL-ML)** - Light gray (2.5Y 7/2), moist, medium stiff, low plasticity, -HCL	
				25		
SS 10	7-25-44	18			SAA except hard, contains shell hash, +HCL	
				30		
SS 11	8-12-21	18			SAA except greenish gray (GLEY1 5/5G), very stiff, contains scarce shell fragments, -HCL	
				35		
SS 12	11-13-14	18			SAA	
				40		
			182.7			
SS 13	50/4"	4			**SILT (ML)** - Light greenish gray (GLEY1 8/10Y), dry, hard, nonplastic, contains shell hash and cemented SILT, +HCL	
				45		
			177.7			
SS	12-15-50/5"	12			**SAND, silty, clayey (SC-SM)** - Light gray (GLEY1 7/N), moist, very dense, low plasticity,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1142

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1142

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					contains shell fragments, +HCL	
			172.7			
SS 15	12-12-10	18		55	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 7/4), wet, medium dense, fine to medium grained, nonplastic to low plasticity, contain shell fragments, +HCL	
SS 16	6-7-12	18		60	SAA except pale yellow (2.5Y 8/3)	
			162.7			
SS 17	6-8-9	18		65	**CLAY, silty with sand (CL-ML)** - Pale yellow (2.5Y 7/3), moist, very stiff, low plasticity, contains shell fragments, +HCL	
			157.7			
SS 18	14-18-15	18		70	**SAND, silty, clayey (SC-SM)** - Light gray (2.5Y 7/2), wet, dense, fine to medium grained, nonplastic to low plasticity, +HCL	
			152.7			
SS 19	10-18-32	18		75	**SAND, with silt (SP-SM)** - Light gray (2.5Y 7/2), wet, dense, fine to medium grained, nonplastic, contains shell fragments, +HCL	
			147.7			
SS 20	16-50/4"	8		80	**CLAY, silty with sand (CL-ML)** - Pale yellow (2.5Y 8/2), wet, hard, low plasticity, contains shell hash, +HCL	Water level depth at end of 2/12/07 = Top of casing
			142.7			
SS 21	16-14-14	14		85	**SAND, with silt (SP-SM)** Very pale brown (10YR 8/3), wet, medium dense, fine grained, nonplastic, contains shell fragments, +HCL	Water level depth at beginning of 2/13/07 = Borehole dry
			137.7			
SS 22	17-16-22	18		90	**CLAY, silty (CL-ML)** - Pale yellow (2.5Y 8/2), wet, hard, low plasticity, contains shell hash, +HCL	
			132.7			
SS 23	11-8-9	16		95	**SAND, silty, clayey (SC-SM)** - Light brownish gray (2.5Y 6/2), wet, medium dense, fine grained, nonplastic to low plasticity, contains shell fragments, +HCL	
			127.7			
SS 24	7-11-10	16	124.7	100	**SAND, with silty clay (SP-SC)** - Light brownish gray (2.5Y 6/2), wet, medium dense, fine grained, nonplastic to low plasticity, contains shell fragments, +HCL	
					Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1142**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1146

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1145428.4 E 622272.1	1/8/2007	1/9/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	98.6

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
240.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			240.0			
SS 1	2-2-3	14	238.5		**SAND, with clay (SP-SC)** - Yellowish brown (10YR 5/8), damp, loose, fine grained, contains organics, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	4-5-3	18	236.5		**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), damp, loose, very fine grained, contains organics, nonplastic	
SS 3	6-8-5	18		5	**SAND, with clay (SP-SC)** - Red (5YR 5/6), damp, medium dense, very fine grained, nonplastic	
SS 4	3-6-12	18	233.0		SAA	
SS 5	8-11-14	14		10	**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/8), damp, medium dense, fine grained, nonplastic SAA except light olive brown (2.5Y 5/4), moist	
SS 6	9-12-8	14	227.0		SAA except dark grayish brown (2.5Y 4/2)	
SS 7	2-2-2	15		15	**SAND, with clay (SP-SC)** - Brown (7.5YR 4/9), wet, loose, fine grained, nonplastic	
			223.0			
SS 8	4-6-8	15		20	**SAND, with silt (SP-SM)** - Yellowish red (5YR 4/6), wet, medium dense, fine grained, nonplastic	
			218.0			
SS 9	8-10-14	17		25	**SAND, with clay (SP-SC)** - Yellowish red (5YR 5/6), wet, medium dense, fine grained, nonplastic	
			213.0			
SS 10	3-4-6	15		30	**SILT (MH)** - Strong brown (7.5YR 5/6), moist, stiff, medium plasticity	
SS 11	2-4-5	18		35	SAA except pale yellow (2Y 7/4), damp, high plasticity	
SS 12	2-4-3	16		40	SAA except strong brown (7.5YR 5/6), moist, medium stiff	
			197.0			
SS 13	2-2-2	12		45	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), wet, very loose, medium grained, nonplastic	
SS	WOH/18"	14			SAA except yellow (10YR 7/6), fine grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1146

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1146

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						Loss of circulation at a depth of 53.0 feet. Installed 3" steel casing to a depth of 53.0 feet.
SS 15	8-29-49	18	186.5	55	**CLAY, silty, gravelly with sand (CL-ML)** - Pale yellow (2.5Y 8/2), moist, hard, low plasticity, contains shell fragments and hash, +HCL	
SS 16	9-11-13	16	183.0	60	**CLAY, with sand (CL)** - Pale yellow (2.5Y 8/2), moist, very stiff, fine grained, low plasticity, contains shell fragments, +HCL	
SS 17	14-25-30	18		65	SAA except yellow (2.5Y 8/6), hard	
SS 18	19-22-22	16		70	SAA except pale yellow (2.5Y 8/3)	
SS 19	8-14-32	17		75	SAA	
SS 20	6-8-9	18	163.0	80	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 7/3), moist, medium dense, fine grained, traces of shell hash, nonplastic, +HCL	
SS 21	39-13-42	18	158.0	85	**SAND, clayey with gravel (SC)** - Pale yellow (7/3), moist, very dense, fine grained, non-plastic, contains shell fragments, +HCL	
SS 22	50/1"	1	153.0	90	**CLAY, with gravel (CH)** - Pale yellow (2.5Y 8/4), moist, hard, contains shell hash, high plasticity	Top of Utley Limestone at a depth of 87.0 feet Loss of circulation at a depth of 90.0 feet Water level depth at end of 01/08/2007 = Ground surface
SS 23	8-11-18	18	148.0	95	**SILT (ML)** - Greenish gray (GLEY1 5/5GY), moist, very stiff, contains traces of shell hash, low plasticity, contains calcareous concretions, +HCL	Top of Blue Bluff Marl at a depth of 92.0 feet Water level depth at beginning of 01/09/2007 = 86.8 feet
SS 24	50/5.5"	5.5	141.5		SAA, except hard Boring terminated at 98.56 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1146**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1148

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1145537.8 E 623236.5	1/4/2007	1/5/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.9			
SS 1	5-5-4	13			**SAND, clayey (SC)** - Yellowish red (5YR 4/6), loose	Top of Fill at a depth of 0.0 feet
SS 2	7-7-10	18			SAA except red (10R 4/6), medium dense	
			215.9			
SS 3	9-14-12	10		5	**SAND, clayey (SC)** - Red to strong brown (7.5YR 5/6), damp, medium dense, fine to medium grained	Top of Barnwell Group at a depth of 3.0 feet
SS 4	8-15-13	18			SAA	
SS 5	6-12-11	18		10	SAA except olive brown (2.5Y 4/4), contains traces of SILT	
SS 6	3-3-2	18			SAA except strong brown (7.5YR 5/6)	
			205.9			
SS 7	2-4-5	14		15	**SAND, silty, clayey (SC-SM)** - Yellowish brown (10YR 5/6), damp, loose, fine grained	
SS 8	7-12-13	15		20	SAA except reddish yellow (7.5YR 6/8), medium dense	
			196.9			
SS 9	3-7-7	18		25	**CLAY, sandy (CL)** - Yellow (10YR 7/6), damp, stiff, low plasticity	
SS 10	3-5-7	18		30	SAA	
			186.9			
SS 11	4-7-8	14		35	**SAND, silty (SM)** - Yellow (2.5Y 7/6), damp, medium dense, fine to medium grained	
SS 12	4-6-7	14		40	SAA	Water level depth at end of 01/04/2007 = Ground surface
			176.9			
SS 13	5-5-8	12		45	**SAND, silty, clayey (SC-SM)** - Brownish yellow (10YR 6/6), damp, medium dense, fine to medium grained	
SS	6-8-9	14			SAA except yellow (2.5Y 7/8), -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1148

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1148

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	4-4-2	17		55	SAA except loose	
SS 16	1-2-2	18		60	SAA except grayish brown (2.5Y 5/2)	
SS 17	1-2-2	18		65	SAA except pale yellow (2.5Y 8/4), moist	
			152.2			
SS 18	5-6-9	18	149.4	70	**CLAY, silty (CL-ML)** - Pale yellow (5Y 7/4), damp, stiff, medium plasticity, +HCL **CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/1), damp, stiff, low plasticity, +HCL	Transition from Utley Limestone to Blue Bluff Marl from depths of 68.5 to 69.5 Top of Blue Bluff Marl at a depth of 69.5 feet
SS 19	10-12-15	18		75	SAA except contains shell fragments	
SS 20	9-50/4"	10		80	SAA except dark greenish gray (GLEY1 4/1), hard	
SS 21	5-50/4"	10		85	SAA	
SS 22	15-23-50/6"	18		90	SAA	
SS 23	40-50/6"	8		95	SAA except greenish grey (GLEY 1 5/1), high plasticity, contains shell fragments and cemented layers	
SS 24	27-19-33		118.9	100	SAA Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1148**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1150

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Gandy	N 1145467.3 E 624235.3	12/20/2006	12/21/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
170.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			170.7			
SS 1	8-3-2	15.5	170.2		**GRAVEL**	Top of Fill at a depth of 0.0 feet
SS 2	3-5-6	16			**SAND, silty (SM)** - Yellowish red (5YR 5/8), dry, loose, fine grained, nonplastic	Top of Barnwell Group at a depth of 0.5 feet
SS 3	10-10-4	12			SAA except dark reddish brown (5YR 3/4), medium dense	
			165.2	5	SAA except yellowish red (5YR 5/6)	
SS 4	2-2-2	12			**SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/8), moist, loose, fine grained, nonplastic	Installed 3" steel casing to a depth of 8.0 feet
SS 5	2-3-5	13			SAA except yellowish red (5YR 5/8), damp	Water level depth at end of 12/20/06 = Top of casing
			160.2	10		
SS 6	6-7-9	13			**SAND, silty (SM)** - Yellowish red (5YR 5/8), moist, medium dense, fine grained, nonplastic	Water level depth at beginning of 12/21/06 = 21.7 feet
			157.7			
SS 7	5-5-5	13		15	**SAND, clayey (SC)** - Yellowish red (5YR 5/8), moist, loose, fine grained, low plasticity	
			153.7			
SS 8	4-6-7	14		20	**SAND, silty (SM)** - Reddish yellow (5YR 7/8), wet, medium dense, fine grained, nonplastic	
			148.7			
SS 9	2-2-2	18		25	**SILT (ML)** - Reddish yellow (5YR 6/8), moist, soft, low plasticity	
			144.2			Top of Blue Bluff Marl at a depth of 26.5 feet
SS 10	7-11-13	18		30	**SILT (ML)** - Gray (5YR 5/1), damp, very stiff, low plasticity, contains shell hash, +HCL	
SS 11	29-50/1.5"	7.5		35	SAA except hard	
			133.7			
SS 12	50/3"	2		40	**SILT, gravelly (ML)** - Gray (5YR 5/1), moist to wet, hard, contains shell hash, +HCL	
			128.7			
SS 13	50/3"	2		45	**SILT, with gravel (ML)** - Greenish gray (GLEY1 5/1), damp, hard, contains minor shell hash, +HCL	
			123.7			
SS	18-30-50/2"	14			**SILT (ML)** - Greenish gray (GLEY1 5/1), damp, hard, low plasticity, contains shell hash,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1150

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1150

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14							+HCL	
				118.7				
SS 15		30-50/1"	7		55		**SILT, with sand (ML)** - Greenish gray (GLEY1 5/1), dry, hard, low plasticity, contains shell hash, +HCL	
SS 16		24-50/3.5"	9.5		60		SAA except greenish gray (5YR 6/1)	
				108.7				
SS 17		21-14-50/4"	16		65		**CLAY, with sand (CL)** - Greenish gray (GLEY1 5/1), damp, hard, medium plasticity, +HCL	
SS 18		9-11-14	18		70		SAA except greenish gray (GLEY1 7/1)	
				98.7				
SS 19		11-50/5"	11		75		**SILT, with sand (ML)** - Greenish gray (GLEY1 6/1), dry, hard, low plasticity, +HCL	
				93.7				
SS 20		29-35-36	18		80		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/1), damp, hard, low plasticity, +HCL	
SS 21		9-15-14	18		85		SAA except very stiff	
				83.7				
SS 22		9-50/6"	12		90		**CLAY, gravelly (CL)** - Light greenish gray (GLEY1 8/1), moist, hard, medium plasticity, angular GRAVEL, contains shell hash, +HCL	
				79.2				Transitional zone between Blue Bluff Marl and Still Branch Formation
SS 23		11-14-20	18		95		**SAND, silty (SM)** - Dark greenish gray (GLEY1 4/1), moist, hard, fine grained, contains shell hash, nonplastic	
				74.2				Top of Still Branch Formation at a depth of 96.5 feet
SS 24		8-9-14	18	70.7	100		**SAND, clayey (SC)** - Very dark gray (5YR 3/1), damp, medium dense, fine grained, low plasticity, -HCL	
							Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1150**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1152

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1145581.7 E 625227.3	1/2/2007	1/3/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
117.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			117.1		
			116.6	**CONCRETE**	Top of Concrete at a depth of 0.0 feet
				CRUSHED STONE	Top of Crushed Stone at a depth of 0.5 feet
			114.1		Top of Fill at a depth of 3.0 feet
					Installed 3" steel casing to a depth of 10.0 feet
SS 1	9-7-23	14	110.3	**SAND, silty, clayey (SC-SM)** - Red (2.5YR 4/6), damp, dense	
				CLAY, silty (CL-ML) - Greenish gray (GLEY1 5/1), dry, hard, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 6.8 feet
SS 2	48-50/4"	10		SAA except damp	
SS 3	27-36-44	18		SAA	
SS 4	14-11-19			SAA except stiff	
SS 5	15-23-24	18		SAA except greenish grey (GLEY1 6/1), hard	
SS 6	9-13-14			SAA	
SS 7	25-24-27			SAA	
			85.1		
SS 8	7-25-17	18		**CLAY, silty, sandy (CL-ML)** - Light greenish grey (GLEY1 7/1), damp, hard, +HCL	
SS 9	8-17-11	18		SAA except very stiff	
			75.1		
SS 10	45-23-20			**CLAY, silty (CL-ML)** - Light greenish grey (GLEY 1 7/1), damp, hard, medium plasticity, +HCL	
			70.1		
SS	21-27-39	18		**SAND, silty (SM)** - Greenish gray (GLEY1 6/1), moist, very dense, fine to coarse grained.	

DEPTH IN FT: 5, 10, 15, 20, 25, 30, 35, 40, 45

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1152

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1152

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11			65.1		+HCL	
SS 12	29-32-33	18	60.1	55	**SAND, with silt (SP-SM)** - Greenish gray (GLEY1 6/1), moist, very dense, fine to medium grained, +HCL	
SS 13	14-15-28	18	55.1	60	**CLAY, sandy (CL)** - Greenish gray (GLEY1 6/1), damp, hard, fine grained SAND, contains cemented layers, +HCL	
SS 14	20-37-50/6"	18	50.1	65	**SAND, silty, clayey (SC-SM)** - Dark greenish gray (GLEY1 4/1), damp, very dense, contains shell fragments, +HCL	
SS 15	7-14-32	18	47.6	70	**SAND, silty (SM)** - Greenish gray (GLEY1 6/1), damp, dense, +HCL	
			45.1		**SILT (ML)** - Greenish gray (GLEY1 5/1), moist, hard, +HCL	Top of Still Branch Formation at a depth of 72.0 feet
SS 16	4-5-11	18		75	**SAND, silty (SM)** - Very dark gray (2.5Y 3/1), moist, medium dense, fine to medium grained, -HCL	
SS 17	6-6-13	18		80	SAA except damp, fine grained	
SS 18	7-13-33	18		85	SAA except dense	Water level depth at end of 01/02/2007 = Ground surface
			30.1			
SS 19	9-14-21	18		90	**SILT, sandy (ML)** - Greenish gray (GLEY1 5/1), damp, hard, fine grained SAND, -HCL	Water level depth at beginning of 01/03/2007 = 26.0 feet
			25.1			
SS 20	6-10-17	18		95	**SILT, with sand (ML)** - Dark greenish gray (GLEY1 4/1), damp, very stiff, low plasticity, fine grained SAND, -HCL	
			20.1			
SS 21	11-22-27	18	17.1	100	**SILT, sandy (ML)** - Dark greenish gray (GLEY1 4/1), damp, hard, low plasticity, fine grained SAND, -HCL Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1152**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1153

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1145569.0 E 625673.5	1/3/2007	1/4/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
103.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			103.6			
			103.0		**CONCRETE**	Top of Concrete at a depth of 0.0 feet
					GRAVEL	Top of Crushed Stone at a depth of 0.6 feet
			101.1		**FILL** - Brownish sand, no sample taken	Top of Fill at a depth of 2.5 feet
			99.1			Top of Blue Bluff Marl at a depth of 4.5 feet
SS 1	25-50/5"	11		5	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/1), damp, hard, low plasticity, +HCL	
SS 2	10-14-43	18			SAA	
SS 3	30-40-50/2"	14		10	SAA	Installed 3" steel casing to a depth of 10.0 feet
SS 4	5-6-9	18			SAA except stiff	
			86.6	15		
SS 5	3-5-8	18		20	**CLAY, silty, sandy (CL-ML)** - Greenish gray (GLEY1 6/1), damp, stiff, low plasticity, +HCL	
SS 6	7-25-17	18		25	SAA except hard	
SS 7	11-20-50	18		30	SAA	
SS 8	10-14-15	18		35	SAA except light greenish gray (GLEY1 8/1), very stiff, contains shell fragments	
			66.6			
SS 9	30-41-50/4"	16		40	**SAND, clayey (SC)** - Light greenish gray (GLEY1 7/1), damp, very dense, low plasticity, fine grained, contains shell fragments, +HCL	
SS 10	22-26-22	18		45	SAA except greenish gray (GLEY1 6/1)	
			56.6			
SS	22-13-17	18			**CLAY, silty, sandy (CL-ML)** - Dark greenish gray (GLEY1 4/1), damp, hard, low plasticity,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1153

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1153

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11				52.6			fine grained SAND, +HCL	
SS 12		9-14-20	18		55		**SAND, silty (SM)** - Very dark gray (2.5YR 3/N), damp, dense, fine grained, -HCL	Top of Still Branch Formation at a depth of 51.0 feet
SS 13		28-43-33	18		60		SAA except very dark greenish gray (GLEY1 3/1), moist, very dense, fine to medium grained	Water level depth at beginning of 1/4/07 = 22.0 feet
				41.6				
SS 14		13-22-32	18		65		**SAND, silty, clayey (SC-SM)** - Very dark gray (5Y 3/1), moist, very dense, fine grained, -HCL	
SS 15		5-7-11	18		70		SAA except dark grey (5Y 4/1), damp, very stiff, low plasticity	
SS 16		5-9-14	18		75		SAA except greenish gray (GLEY1 5/1)	
				26.6				
SS 17		4-4-8	18		80		**SILT (ML)** - Dark greenish gray (GLEY1 4/1), damp, stiff, -HCL	
				21.6				
SS 18		4-6-11	18		85		**CLAY, silty (CL-ML)** - Very dark greenish gray (GLEY1 3/1), damp, very stiff, -HCL	
				16.6				
SS 19		7-8-9			90		**CLAY, silty, sandy (CL-ML)** - Greenish gray (GLEY1 5/1), damp, very stiff, fine to medium grained SAND, -HCL	
SS 20		8-10-11	18		95		SAA	
SS 21		5-10-11		3.6	100		SAA Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1153**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1154

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Gandy	N 1145664.2 E 626216.1	12/19/2006	12/20/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	98.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
95.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			95.1			
SS 1	9-17-18	17			**GRAVEL, silty (GM)** - Yellowish red (5YR 4/6), dry, dense, angular	Top of Fill at a depth of 0.0 feet
SS 2	21-26-22	18			SAA except brown (7.5YR 4/2)	
			91.8			
SS 3	8-16-19	15		5	**SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/8), dry, dense, fine grained, nonplastic	
SS 4	9-13-17	15			SAA	
SS 5	9-11-12	14.5		10	SAA	
SS 6	6-4-11	13			SAA except reddish yellow (5YR 6/8) and yellowish red (5YR 4/6), medium dense	
			82.1			
SS 7	17-10-17	7		15	**GRAVEL (GP)** - Wet, dense, nonplastic	
			78.6			
						Transition zone between Fill and Alluvium
SS 8	2-1-1	13		20	**SAND, silty (SM)** - Brown (7.5YR 4/3), moist to wet, very loose, fine to medium grained, nonplastic	
			73.6			
						Top of Alluvium at a depth of 21.5 feet
SS 9	3-4-4	15		25	**SAND, with silt (SP-SM)** - Light brown (7.5YR 6/3), wet, loose, coarse grained, nonplastic	
			68.1			
SS 10	4-5-6	13		30	**SAND (SP)** - Very pale brown (10YR 7/3), wet, medium dense, coarse gained, nonplastic	
SS 11	4-5-3	12		35	SAA except loose, fine to coarse grained	Installed 3" steel casing to a depth of 33.0 feet
SS 12	3-3-3	12		40	SAA	
SS 13	4-6-5	12		45	SAA	
			48.1			
SS	8-15-17	18			**SAND, silty (SM)** - Dark brown (7.5YR 3/2), moist, dense, fine grained, nonplastic	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1154

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1154

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	8-11-15	18		55	SAA except brown (7.5YR 5/2), medium dense, very fine grained, -HCL	
SS 16	8-10-17	18		60	SAA	
			33.1			
SS 17	7-12-19	18		65	**SILT, sandy (ML)** - Brown (7.5YR 4/2), damp, hard, nonplastic, -HCL	
			28.6			Top of Still Branch Formation at a depth of 66.5 feet
SS 18	15-24-25	18		70	**SAND, silty (SM)** - Dark gray (10YR 4/1), moist, dense, fine grained, nonplastic, -HCL	
SS 19	7-9-12	18		75	SAA except gray (10YR 5/1), wet, medium dense	
			18.1			Water level depth at end of 12/19/06 = Top of casing
SS 20	4-7-8	18		80	**SAND, clayey (SC)** - Gray (7.5YR 5/1), moist, medium dense, fine grained, medium plasticity, contains 5.5" thick CLAY seam, -HCL	Water level depth at beginning of 12/20/06 = 20.2 feet
			13.1			
SS 21	9-14-21	18		85	**SAND, silty (SM)** - Gray (7.5YR 5/1), moist, dense, fine grained, nonplastic, contains 7" thick CLAY seam, -HCL	
SS 22	7-14-26	18		90	SAA except moist to wet, contains no CLAY seam	
SS 23	14-24-48	18		95	SAA except wet, very dense	
			-3.4			Top of Congaree Formation at a depth of 96.5 feet
SS 24	50/3"	3			**SAND, with silt (SP-SM)** - Gray (7.5YR 6/1), wet, very dense, medium to coarse grained, nonplastic, -HCL Boring terminated at 98.75 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1154**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1155

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Gandy	N 1147390.3 E 624936.4	11/28/2006	12/6/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55 LC	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
85.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			85.0			
SS 1	1-1-2	12	84.0		**SILT (ML)** - Brown (7.5YR 4/3), damp, soft, fine-grained, low plasticity, contains small roots	Top of Alluvium at a depth of 0.0 feet
SS 2	1-2-2	15			***SAND, with gravel (SP)** - Yellowish brown (10YR 5/4), moist, very loose, medium to coarse grained, nonplastic	
SS 3	6-6-3	15			SAA except dark yellowish brown (10YR 4/4), loose, rounded cobbles of quartz common, cobbles are 0.5"-1" in diameter	
			79.5	5	SAA	
SS 4	1-1-1	11			***SAND (SP)** - Light yellowish brown (10YR 6/4), wet, very loose	
SS 5	1-1-1	13.5			SAA	
			75.2	10	**SILT, with sand (ML)** - Dark gray (7.5YR 4/1), wet, soft, low plasticity, slightly micaceous, fine grained	
SS 6	WOH/18"	15			SAA	
SS 7	WOH/18"	3.5			SAA	
				15		Water level depth at end of 11/28/2006 = Ground surface
			68.0			
SS 8	2-4-4	12		20	**SAND (SP)** - Light brownish gray (10YR 6/2), wet, loose, coarse grained, nonplastic	Water level depth at beginning of 11/29/2006 = 7.5 feet
			62.5			
SS 9	3-2-4	12	60.4	25	**SILT, with sand (ML)** - Dark gray (7.5YR 4/1), wet, medium stiff, nonplastic, fine grained, sub-angular cobbles of 1" diameter, contains organics	
					SAND (SP) - Light brownish gray (10YR 6/2), wet, loose, fine to medium grained, nonplastic, slightly micaceous	
SS 10	3-3-3	11		30	SAA except coarse grained	
			53.0			
SS 11	WOH/6"-1-1	18		35	**CLAY, with silt (CL)** - Very dark gray (7.5YR 3/1), damp, very soft, fine grained, medium plasticity, micaceous	
			48.5			
SS 12	1-2-2	11		40	**SAND (SP)** - Grayish brown (10YR 5/2), wet, loose, fine to medium grained, nonplastic	
SS 13	4-5-4	11.5		45	SAA except stiff, coarse grained	
			38.5			Top of Still Branch Formation at a depth of 46.5 feet
SS	4-9-11	18	36.0		**SAND, with clay (SP-SC)** - Dark gray (5YR 4/1), wet, medium dense, fine grained, slightly	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	**B-1155**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1155

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					micaceous	Water level depth at end of 11/29/2006 = Ground surface
					***SAND (SP)** - Dark gray (5YR 4/1), wet, medium dense, medium grained, nonplastic	
SS 15	7-8-11	18		55	SAA	Water level depth at beginning of 11/30/2006 = 8.5 feet
SS 16	3-3-5	18	26.0	60	SAA except loose	
			23.5		**SAND, with clay (SP-SC)** - Dark gray (5YR 4/1), wet, loose, fine grained, low plasticity	
SS 17	6-6-8	18		65	***SAND, with clay (SP-SC)** - Dark gray (5YR 4/1), wet, medium dense, fine grained, nonplastic	
SS 18	16-20-16	17.5		70	SAA except dense	
SS 19	5-4-12	18		75	SAA except low plasticity	
			8.5			Top of Congaree Formation at a depth of 76.5 feet
SS 20	50/6"	6		80	***SAND (SP)** - Gray (5YR 5/1), wet, dense, fine to medium grained, nonplastic	
SS 21	30-45-36	17.5		85	SAA	
			-1.6			
SS 22	6-7-20	18		90	**CLAY (CL)** - Gray (5YR 5/1), moist, very stiff, medium plasticity	
			-6.6			Water level depth at end of 11/30/2006 = Ground surface
SS 23	32-47-50/6"	18		95	***SAND, with clay (SP-SC)** - Gray (5YR 5/1), wet, dense, fine to coarse grained, low to nonplasticity, and abundant quartz grains	Water level depth at beginning of 12/01/2006 = 5 feet
SS 24	8-16-20	18		100	SAA except contains traces of oxidized sands and a 4" clay seam	
SS 25	7-42-50/4"	16		105	SAA except gray (5YR 6/1 -7/1)	
			-22.1			Water level depth at end of 12/01/2006

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1155**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1155

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		20-40-50			110		**SAND, with silt (SP-SM)** - Gray (5YR 6/1), moist, dense, coarse grained, contains non-plastic silt, -HCL	=Top of Casing Water level depth at beginning of 12/04/2006 = Top of Casing
SS 27		18-34-37	18		115		SAA except dark grey (5YR 4/1), wet very dense, fine grained	
SS 28		22-50/6"	12		120		SAA	
SS 29		32-50/4"	10		125		SAA except dense	
SS 30		17-21-26	18	-46.6	130		SAA	
SS 31		21-24-25	18	-51.6	135		**SAND, silty (SM)** -Dark gray (5YR 4/1), wet, dense, fine to coarse grained, contains clayey sand seams of less than 2" in widh	
SS 32		21-37-31	18		140		**SAND, with silt (SP-SM)** - Gray (5YR 5/1), wet, very dense, coarse grained, nonplastic, slightly micaceous, abundant quartz grains	Water level depth at end of 12/04/2006 = Top of Casing
SS 33		46-50/2"	8	-61.6	145		SAA except dark grey (5YR 4/1), medium to coarse grained	Water level depth at beginning of 12/05/2006 = 1.5 feet above ground surface
SS 34		34-34-23	13	-65.1	150		**CLAY, with sand (CL)** - Bluish gray (GLEY2 6/1), dry, hard, fine grained, medium plasticity Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1155**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1156

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Gandy	N 1147302.5 E 624571.7	12/13/2006	12/14/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55 LC	3 Inches	331145	99.2

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
85.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			85.7			
SS 1	1-2-1	11	84.7		**SILT (ML)** - Dark brown (7.5YR 3/2), dry, soft, low to non-plastic, contains small roots and organics	Top of Alluvium at a depth of 0.0 feet
SS 2	WOH/12"-1	12	83.7		**SAND, with clay (SP-SC)** - Yellowish brown (10YR 5/6), moist, very loose, fine grained, contains low plasticity clay	
SS 3	1-2-1	10	82.2	5	SAA	
SS 4	WOH/18"	9			**CLAY (CL)** - Brown (7.5YR 4/3), damp, very soft, medium plasticity	
			77.7		***CLAY (CH)** - Brown (7.5YR 4/3), moist, soft, high plasticity	
SS 5	WOH/12"-1	18	76.7		SAA except brown (7.5YR 5/2), wet, very soft, contains organics	
SS 6	WOH/18"	17.5	75.2	10	**CLAY, silty (CL-ML)** - Brown (7.5YR 4/3), moist, very soft, low to medium plasticity, micaceous	
SS 7	WOH/12"-1	17	72.7		**SILT (ML)** - Dark gray (10YR 4/1), wet, very soft, non-plastic, organics comprise majority of sample	
UD 1		24		15	**CLAY, silty (CL)** - Dark gray (10YR 4/1), moist, very soft, low plasticity, micaceous	
			68.0		**SILT (ML)** - Gray (10YR 5/1), wet, very soft, non to low plasticity	
					SAA	
					Pocket Penetrometer: 1.0 TSF	
SS 8	2-2-1	18		20	**CLAY, sandy (CL)** - Yellowish brown (10YR 5/4), damp, soft, medium plasticity	
			63.7			
SS 9	1-2-1	14		25	**CLAY, silty with sand (CL)** - Brownish yellow (10YR 6/6), damp, soft, medium plasticity	
			59.2			Top of Still Branch Formation at a depth of 26.5 feet
SS 10	2-2-3	15		30	***SAND, with clay (SP-SC)** - Gray (7.5YR 5/1), moist, loose, fine grained, contains low plasticity clay	
			53.7			
SS 11	3-5-7	16		35	**SAND, clayey (SC)** - Gray (7.5YR 5/1), wet, medium dense, fine grained, slightly micaceous	
			49.2			
UD 2		23	46.2	40	**CLAY, sandy (CL)** - Dark gray (7.5YR 4/1), damp, medium plasticity	
			43.7		**SAND, silty (SM)** - Dark gray (7.5YR 4/1), wet, medium grained, non-plastic	
					Pocket Penetrometer: 0.75 TSF	
UD 3		24	41.2	45	**CLAY, sandy (CL)** - Brown (7.5YR 5/3), moist, medium plasticity	
			38.7		**SAND, clayey (SC)** - Dark gray (5YR 4/1), moist, fine grained, contains low plasticity clay	Water level depth at end of 12/13/2006 = Ground surface
					Pocket Penetrometer: 0.5 TSF	
SS	8-7-23	18			**CLAY, sandy (CL)** - Gray (7.5YR 5/1), moist, very stiff, low plasticity	Water level depth at beginning of

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1156

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1156

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
12			34.2			12/14/2006 = 4.2 feet
SS 13	13-11-16	18		55	***SAND, with silt (SP-SM)** - Gray (7.5YR 5/1), wet, medium dense, fine grained, non-plastic	
SS 14	30-45-34	18		60	SAA except gray (10YR 5/1), very dense	
SS 15	11-17-21	18		65	SAA except dense, -HCL	
			19.2			Top of Congaree Formation at a depth of 66.5 feet
SS 16	34-50/4"	10		70	***SAND, with silty clay (SP-SC)** - Gray (7.5YR 5/1), wet, very dense, coarse grained, non-plastic, -HCL	
SS 17	22-33-32	16		75	SAA except contains traces of clay	
			8.7			
SS 18	50/6"	6		80	***SAND, with silt (SP-SM)** - Gray (7.5YR 6/1), wet, very dense, coarse grained, non-plastic, -HCL	
			3.7			
SS 19	22-48-50/3.5"	15.5		85	**SAND, silty (SM)** - Gray (7.5YR 5/1), wet, very dense, fine grained, non-plastic, -HCL	
			-0.8			
UD 4		15	-3.3	90	**SAND, clayey (SC)** - Gray (7.5YR 5/1), wet, fine grained, low plasticity, -HCL	
			-5.8		**CLAY, silty with sand (CL-ML)** - Gray (5YR 5/1), damp, -HCL Pocket Penetrometer: 2.5 TSF	
SS 20	40-34-50/5"	17		95	***SAND, silty, clayey (SC-SM)** - Gray (5YR 5/1), wet, very dense, coarse grained, non-plasticity, contains abundant quartz grains	
SS 21	38-50/2"	8	-13.5		SAA Boring terminated at 99.17 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1156**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1157

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Gandy	N 1147209.6 E 625062.2	12/6/2006	12/8/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
86.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			86.8		
SS 1	1-2-3	10	86.0	**SILT, with clay (ML)** - Dark brown (7.5YR 3/4), damp, medium stiff, fine-grained, low plasticity, contains small roots	Top of Alluvium at a depth of 0.0 feet
SS 2	2-2-2	15		**SAND (SP)** - Yellowish brown (10YR 5/6), damp, loose, medium to coarse grained, non-plastic	
SS 3	2-2-2	14		SAA except yellowish brown (10YR 5/4) SAA except moist	
SS 4	2-2-2	10	78.8	SAA except brownish yellow (10YR 6/6), wet, micaceous	
SS 5	1-1-WOH/6"	17		**SILT (ML)** - Brown (7.5YR 4/2), wet, very soft, low plasticity, micaceous	
SS 6	WOH/18"	18		SAA	
SS 7	WOH/12"-1	18		SAA except medium plasticity	
SS 8	WOH/12"-1	18	64.8	SAA except dark gray (7.5YR 4/1), moist	
SS 9	3-3-5	14		**SAND (SP)** - Very dark grayish brown (10YR 3/2), wet, loose, medium to coarse grained, contains abundant quartz fragments	Installed 3" steel casing to a depth of 23.0 feet
SS 10	4-5-4	9.5	55.3	SAA except grayish brown (10YR 5/2), coarse grained, quartz fragments larger than 0.5" are common	
SS 11	3-2-3	18	49.8	**SILT (ML)** - Greenish gray (GLEY1 5/1), moist, soft, low plasticity, contains shell hash, +HCL	Top of Blue Bluff Marl (Reworked) at a depth of 31.5 feet
SS 12	4-3-5	15		**CLAY (CL)** - Greenish gray (GLEY1 6/1), damp, medium stiff, medium plasticity, contains minor gravel up to 1" diameter, +HCL	
SS 13	6-6-7	18		SAA except stiff, low plasticity	
SS	3-4-5	14	37.5	SAA except moist, medium plasticity	Top of Still Branch

DEPTH IN FT: 5, 10, 15, 20, 25, 30, 35, 40, 45

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1157

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1157

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			34.8		**SAND, with silt (SP-SM)** - Gray (5YR 5/1), wet, loose, non-plastic, -HCL	Formation at a depth of 49.25 feet
SS 15	3-4-6	18		55	**SAND, clayey (SC)** - Dark gray (7.5YR 4/1), damp to moist, loose, low plasticity, +HCL	Water level depth at end of 12/06/2006 = Top of casing
SS 16	5-8-7	18	24.8	60	SAA except -HCL	Water level depth at beginning of 12/07/2006 = 11.7 feet
SS 17	3-4-5	18	19.8	65	**SAND, with silt (SP-SM)** - Gray (7.5YR 6/1), wet, loose, fine grained	
SS 18	5-25-21	18	17.4	70	**CLAY, with silt (CL)** - Gray (7.5YR 5/1), moist, hard, medium plasticity	Top of Congaree Formation at a depth of 69.4 feet
			14.8		**SAND, with silt (SP-SM)** - Gray (7.5YR 6/1), wet, very dense, coarse grained, non plasticity	
SS 19	4-4-5	18		75	***SAND, with clay (SP-SC)** - Gray (7.5YR 5/1), wet, loose, fine grained, low plasticity	
SS 20	5-5-5	18	4.8	80	SAA except gray (7.5YR 6/1), low plasticity, -HCL	
SS 21	5-7-10	18	-0.2	85	***SAND (SP)** Gray (7.5YR 5/1), wet, medium dense, medium to coarse grained	
SS 22	8-8-9	18	-5.2	90	**CLAY, silty with sand (CL-ML)** - Gray (7.5YR 5/1), damp, very stiff, low plasticity, -HCL	
SS 23	6-12-23	18		95	**SAND, silty, clayey (SC-SM)** - Gray (7.5YR 5/1), wet, dense, fine grained, non-plastic, -HCL	
SS 24	5-26-28	18		100	SAA except very dense	
SS 25	6-23-22	18	-20.2	105	SAA except contains minor lignite and 8" clay seam	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1157**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1157

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	8-13-19	18		110	**CLAY, silty with sand (CL-ML)** - Light gray (10R 7/1), damp, hard, medium plasticity, -HCL	
			-25.2			
SS 27	3-13-28	16		115	**SAND, silty, clayey (SC-SM)** - Light gray (10R 7/1), wet, dense, non-plastic, -HCL	
SS 28	8-13-15	18		120	SAA except dark gray (7.5YR 4/1), medium dense, fine grained	
			-35.2			
SS 29	12-19-28	18		125	**SAND, silty (SM)** - Dark gray (7.5YR 4/1), wet, dense, fine grained, non-plastic, -HCL	
SS 30	24-50/5"	10		130	SAA except very dense, fine to medium grained	Water level depth at end of 12/07/2006 = Top of casing
SS 31	15-34-50/5"	16		135	SAA except gray (7.5YR 6/1), medium grained, contains minor lignite and a 6" clay seam	Water level depth at beginning of 12/08/2006 = 11.5 feet
SS 32	16-44-33	15		140	SAA except medium to coarse grained	
			-55.2			
SS 33	17-19-18	18		145	**CLAY, with sand (CL)** - Dark gray (7.5 YR 4/1), moist, hard, medium plasticity, -HCL	
SS 34	10-14-18	18	-63.2	150	SAA except bluish gray (GLEY2 6/1), dry, hard, fine grained, medium plasticity, -HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1157**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1158

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Gandy	N 1145194.9 E 626669.1	12/15/2006	12/18/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	149.5

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
88.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			88.7			
SS 1	3-5-5	15			**SILT (ML)** - Yellowish red (5YR 4/6), dry, stiff, nonplastic, micaceous, contains organics	Top of Alluvium at a depth of 0.0 feet
SS 2	4-6-6	14			SAA	
SS 3	5-7-7	15		5	SAA except brown (7.5YR 4/3)	Installed 3" steel casing to a depth of 3.0 feet
SS 4	3-4-4	12	80.7		SAA except brown (7.5YR 4/4)	
SS 5	1-2-2	15		10	**CLAY, silty (CL-ML)** - Brown (7.5YR 4/2), dry, soft, low plasticity, slightly micaceous	
SS 6	WOH/12"-2	18	75.7		SAA except damp	
SS 7	WOH/6"-2-1	18		15	**SILT, sandy (ML)** - Brown (7.5YR 4/2), damp, soft, nonplastic, micaceous	
			71.7			
SS 8	3-2-4	10.5		20	**SAND (SP)** - Light brown (7.5YR 6/3), wet, loose, coarse grained, nonplastic	
SS 9	3-4-4	12		25	SAA except medium grained	
SS 10	4-2-3	10		30	SAA except medium to coarse grained	
SS 11	3-4-3	9.5		35	SAA except coarse grained	
			51.7			
SS 12	WOH/18"	18		40	**CLAY, silty (CL-ML)** - Very dark gray (7.5YR 3/1), damp, very soft, medium plasticity, slightly micaceous	
			46.7			
SS 13	WOH/18"	18		45	**CLAY, silty with sand (CL-ML)** - Dark gray (7.5YR 4/1), moist, very soft, low plasticity, micaceous	
			41.7			
SS	4-8-8	12	39.5		**GRAVEL, with sand (GP)** - Pale brown (10YR 6/3), wet, medium dense, nonplastic, contains cementation, +HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1158

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1158

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			37.2		**SAND, with silt (SP-SM)** - Brown (7.5YR 5/3), wet, medium dense, medium to coarse grained, nonplastic, -HCL	Top of Still Branch Formation at a depth of 51.5 feet
SS 15	5-8-11	18		55	**SILT (ML)** - Brown (7.5YR 4/2), moist, very stiff, low plasticity, micaceous, -HCL	
SS 16	4-4-9	18		60	SAA except dark gray (7.5YR 4/1)	
			26.7			
SS 17	18-28-32	16		65	**SAND, silty (SM)** - Gray (10YR 6/1), moist, very dense, fine grained, nonplastic, micaceous, -HCL	Water level at end of 12/15/2006 = Top of casing
			21.7			
SS 18	6-15-28	17		70	**SAND, clayey (SC)** - Dark gray (10YR 4/1), wet, dense, medium to coarse grained, low plasticity, -HCL	
			16.7			
SS 19	16-26-50	18		75	**SAND, silty (SM)** - Dark gray (7.5YR 4/1), moist, very dense, fine grained, nonplastic, -HCL	
			11.7			
SS 20	6-22-38	17		80	**SAND, with silt (SP-SM)** - Gray (10YR 5/1), moist, very dense, fine grained, nonplastic, -HCL	
SS 21	12-27-38	17	4.1	85	SAA	
			2.2		**CLAY, sandy (CL)** - Dark gray (2.5YR 4/1), damp, hard, medium plasticity, -HCL	Top of Congaree Formation at a depth of 86.5 feet
SS 22	23-34-35	16		90	**SAND, silty (SM)** - Gray (7.5YR 5/1), wet, dense, coarse grained, nonplastic, -HCL	
			-3.3			
SS 23	21-33-50	16		95	**SAND, with silt (SP-SM)** - Gray (7.5YR 5/1), wet, dense, medium grained, nonplastic, -HCL	
SS 24	43-18-16	18	-10.7	100	SAA **CLAY, silty (CL-ML)** Dark gray (5YR 4/1), moist, hard, medium plasticity, -HCL	
			-13.3			
SS 25	WOH/6"-15-16	18	-16.0	105	**CLAY, with sand (CL)** - Dark gray (5YR 4/1), moist, hard, medium plasticity, -HCL **SAND, silty (SM)** - Gray (7.5YR 5/1), moist, dense, fine grained, nonplastic, -HCL	
			-18.3			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1158**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1158

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	6-15-33	18		110	**SAND, clayey (SC)** - Gray (7.5YR 5/1), wet, dense, fine grained, low plasticity, -HCL	
			-23.3			
SS 27	12-27-30	18		115	**SAND, silty (SM)** - Light gray (7.5YR 7/1), wet, very dense, coarse grained, nonplastic, -HCL	
SS 28	10-15-20	18		120	SAA except very pale brown (10YR 8/2), dense, fine grained, micaceous	
SS 29	8-10-16	18		125	SAA except medium dense	
SS 30	13-21-26	16.5		130	SAA except light gray (7.5YR 7/1), dense, coarse grained	
SS 31	21-25-23	17		135	SAA except gray (10YR 6/1)	
			-48.3			
SS 32	13-21-30	18		140	**SAND, silty with gravel (SM)** - Light gray (7.5YR 7/1), wet, dense, coarse grained, nonplastic, -HCL	
			-53.3			
SS 33	12-23-31	18		145	**SAND, silty (SM)** - Dark gray (7.5YR 4/1), wet, dense, fine grained, nonplastic, -HCL	
SS 34	22-50/6"	9.5	-60.8		SAA	
					Boring terminated at 149.5 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1158**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1159

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Gandy	N 1147285.8 E 624954.5	12/11/2006	12/13/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
88.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			88.7			
SS 1	WOH/6"-1-2	14			**SAND (SP)** - Dark yellowish brown (10YR 4/4), damp, very loose, medium grained	Top of Alluvium at a depth of 0.0 feet
SS 2	1-1-2	14	86.0		SAA	
SS 3	4-4-4	12		5	**SILT (ML)** - Dark reddish brown (5YR 3/3), damp, soft, low plasticity SAA except red (2.5YR 4/6), damp, medium stiff, low plasticity, micaceous	
SS 4	4-4-6	12			SAA except brown (7.5YR 4/4), stiff	
SS 5	2-3-3	11	78.2	10	SAA except medium stiff	
SS 6	WOH/18"	16			**CLAY, silty (CL)** - Gray (7.5YR 5/1), moist, very soft, medium plasticity, micaceous	
SS 7	WOH/18"	18	71.7	15	SAA except dark gray (7.5YR 4/1)	
SS 8	1-1-2	18		20	**SILT, clayey (ML)** - Dark gray (2.5Y 4/1), moist, soft, low plasticity, micaceous	
SS 9	1-1-1	18	61.7	25	SAA except wet	
SS 10	3-4-4	9.5		30	**SAND (SP)** - Brown (10YR 5/3), wet, loose, medium to coarse grained, abundant quartz grains	
SS 11	3-4-3	11	52.2	35	SAA except brownish yellow (10YR 6/6)	
SS 12	9-6-5	12	47.2	40	**GRAVEL, silty with sand (GM)** - Greenish gray (GLEY1 6/1), wet, medium dense, gravel is less than 2" diameter (limestone), non to low plasticity	Top of Blue Bluff Marl at a depth of 36.5 feet
SS 13	3-3-4	18		45	**SAND, clayey (SC)** - Dark gray (7.5YR 4/1), wet, loose, fine grained, low plasticity, -HCL	Top of Still Branch Formation at a depth of 41.5 feet
SS	8-11-11	17			SAA except wet to moist, medium dense	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1159

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 3	HOLE NO. B-1159

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	7-10-18	18		55	SAA except very dark gray (7.5YR 3/1), wet, medium grained	
			31.7			
SS 16	5-6-7	18		60	***SAND, with clay (SP-SC)** - Gray (7.5YR 5/1), moist, fine grained, medium plasticity, -HCL	
			26.7			
SS 17	4-6-10	18		65	**SAND, silty (SM)** - Gray (7.5YR 5/1), wet, medium dense, fine grained, non-plastic, -HCL	
			22.2			Top of Congaree Formation at a depth of 66.5 feet
SS 18	37-50/5.5"	11.5		70	**SAND (SP)** - Gray (7.5YR 6/1), wet, very dense, coarse grained, non-plastic, contains abundant quartz fragments, -HCL	
			16.7			
SS 19	30-50/5.7"	11.7		75	**SAND, with silt (SP-SM)** - Gray (7.5YR 5/1), wet, very dense, medium to coarse grained, non-plastic, contains abundant quartz fragments, -HCL	
SS 20	9-11-17	15		80	SAA except medium dense, coarse grained	Water level depth at end of 12/11/2006 = Ground surface
SS 21	9-50/5.7"	11.7		85	SAA except very dense, medium to coarse grained	Water level depth at beginning of 12/12/2006 = 13.25 feet
SS 22	38-38-22	15.5		90	SAA	
			-3.3			
SS 23	7-10-11	18		95	**CLAY, with sand (CL)** - Gray (7.5YR 5/1), damp, very stiff, medium plasticity, -HCL	
			-8.3			
SS 24	9-19-28	18		100	**SAND, with silt (SP-SM)** - Gray (7.5YR 5/1), wet, dense, fine grained, non-plastic, contains minor lignite, -HCL	
SS 25	17-29-37	18		105	SAA except moist to wet, very dense, contains a 3" clay seam, slightly micaceous	

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-1159

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1159

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	32-50/3"	9		110		SAA except gray (7.5YR 6/1), wet	
SS 27	☒	50/4"	4	-28.3	115		SAA except fine to medium grained	
SS 28	☒	24-50/5"	11	-33.3	120		**SAND, silty, clayey (SC-SM)** - Light gray to white (7.5YR 7/1 - 8/1), wet to moist, very dense, medium to coarse grained, low plasticity	
SS 29	☒	11-27-36	18		125		**SAND, silty (SM)** - Dark gray (10YR 4/1), wet, very dense, fine grained, non-plastic, -HCL	
SS 30	☒	12-20-50/5.9	17.88		130		SAA	
SS 31	☒	21-50/5"	10	-48.3	135		SAA	
SS 32	☒	8-32-37	18	-50.5	140		**CLAY (CL)** - Dark gray (10YR 4/1), damp, hard, medium to high plasticity, -HCL **SAND, silty (SM)** - Gray (7.5YR 5/1), wet, very dense, medium grained, non-plastic, micaceous, -HCL	
SS 33	☒	25-38-31	16		145		SAA	
SS 34	☒	20-35-36	15	-61.3	150		SAA except gray (7.5YR 6/1), contains 1.5" clay seam , -HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1159**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1161

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1147363.4 E 624862.1	12/7/2006	12/12/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	4 Inches	337153	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
86.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			86.1			
SS 1	1-1-1	8			**CLAY, silty with sand (CL-ML)** - Dark yellowish brown (10YR 4/4), damp, very soft	Top of Alluvium at a depth of 0.0 feet
SS 2	3-4-5	8			SAA except stiff	
			82.6			
SS 3	3-3-3	15		5	**CLAY, silty (CL-ML)** - Brown (10YR 4/3), damp, medium stiff	End logging by S. Woodham. Begin logging by A. Taylor.
SS 4	WOH/18"	18			SAA except moist, very soft	
SS 5	WOH/18"	18		10	SAA	
SS 6	1/18"	18			SAA except dark grayish brown (2.5Y 4/2)	
SS 7	WOH/18"			15	SAA except very dark grey (5Y 3/1)	
			69.1			
SS 8	WOH/18"	7		20	**SILT, with sand (ML)** - Very dark grey (5Y 3/1), damp, very soft	Changed from 3 7/8" to 2 7/8" drilling bit.
			64.1			
SS 9	2-3-4	15		25	**SAND (SP)** - Dark greyish brown (10YR 4/2), moist, loose	
SS 10	WOH/18"	18		30	SAA	
			54.1			
SS 11	WOH/18"	18		35	**SILT (MH)** - Very dark grey (5Y 3/1), moist, very soft, medium plastic	
SS 12	WOH/18"	18		40	SAA	Water level depth at end of 12/07/2006 = Ground surface
SS 13	3-2-1	16		45	SAA	Water level depth at beginning of 12/08/2006 = Ground surface
			39.3			Top of Still Branch Formation at a depth of 46.8 feet
SS	5-5-6	11			***SAND, with silt (SP-SM)** - Dark grey (5YR 4/1), damp, medium dense, -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1161

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1161

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	3-5-6	11		55	SAA except brown (10YR 4/3), subangular	
SS 16	4-5-5	18		60	SAA except greenish grey (GLEY2 5/10G)	
SS 17	5-5-8	18		65	SAA	
SS 18	7-9-9	18		70	SAA	
			14.6			Top of Congaree Formation at a depth of 71.5 feet
SS 19	8-13-28	16		75	**SAND (SP)** - Dark grey (5YR 3/1), damp, dense, -HCL	
SS 20	27-50/5"	11		80	SAA except very dense, contains 4" thick layer of high plasticity clay with sand, very dark greenish grey (GLEY1 3/5GY), damp	
SS 21	15-36-48	18		85	SAA	
			-0.9			
SS 22	6-11-23	18		90	**CLAY, sandy (CH)** - Very dark greenish grey (GLEY1 3/5G), damp, hard, -HCL	
			-5.9			
SS 23	11-36-26	12		95	**SAND, with clay (SP-SC)** - Dark grey (GLEY1 4/N), damp, very dense, -HCL	
			-10.9			
SS 24	13-24-22	18		100	**SAND (SP)** - Dark grey (GLEY1 4/N), damp, dense, -HCL	
			-15.9			
SS 25	7-21-24	18	-18.4	105	**CLAY, sandy (CH)** - Very dark greenish grey (GLEY1 3/5G), damp, hard, -HCL **SAND (SP)** - Dark grey (GLEY1 4/N), damp, dense, -HCL	Water level depth at end of 12/08/2006 =

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1161**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1161

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		5-24-50	12		110		SAA except greenish gray (GLEY1 5/1), wet, very dense, medium to coarse	Ground surface End logging by A. Taylor. Begin logging by S. Woodham. Water level depth at beginning of 12/11/2006 = 2.0 feet
SS 27		50/5.5"	5.5		115		SAA	
				-30.9			**SAND, silty (SM)** - Very dark greenish gray (GLEY1 3/1), moist, very dense, fine grained, -HCL	
SS 28		40-50/6"	12		120			
SS 29		36-50/4"	10		125		SAA except dark greenish gray (GLEY 1 4/1)	
SS 30		20-50/6"	12		130		SAA except dark gray (5Y 4/1)	
SS 31		24-42-45	16		135		SAA except gray (GLEY 1 5/N)	Water level depth at end of 12/11/2006 = Ground surface
SS 32		20-24-35	18		140		SAA	Water level depth at beginning of 12/12/2006 = 4.0 feet
				-55.9			**CLAY (CL)** - Very dark gray (GLEY1 3/N), damp, very hard, contains sand seams 1/4" to 2" thick, -HCL	
SS 33		9-50/5"	11		145			
SS 34		18-22-25	18	-63.9	150		SAA Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1161**

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GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-1162

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1147234.9 E 624815.0	12/12/2006	12/14/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	4 Inches	337153	200.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
85.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			85.6			
SS 1	1-2-3	8			**CLAY, silty (CL-ML)** - Brown (7.5YR 4/4), damp, medium stiff, -HCL	Top of Alluvium at a depth of 0.0 feet
SS 2	4-4-4	12			SAA	
SS 3	WOH/18"	18		5	SAA except very soft	
SS 4	WOH/18"	18			SAA except greenish gray (GLEY1 5/1)	
SS 5	WOH/18"	18	75.1	10	SAA	
SS 6	WOH/18"	18			**SILT (ML)** - Dark greenish gray (GLEY1 4/1), damp, very soft	
UD 1		21.5		15		Direct Push
SS 7	WOH/18"	18		20	SAA except greenish gray (GLEY1 5/1)	
			63.6			
SS 8	2-4-2	18		25	**SAND, silty (SM)** - Dark greenish gray (GLEY1 4/1), moist, loose	
			58.6			
SS 9	1-4-3	16		30	**CLAY, sandy (CL)** - Olive yellow (2.5Y 6/6), damp, medium stiff, contains white shells, +HCL	
			53.6			
SS 10	20-40-21	16		35	**CLAY (CL)** - Yellow (5Y 8/6), damp, hard, contains white shell layers, +HCL	
			48.6			
SS 11	2-14-7	13		40	***CLAY, sandy (CL)** - Greenish gray (GLEY1 6/1), damp, very stiff, +HCL	
			43.6			Top of Still Branch Formation at a depth of 42 feet
SS 12	4-4-4	18		45	***SAND, with silt (SP-SM)** - Greenish black (GLEY1 2.5/1), damp, loose, -HCL	
SS	4-5-27	18	36.1		SAA except very dark greenish gray (GLEY1 3/1), dense	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1162

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-1162

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
13A					**CLAY, silty with sand (CL-ML)** - Very dark greenish gray (GLEY1 3/1), damp, hard, -HCL	
UD 2		17	31.1		SAA	Direct Push
				55	**SAND, silty (SM)**	
UD 3		21	26.1			Direct Push
				60	**SAND, clayey (SC)**	
			23.6			Water level depth at beginning of 12/13/2006 = 4.5 feet
SS 14	10-8-14	18		65	**SAND, silty, clayey (SC-SM)** - Greenish gray (GLEY2 5/1), moist, medium dense, fine grained, -HCL	
			18.6			
SS 15	8-5-20	18		70	**SAND, silty (SM)** - Dark greenish gray (GLEY1 4/1), moist, medium dense, fine to medium grained, contains a 2.5" thick clay layer, -HCL	
			13.6			
SS 16	12-18-16	18		75	***SAND, with silty clay (SP-SC)** - Greenish gray (GLEY1 4/1), moist, dense, fine grained, -HCL	
			9.6			Top of Congaree Formation at a depth of 76 feet
SS 17	50/4"	4		80	**SAND, silty (SM)** - Greenish gray (GLEY1 6/1), moist, very dense, fine to medium grained, -HCL	
SS 18	5-20-50/6"	18		85	SAA	
SS 19	12-50/6"	12		90	SAA	
			-6.5			
SS 20	10-11-17	18		95	***CLAY (CH)** - Greenish gray (GLEY 5/1), damp, very stiff, medium plasticity, contains 0.5"-1" thick sand layers, -HCL	
UD 4		23		100	SAA	Direct Push
SS 21	11-14-28			105	SAA	
			-21.5			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1162**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-1162

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 22	33-29-41	18		110	**SAND, clayey, silty (SC-SM)** - Greenish gray (GLEY1 6/1), damp, very dense, fine grained	
SS 23	18-42-50/5"		-31.5	115	SAA	
UD 5		0		120	**NO RECOVERY**	Direct Push
UD 6		3	-41.5	125	**NO RECOVERY**	Direct Push
SS 24	9-14-19	18	-44.0 -44.8 -45.8	130	**SAND, silty, clayey (SC-SM)** - Very dark greenish gray (GLEY1 3/1), moist, dense, fine to medium grained; **CLAY (CH)** - Very dark gray (GLEY1 3/N), damp, hard, high plasticity, -HCL; **LIGNITE**	
SS 25	13-34-39	18		135	**SAND, silty (SM)** - Dark gray (GLEY1 4/N), moist, very dense, fine to medium grained, contains 0.5-2" thick clay layers, -HCL	
SS 26	37-37-31	18		140	SAA except fine to coarse grained	
SS 27	10-18-37	18	-61.5	145	SAA except contains more clay layers	
SS 28	13-21-31	18		150	**SAND, clayey (SC)** - Light bluish gray (GLEY2 8/1), damp, hard, fine to medium grained, high plasticity, -HCL	
SS 29	8-7-12	18		155 160	SAA	Water level depth at end of 12/13/2006 = Ground surface Water level depth at

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1162**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-1162

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
				165		beginning of 12/14/2006 = 4 feet
UD 7		24		170	SAA	Direct Push
				175		
SS 30	12-22-26	18	-93.3	180	**SAND, clayey (SC)** - Light bluish gray (GLEY2 8/1), damp, hard, coarse grained, high plasticity, -HCL	Top of Snapp Formation at a depth of 178.8 feet.
				185		
			-101.5			
SS 31	22-31-50/5"	17		190	**CLAY (CH)** - White (GLEY1 8/N) with red and yellow staining, damp, hard, high plasticity, -HCL	
				195		
			-111.5			
SS 32	12-21-31		-114.5	200	**SAND, clayey (SC)** - White (GLEY1 8/N), damp, very dense, fine to medium grained, high plasticity, -HCL Boring terminated at 200 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1162**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1163

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1147170.6 E 624938.8	12/5/2006	12/6/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	4 Inches	337153	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
86.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 1	2-1-2	8	86.0		*SILT (MH) - Brown (7.5YR 4/4), damp, soft	Top of Alluvium at a depth of 0.0 feet
SS 2	4-5-6	11	82.7		SAA except stiff	
SS 3	4-5-5	8	80.5	5	*CLAY (CH) - Brown (7.5YR 4/4), damp, stiff	
SS 4	WOH/18"		78.0		SILT, with sand (ML) - Greenish gray (GLEY1 5/1), moist, very soft	
SS 5	WOH/18"		75.5	10	CLAY, silty (CL-ML) - Gray (GLEY1), very soft	
SS 6	WOH/18"				SILT, with sand (ML) - Gray (GLEY1 4/1), very soft	
SS 7	2-2-2		69.0	15	SAA except soft	
SS 8	1-1-1	8	65.0	20	SILT, sandy (ML) - Dark greenish gray (GLEY 4/1), moist, very soft	
SS 9	2-4-7	15	59.0	25	CLAY, sandy (CL) - Light yellowish brown (2.5Y 6/3), moist, medium stiff	
SS 10	3-3-3	15	54.0	30	*CLAY (CH) - Pale olive (5Y 6/3) damp, medium stiff	
SS 11	3-3-6	18	49.0	35	CLAY, silty, sandy (CL-ML) - Greenish gray (GLEY1 5/1), damp, stiff, +HCL	Top of Blue Bluff Marl at a depth of 32.0 feet
SS 12	6-6-6	11		40	CLAY, silty, with sand (CL-ML) - Greenish gray (GLEY1 6/1), damp, stiff, +HCL	
SS 13	2-4-6	18	39.0	45	SAA except contains shell fragments	
SS	6-12-19	18			SILT, with sand (ML) - Greenish gray (GLEY1 5/1), damp, hard, +HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1163

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1163

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
			33.5			Top of Still Branch Formation at a depth of 52.5 feet
SS 15	2-2-9	18		55	***SAND (SP)** - Dark gray (GLEY1 4/1) to greenish gray (GLEY1 6/1), wet, medium dense, -HCL	
SS 16	5-7-13	17		60	SAA	
SS 17	3-4-7	15		65	SAA except greenish gray (GLEY1 5/1)	
			19.0			
SS 18	5-5-6	0		70	**NO RECOVERY**	
			13.0			
SS 19	14-40-50/4"	16		75	**SAND, with silt (SP-SM)** - Dark greenish gray (GLEY1 4/1), wet, very dense, -HCL	Top of Congaree Formation at a depth of 73.0 feet Water level depth at beginning of 12/06/2006 = 7.0 feet
			9.0			
SS 20	3-3-6	18		80	**SAND, silty (SM)** - Dark greenish gray (GLEY1 4/1), wet, loose, -HCL	
			4.0			
SS 21	10-15-40	18		85	**SAND, with silt (SP-SM)** - Greenish gray (GLEY1 5/1), moist, very dense, medium to coarse grained, -HCL	
			-1.1			
SS 22	6-8-12	18		90	**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/1), damp, very stiff, low plasticity, -HCL	
			-6.1			
SS 23	6-9-18	18		95	**SILT, with sand (ML)** - Dark greenish gray (GLEY1 4/1), damp, very stiff, -HCL	
			-11.1			
SS 24	12-22-50	18		100	**SAND, silty (SM)** - Grayish green (GLEY1 4/2), wet, very dense, fine to medium grained, -HCL	
			-16.1			
SS 25	50/5"	5		105	**SAND, with silt (SP-SM)** - Light greenish gray (GLEY 8/1), moist, very dense, medium to coarse grained, -HCL	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1163**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1163

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	29-29-40	15		110		SAA	
				-26.1				
SS 27	☒	10-18-18	18		115		**SAND, silty (SM)** - Very dark gray (GLEY1 3/), moist, dense, fine to medium grained, -HCL	
SS 28	☒	10-15-25	18		120		SAA	
SS 29	☒	20-32-50/5"	16		125		SAA except very dark greenish gray (GLEY1 2.5/2), very dense	
SS 30	☒	11-17-34	18		130		SAA	
SS 31	☒	12-40-50/5"	16		135		SAA except light gray (GLEY1 7/)	
				-51.1				
SS 32	☒	50/6"	5		140		**SAND, with silt (SP-SM)** - Greenish gray (GLEY1 5/1), moist, very dense, medium to coarse grained, -HCL	
				-56.1				
SS 33	☒	22-16-50/5"	17		145		**CLAY, with sand (CL)** - Dark gray (GLEY1 4/5), damp, hard, fine to coarse grained SAND, -HCL	
				-61.1				
SS 34	☒	11-16-22	18	-64.1	150		**CLAY, sandy (CL)** - Light gray (GLEY1 7/), damp, hard, -HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1163**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1164

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1146994.8 E 624518.6	1/11/2007	1/17/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	6 Inches	337153	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.1			
SS 1	1-1-2	18			**SAND, with silt (SP-SM)** - Dark yellowish brown (10YR 4/4), dry, very loose, very fine grained, nonplastic, contains organics	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-1-2	18			SAA except strong brown (7.5YR 5/6)	
SS 3	1-2-3	18		5	SAA except yellowish red (5YR 5/6), damp, loose	
SS 4	3-4-5	18			SAA except yellowish red (5YR 4/6), very fine grained	
SS 5	6-6-12	12		10	SAA except medium dense	
SS 6	3-5-13	15	207.1		SAA except red (2.5YR 4/6)	
SS 7	17-23-27	14		15	**SILT, with sand (ML)** - Red (2.5YR 4/6), damp, hard, low plasticity, very fine grained	
			203.1			
SS 8	7-9-11	18		20	***SAND, with clay (SP-SC)** - Red (2.5YR 4/6), damp, medium dense, fine grained, nonplastic	
SS 9	8-18-21	16		25	SAA except strong brown (5YR 5/6), wet, dense, very fine grained	
UD 1		18		30	SAA Pocket Penetrometer: 0.2 TSF, 0.0 TSF, 0.1 TSF	Direct Push Water level depth at end of 1/11/07 = Ground surface
			188.1			
SS 10	2-2-3	18		35	***SAND, clayey (SC)** - Yellow (2.5Y 7/6), moist, medium stiff, medium plasticity, low toughness, -HCL	Water level depth at beginning of 1/12/07 = Borehole dry
UD 2		24		40	SAA Pocket Penetrometer: 1.8 TSF, 1.5 TSF, 1.5 TSF	Direct Push
			178.1			
SS 11	1-4-8	18		45	**CLAY, with sand (CL)** - Brownish yellow (10YR 6/6), stiff, low plasticity, fine to medium grained, -HCL	
			173.1			
SS	9-9-9	12			**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), moist, medium dense, fine grained,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1164

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1164

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
12					nonplastic, -HCL	
			168.1			
SS 13	2-2-3	17		55	**SILT, with sand (ML)** - Yellow (10YR 7/6), moist, medium stiff, low plasticity, fine to medium grained, -HCL	
			163.1			
SS 14	8-12-17	18		60	**SAND, with silt (SP-SM)** - Pale yellow (2.5YR 7/4), wet, medium dense, fine to medium grained (mostly subrounded), nonplastic	
			157.6			
SS 15	50/1"	1		65	**GRAVEL, with clay (GP-GC)** - Yellow (10YR 7/6), wet, very dense, consists of angular cemented siltstone, +HCL	Top of Utley Limestone at a depth of 62.5 feet
			151.6			
SS 16	50/4"	4		70	**CLAY (CL)** - Bluish gray (GLEY2 5/10B), moist, hard, low plasticity, contains angular/cemented GRAVEL, +HCL	Top of Blue Bluff Marl at a depth of 68.5 feet Water level depth at end of 1/12/07 = Ground surface
UD 3		15			SAA except greenish gray (GLEY1 5/10GY) Pocket Penetrometer: 3.5 TSF, 2.5 TSF, >4.5 TSF	Pitcher
SS 17	15-13-50/3"	15		75		Water level depth at beginning of 1/16/07 = 37.0 feet
			143.1			
SS 18	9-9-8	6		80	**SAND, with silt and gravel (SP-SM)** - Brownish yellow (10YR 6/6), wet, medium dense, fine grained, angular GRAVEL, nonplastic, +HCL	
			138.1			
SS 19	15-9-7	18		85	**CLAY (CL)** - Greenish gray (GLEY1 5/5G), moist, stiff, low plasticity, +HCL	
SS 20	14-14-15	18		90	SAA except very stiff	
SS 21	6-9-50/3"	15		95	SAA except hard, nonplastic	Water level depth at end of 1/16/07 = Ground surface
			123.1			
UD 4		9		100	***SILT, with sand (MH)** - Greenish gray (GLEY1 5/5G), moist, hard, high plasticity Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher Water level depth at beginning of 1/17/07 = 42.0 feet
UD 5		11		105	SAA Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1164**

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1164

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 22	14-19-40	18		110	SAA and medium toughness	
SS 23	24-50/2"	8		115	SAA except greenish gray (GLEY1 6/5GY)	
SS 24	13-50/1.5	7.5		120	SAA	
SS 25	19-30-47	18		125	SAA	
SS 26	8-10-12	18		130	SAA except very stiff	
SS 27	7-9-13	18		135	SAA and contains trace of shell hash and fossils	
			83.3			Top of Still Branch Formation at a depth of 136.75 feet
SS 28	4-5-8	5		140	**SAND, with clay (SP-SC)** - Very dark greenish gray (GLEY1 3/10Y), wet, medium dense, fine grained, nonplastic, weak +HCL	
SS 29	8-9-15	10		145	SAA except dark greenish gray (GLEY1 4/5GY), very fine grained, -HCL	
SS 30	19-15-24	18		150	SAA except dense	
			70.1		Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1164**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1166

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1147453.0 E 623961.6	12/15/2006	1/11/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	3 Inches	337153	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
203.4	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			203.4			
SS 1	0-1-1	18			**SAND, silty, clayey (SC-SM)** - Reddish brown (5YR 4/4), damp, very loose, presence of roots	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-3-5	18			SAA except yellowish red, loose	
SS 3	5-6-6	18			SAA except medium dense	
			197.9	5		
SS 4	5-5-6	17			**SAND, silty (SM)** - Yellowish red (5YR 5/8), damp, medium dense, fine grained	
SS 5	4-42-8	14			SAA	
				10		
SS 6	5-7-7	14			SAA	
SS 7	7-13-17	14			SAA except contains some lighter colored material, dense	
				15		
SS 8	12-14-17	16			SAA except red (2.5YR 4/8) and yellowish brown (10YR 5/8)	
				20		
			181.4			
SS 9	7-8-10	16			**SAND, sitly, clayey (SC-SM)** - Light yellowish brown (2.5Y 6/4), damp, medium dense	
				25		
SS 10	6-6-8	18			SAA	
				30		
			171.4			
SS 11	6-5-8	15			**SAND, clayey (SC)** - Light yellowish brown (2.5YR 6/3), damp, medium dense, low plasticity, fine grained	
				35		
SS 12	5-7-9	14			SAA except contains traces of SILT	
				40		
			161.4			
SS 13	6-8-10	9			**SAND, silty (SM)** - Light yellowish brown (10YR 6/4), damp, medium dense, fine to medium grained	
				45		
			156.4			
SS	2-3-4	18			**SAND, silty, clayey (SC-SM)** - Dark yellowish brown (10YR 4/6), damp, loose, fine grained,	Loss of circulation at a depth of 48.5 feet

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1166

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1166

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					-HCL	
SS 15	2-5-10	18		55	SAA except yellowish brown (10YR 5/6), medium dense	
SS 16	4-5-8	17		60	SAA except light olive brown (2.5YR 5/4)	
			141.4			End loggng by S. Woodham. Begin logging by R. Clark. Top of Blue Bluff Marl at a depth of 62.0 feet
SS 17	5-7-19	18		65	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/1), damp, very stiff, low plasticity, +HCL	
SS 18	12-50/6"	12		70	SAA except hard	
			131.4			Water level depth at beginning of 01/11/2007 = 55.0 feet
SS 19	50/2"	1		75	**CLAY, with gravel (CL)** - Greenish gray (GLEY1 6/10GY), moist, hard, low plasticity, contains angular cemented GRAVEL, +HCL	
			126.4			
SS 20	13-21-28	18		80	**SILT (ML)** - Greenish gray (GLEY1 6/10GY), moist, hard, low plasticity, contains traces of angular cemented GRAVEL, +HCL	
SS 21	19-22-50/3"	15		85	SAA except low toughness	
SS 22	14-14-16	18		90	SAA except medium toughness	
SS 23	8-10-12	18		95	SAA except very stiff	
SS 24	11-12-13	18		100	SAA except stiff	
			103.4		Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1166**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1168

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1147688.5 E 623467.8	1/23/2007	1/25/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglund-MACTEC	Dietrich D-50	3 Inches	100	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
202.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			202.2			
SS 1	2-3-2	17	200.7		**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/6), moist, loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	4-3-3	13			**SAND (SP)** - Yellowish brown (10YR 5/6), moist, loose, fine grained	
SS 3	4-3-3	18		5	SAA except pale yellow (2.5Y 8/4) to brownish yellow (10YR 6/6)	
SS 4	6-12-22	18	195.4		SAA except brownish yellow (10YR 6/6), medium dense to dense, fine to medium grained	
SS 5	15-17-21	14.5		10	**SAND, clayey (SC)** - Mottled yellowish brown (10YR 5/8) to red (2.5YR 4/8), moist, dense, fine grained SAA	
SS 6	12-15-22	12.5			SAA	
SS 7	15-17-21	15.5		15	SAA except yellowish red (5YR 5/8)	
			185.2			Water level depth at end of 1/23/07 = Ground surface
SS 8	11-12-12	14		20	**SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/8), damp, medium dense, medium grained, nonplastic	End logging by B. Sharp. Begin logging by D. Brooks.
			180.2			
SS 9	11-12-17	15		25	**SAND, clayey (SC)** - Reddish yellow (7.5YR 6/8), damp, medium dense, fine to medium grained, low plasticity	
SS 10	6-6-8	15		30	SAA except strong brown (7.5YR 5/8)	
			170.2			
SS 11	5-7-7	13		35	**SAND, with silt (SP-SM)** - Strong brown (7.5YR 5/6), wet, medium dense, fine to medium grained	
SS 12	7-10-12	15		40	SAA	
SS 13	10-13-18	16		45	SAA except reddish yellow (7.5YR 6/8), dense, medium to coarse grained	
SS	8-11-12	13			SAA except strong brown (7.5YR 5/6), medium dense, fine grained, nonplastic, -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1168

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1168

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	9-11-11	14		55	SAA except brown (7.5YR 4/4), damp	
			145.2			Top of Blue Bluff Marl at a depth of 57.0 feet
SS 16	11-12-19	18		60	**SILT (ML)** - Greenish gray (GLEY1 5/10GY), damp, hard, nonplastic, +HCL	
SS 17	16-26-50/3"	15		65	SAA	
			135.2			
SS 18	50/2"	0		70	**NO RECOVERY**	
			131.2			
SS 19	17-24-34	18		75	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, low plasticity, +HCL	
SS 20	50/3"	3		80	SAA	
SS 21	16-20-50/5"	17		85	SAA	
SS 22	11-10-16	18		90	SAA	Water level depth at end of 1/24/07 = Ground surface
SS 23	22-33-29	18		95	SAA except greenish gray (GLEY1 6/10Y)	Water level depth at beginning of 1/25/07 = 39.0 feet
SS 24	16-17-16	18	102.2	100	SAA	
					Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1168**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1170

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1147423.9 E 622953.7	1/17/2007	1/19/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglund-MACTEC	Dietrich D-50	3 Inches	100	98.9

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
223.3	∇ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			223.3			
SS 1	2-1-2	14			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/4 to 5/6), damp, very loose, fine to medium grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-1-2	16			SAA except yellowish brown (10YR 5/8)	
SS 3	1-2-2	18			SAA	
			217.8	5		
SS 4	3-3-4	18			**SAND (SP)** - Brownish yellow (10YR 6/6), wet, loose, medium grained, sub-rounded	
SS 5	5-5-8	18			SAA except medium to coarse grained	
				10		
SS 6	6-5-7	18	211.8		SAA except reddish yellow (7.5YR 7/6)	
					SAND, clayey (SC) - Red (2.5YR 4/8), damp, medium dense, medium grained, rounded	
SS 7	7-9-14	18			SAA except red (2.5YR 5/8)	
				15		
SS 8	13-13-17	18			SAA except yellowish red (5YR 5/8), fine to medium grained	
				20		
SS 9	13-17-24	18			SAA	
				25		
			196.3			Water level depth at end of 1/17/07 = Ground surface End loggng by M. Herrera. Begin logging by R. Clark. Water level depth at beginning of 1/18/07 = Borehole dry
SS 10	10-14-24	18	193.8 / 193.5	30	**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 7/8), moist, dense, medium to coarse grained, nonplastic	
					CLAY, with sand (CH) - Reddish yellow (7.5YR 7/6), moist, very stiff, high plasticity	
SS 11	8-10-14	18			**SAND, with clay (SP-SC)** - Reddish yellow (7.5YR 7/8), moist, dense, fine grained, nonplastic	
				35	SAA except yellow (10YR 7/8), medium dense, very fine grained	
SS 12	10-8-10	17			SAA except yellow (10YR 9/6), and -HCL	
				40		
			181.3			
SS 13	5-5-9	18			**CLAY, with sand (CL)** - Brownish yellow (10YR 6/6), moist, stiff, low plasticity, very fine grained SAND, -HCL	
				45		
SS	5-5-7	18			SAA except yellow (10YR 7/6) and low toughness	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1170

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1170

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)
14			171.3		
SS 15	8-6-9	12	166.3	55	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), damp, medium dense, medium to coarse grained, -HCL
SS 16	6-6-11	13	161.3	60	**CLAY, sandy (CL)** - Light red (10R 6/6) and very pale brown (10YR 7/4), moist, very stiff, medium plasticity, medium grained SAND, -HCL
SS 17	3-4-5	2	156.3	65	**SAND, clayey (SC)** - Pale yellow (2.5Y 7/3), moist, loose, fine to medium grained, medium plasticity CLAY, -HCL
SS 18	12-12-14	14	151.3	70	**SAND, silty (SM)** - Yellow (10YR 7/6), moist, medium dense, fine grained, contains trace black sand, -HCL
SS 19	10-13-17	9	146.3	75	**SAND, with silt (SP-SM)** - Light yellowish brown (10YR 6/4), wet, medium dense, coarse grained, sub-rounded, -HCL
SS 20	12-12-14	13	141.3	80	**SAND, clayey (SC)** - Yellow (10YR 7/6), moist, medium dense, medium grained, -HCL
SS 21	6-6-9	18	136.3	85	**SILT (ML)** - Dark yellowish brown (10YR 4/6), moist, stiff, low plasticity, contains some fine grained SAND, -HCL
SS 22	13-15-15	13	131.3	90	**SAND, silty (SM)** - Brown (7.5YR 5/4), moist, medium dense, fine grained, rounded, -HCL
SS 23	4-6-10	18	126.3	95	**CLAY, silty with sand (CL-ML)** - Yellow (10YR 7/6) and pale yellow (2.5Y 7/4), damp, very stiff, medium plasticity, contains fine grained SAND, -HCL
SS 24	50/.5"	0	124.4		**NO RECOVERY** Boring terminated at 98.92 feet

NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING

Water level depth at beginning of 1/19/07 = 21.5 feet
End loggng by R. Clark.
Begin logging by M. Herrera.

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1170**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1172

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Brooks	N 1146983.4 E 622538.7	1/25/2007	1/26/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglund-MACTEC	Dietrich D-50	3 Inches	100	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
249.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			249.5			
SS 1	1-1-2	12			**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), damp, very loose, fine grained, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	3-3-6	12			SAA except reddish yellow (7.5YR 6/8), loose	
SS 3	2-2-2	18		5	SAA	
SS 4	3-4-5	13			SAA except medium to coarse grained	
SS 5	4-5-7	15		10	SAA except strong brown (7.5YR 5/8), medium dense, medium grained	
SS 6	6-11-15	18	236.5		SAA	
SS 7	6-20-29	18		15	**SAND (SP)** Reddish yellow (7.5YR 6/8), damp, dense, coarse grained, nonplastic	
			232.5			
SS 8	7-9-12	12		20	**SAND, with clay (SP-SC)** - Yellowish red (5YR 5/8), damp, medium dense, medium grained, low plasticity	
			227.5			
SS 9	6-7-9	17		25	**SAND, with silt (SP-SM)** - Red (2.5YR 5/8), damp, medium dense, fine to medium grained, nonplastic	
SS 10	6-9-12	16		30	SAA	
SS 11	8-9-9	14		35	SAA except reddish yellow (7.5YR 6/8), fine grained, -HCL	
SS 12	5-5-6	13		40	SAA except yellowish red (5YR 5/8)	
			207.5			
SS 13	7-7-10	16		45	**SAND, with clay (SP-SC)** Yellowish red (5YR 5/8), damp, medium dense, fine to medium grained, low plasticity, -HCL	
SS	7-7-10	15			SAA except brownish yellow (10YR 6/8)	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1172

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-1172

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	4-5-6	18		55	SAA except medium to coarse grained	
SS 16	4-4-9	18		60	SAA except yellow (10YR 7/6), fine grained	
SS 17	6-5-7	18		65	SAA	
			183.0			
SS 18	3-3-4	18		70	**CLAY, sandy (CL)** - Yellow (10YR 7/6), damp, stiff, low plasticity, fine grained SAND, -HCL	
SS 19	3-4-4	18		75	SAA	
			172.5			
SS 20	3-3-3	18		80	**CLAY, silty, sandy with gravel (CL-ML)** - Yellowish brown (10YR 5/8), damp, medium stiff, low plasticity, GRAVEL consists of shell hash, -HCL	
			167.5			
SS 21	3-4-3	18		85	**CLAY, sandy (CL)** - Reddish yellow (7.5YR 6/6), damp, medium stiff, low plasticity, fine to medium grained SAND, -HCL	
			162.5			
SS 22	4-3-5	0		90	**NO RECOVERY**	Water level depth at end of 1/25/07 = Ground surface
			157.5			
SS 23	5-5-6	16		95	SAA except stiff	Water level depth at beginning of 1/26/07 = 68.75 feet
SS 24	5-6-7	18			SAA	
			149.5	100	Boring terminated at 100 feet	

SITE	Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-1172

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1174

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Brooks/C. Gandy	N 1146476.1 E 622228.1	1/26/2007	2/9/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglund-MACTEC	Dietrich D-50	3 Inches	100	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
225.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			225.8			
SS 1	5-6-8	18			**SAND, with silty clay (SP-SC)** - Yellowish red (5YR 5/8), damp, medium dense, fine to medium grained, low plasticity	Top of Barnwell Group at a depth of 0.0 feet
SS 2	11-16-27	16			SAA except reddish yellow (7.5YR 6/8), dense, medium to coarse grained	
			222.6		**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), damp, dense, medium to coarse grained, nonplastic	
SS 3	12-15-18	17	220.3	5	**SAND, with silty clay (SP-SC)** - Brownish yellow (10YR 6/8), damp, dense, very fine to fine grained, low plasticity	
SS 4	11-13-17	18	217.8		**CLAY, sandy (CL)** - Brownish yellow (10YR 6/6), damp, very stiff, medium plasticity, fine grained SAND, -HCL	
SS 5	5-7-9	18	215.3	10	**CLAY (CL)** - Yellow (10YR 7/6), damp, stiff, medium plasticity, -HCL	
SS 6	4-5-8	17	212.8		**CLAY, sandy (CL)** - Brownish yellow (10YR 6/6), damp, very stiff, low plasticity, fine to medium grained SAND, -HCL	
SS 7	5-5-8	18	208.8	15	**SAND, with silty clay (SP-SC)** - Pale yellow (2.5Y 7/4), damp, loose, very fine to fine grained, low plasticity, -HCL	Losing circulation from depths of 20.0 to 25.0 feet
SS 8	3-4-5	15	203.8	20	**CLAY, sandy (CL)** - Pale yellow (2.5Y 7/4), damp, soft, low plasticity, fine grained SAND, +HCL	
SS 9	3-2-1	17	198.8	25	**CLAY, silty, sandy with gravel (CL-ML)** - Pale yellow (2.5Y 8/3), damp, hard, fine to medium grained SAND, contains GRAVEL sized shell hash, +HCL	
SS 10	50/4"	4		30	SAA	
SS 11	13-21-16	18		35	SAA	
SS 12	17-23-31	18		40		Water level depth at end of 1/26/07 = Ground surface End logging by D. Brooks.
			183.8		**CLAY, with gravel (CL)** - Very pale brown (10YR 8/4), damp, hard, low plasticity, GRAVEL consists of shell fragments from 0.25" to 0.5" in diameter, +HCL	Begin logging by C. Gandy.
SS 13	12-14-18	18		45	**CLAY, silty, gravelly with sand (CL-ML)** - Very pale brown (10YR 7/4), damp, hard, low	Water level depth at beginning of 2/8/07 = Borehole dry Installed 4" steel casing to a depth of 43.0 feet
			178.8			
SS	12-14-21	16				

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1174

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1174

▲ N-VALUE (SPT)
O WATER CONTENT %
+ ATT. LIMITS %
☐ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			173.8		plasticity, GRAVEL consists of shell fragments from 0.1" to 1" in diameter, +HCL	Water level depth at beginning of 2/9/07 = Borehole dry
SS 15	50/3"	3	168.8	55	**GRAVEL, with silt and sand (GP-GM)** - Very pale brown (10YR 8/4), wet, hard, nonplastic, GRAVEL consists of shell fragments from 0.1" to 1" in diameter, +HCL	
SS 16	12-17-23	18	163.8	60	**CLAY, silty, gravelly with sand (CL-ML)** - Very plae brown (10YR 8/3), damp, hard, low plasticity, GRAVEL consists of shell fragments from 0.1" to 1" in diameter, +HCL	
SS 17	9-22-20	18	158.8	65	**CLAY, sandy with gravel (CL)** - Very pale brown (10YR 8/4), moist, hard, medium plasticity, GRAVEL consists of shell fragments from 0.25" to 1" in diameter, +HCL	
SS 18	50/4"	3	153.8	70	**GRAVEL, with clay and sand (GP-GC)** - Very pale brown (7.5YR 8/2), moist to wet, hard, nonplastic, GRAVEL consists of shell fragments 0.5" to 1.25" in diameter, +HCL	
SS 19	28-13-13	17	148.8	75	**SAND, clayey with gravel (SC)** - Very pale brown (10YR 7/3), moist, medium dense, low plasticity, GRAVEL consists of shell fragments, 0.25" to 1" in diameter, +HCL	
SS 20	9-12-16	18	143.8	80	**CLAY, gravelly with sand (CL)** - Very pale brown (10YR 8/4), moist, very stiff, medium plasticity, GRAVEL consists of shell fragments 0.1" to 1" in diameter, +HCL	
SS 21	21-20-15	18	138.8	85	**CLAY, silty (CL-ML)** - Very pale brown (10YR 7/4), damp, hard, low plasticity, contains shell hash, +HCL	
SS 22	15-11-20		133.8	90	**CLAY, sandy with gravel (CL)** - Very pale brown (10YR 7/4), damp, hard, low plasticity, GRAVEL consists of shell fragments 0.1" to 0.5" in diameter, +HCL	
SS 23	40-50/4"	10	128.8	95	**CLAY, silty (CL-ML)** - Brownish yellow (10YR 6/6) to greenish gray (GLEY1 10Y), damp, hard, low plasticity, contains shell hash and sub-parallel laminations, +HCL	
SS 24	10-12-28	18	125.8	100	**SAND, silty (SM)** - Light yellowish brown (10YR 6/4), moist, dense, nonplastic, contains shell hash and sub-parallel laminations, +HCL Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1174**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	B-1176

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1145876.3 E 622195.2	1/3/2007	1/5/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglond-MACTEC	Dietrich D-50	4 Inches	100	35.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.5			
SS 1	5-7-9	17			**SAND, with silt (SP-SM)** - Reddish brown (5YR 4/4), dry, medium dense, very fine grained, nonplastic, contains organics	Top of Barnwell Group at a depth of 0.0 feet
SS 2	8-7-6	17			SAA except no organics	
SS 3	3-4-4	18		5	SAA except yellowish red (5YR 5/6), loose	
SS 4	2-2-3	18			SAA except reddish brown (5YR 4/4), wet, very fine to fine grained	
SS 5	5-5-8	18		10	SAA except yellowish red (5YR 5/6) and strong brown (7.5YR 5/8), moist, medium dense, fine grained, contains trace coarse grained, subrounded quartz fragments	
SS 6	6-8-11	18			SAA except reddish yellow (7.5YR 6/8), trace coarse SAND is subangular	
SS 7	4-4-8	18	207.8	15	SAA **SILT (ML)** - Yellow (10YR 7/6) and reddish yellow (7.5YR 6/8), moist, stiff, low plasticity, low dry strength, low toughness	
SS 8	4-7-15	17	202.0	20	SAA except pale yellow (5Y 7/4), contains iron staining	
			199.5		**CLAY, with gravel (CL)** - Pale yellow (5Y 7/3), moist, very stiff, low plasticity, contains shell fragments (white (2.5Y 8/1), angular), +HCL	
SS 9	16-14-17	18		25	**SAND, with clay (SP-SC)** - Pale yellow (5Y 8/4), moist, dense, fine grained, nonplastic, contains shell fragments and iron staining, +HCL	
SS 10	15-8-13	18		30	SAA except pale yellow (5Y 8/2), medium dense, very fine to fine grained	
			189.5			
SS 11	23-33-50/4"	16	186.7	35	**CLAY, silty, sandy (CL-ML)** - Pale yellow (5Y 8/4), moist, hard, low plasticity, low dry strength, low toughness, very fine to fine grained SAND, contains shell fragments and hash as well as iron staining, +HCL	Water level depth at end of 1/4/07 = 2.2 feet
					Boring terminated at 34.83 feet due to tools lost in the borehole. Refer to boring log B-1176A for continuation	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1176

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1176A

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1145878.8 E 622196.8	1/5/2007	1/12/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglund-MACTEC	Dietrich D-50	4 Inches	100	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					221.5				
						5, 10, 15, 20, 25, 30		**SEE B-1176 FOR LITHOLOGY TO 35 FEET**	
					186.5	35			Top of Utley Limestone at a depth of 35.0 feet
SS 1		▲	50/5"	5		40		**GRAVEL, silty, clayey, with sand (GC-GM)** - Very pale brown (10YR 8/4), wet, very dense, contains 1/8" to 1/4" GRAVEL shell fragments and shell hash, +HCL	
SS 2		▲	16-15-27	14		45		SAA except dense, contains cemented zones consisting of shells and quartz SAND in a corbonate mud matrix, some zones of SAND, clayey at top of sample	
SS		▲	13-13-22	18				SAA	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1176A

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1176A

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
3				169.5			
SS 4	X	18-11-17			55	**SILT, with sand (ML)** - White (7.5YR 8/1), moist, very stiff, low plasticity, fine grained SAND, contains crushed shell fragments, +HCL	
				165.0			
SS 5	X	26-25-50/5"	17		60	**SAND, silty (SM)** - White (7.5YR 8/1), moist, very dense, fine to coarse grained, contains shell hash and cemented zones, +HCL	Water level depth at end of 1/11/07 = Ground surface End logging by M. Cooke. Begin logging by R. Clark.
				159.5			
SS 6	X	14-14-40	15		65	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/2), damp, very dense, fine to medium grained, low plasticity, contains shell hash and cemented zones, +HCL	
				154.5			
SS 7	X	17-22-50/2"	13		70	**SAND, silty (SM)** - Pale yellow (2.5Y 8/2), damp, very dense, fine to medium grained, low plasticity, contains shell hash, +HCL	Drilled through 2' void at 71.0 feet Top of Blue Bluff Marl at a depth of 72.5 feet
				149.0			
SS 8	X	14-16-28	18		75	**SILT (ML)** - Greenish gray (GLEY2 5/1), damp, hard, nonplastic, +HCL	
SS 9	X	13-17-28	18		80	SAA	
SS 10	X	24-27-49	18		85	SAA	
SS 11	X	13-17-36	18		90	SAA	
SS 12	X	36-38-50/4"	16		95	SAA	
SS 13	X	28-34-49	18	121.5	100	SAA	
						Boring terminated at 100 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1176A**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1185

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1144716.6 E 622232.2	12/19/2006	12/21/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	CME-850	3 Inches	165952	148.9

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
226.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			226.8			
SS 1	2-4-5	14			**SAND, with silt (SP-SM)**- Brown (7.5YR 4/3), damp, loose, fine grained, sub rounded	Top of Barnwell Group at a depth of 0.0 feet
SS 2	3-2-3	18			SAA except brown (10YR 4/3)	
			223.3			
SS 3	7-6-10	16			**SAND, silty (SM)** - Reddish yellow (5YR 6/8), damp, medium dense, fine grained, rounded	
			221.3	5		
SS 4	11-11-11	15			**SAND, clayey (SC)** - Yellowish red (5YR 5/8) and yellow (10YR 7/8), damp, medium dense, medium grained, rounded	
SS 5	8-12-14	16			SAA	
				10		
SS 6	8-10-12	14			SAA	
			213.8			
SS 7	5-7-10	16			**CLAY, sandy (CL)** - Yellowish red (5YR 5/8) and brownish yellow (10YR 6/8), very stiff, low plasticity	
				15		
			209.8			
SS 8	2-4-8	17			**CLAY (CL)** - Yellowish red (5YR 5/8) and yellow (2.5Y 7/6), damp, stiff, medium plasticity	
				20		
SS 9	2-3-4	18			SAA except pale yellow (5Y 7/3) and yellow (10YR 7/8) with traces of yellowish red (5YR 5/8), medium stiff	
				25		
			199.8			
SS 10	2-3-3	18			**CLAY, sandy (CL)** - Brownish yellow (10YR 6/6), pale yellow (5Y 8/3), and yellowish red (5YR 5/8), damp, medium stiff, medium plasticity	
				30		
			194.8			
SS 11	3-4-5	16			**SAND, clayey (SC)** - Yellow (10YR 7/8), damp, loose, medium grained, rounded	
				35		
SS 12	2-2-1	10			SAA except pale yellow (5Y 8/3), very loose	
				40		
SS 13	3-3-5	14			SAA except yellow (10YR 7/6), wet, loose, sub rounded	
				45		
SS	4-3-5	16			SAA except pale yellow (2.5Y 7/3), damp, loose, -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1185

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1185

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	50/5"	1.5	173.3	55	**CLAY, gravelly (CL)** - Pale yellow (2.5Y 8/4), wet, hard, gravel consists of shell fragments, +HCL	Top of Utley Limestone at a depth of 53.5 feet
SS 16	33-50/4"	6		60	SAA	
			164.8			Loss of circulation at a depth of 62.0 feet
SS 17	8-40-30	11		65	**SAND, clayey with gravel (SC)** - Pale yellow (5Y 8/3), damp, very dense, fine grained, +HCL	
SS 18	40-50/4"	10		70	SAA except (2.5Y 8/4)	
			154.8			Water level depth at end of 12/19/2006 = Ground surface
SS 19	10-12-16	18		75	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/2), wet, medium dense, fine grained, rounded, -HCL	Water level depth at beginning of 12/20/2006 = 26 feet
SS 20	50/2"	1.5		80	SAA except pale yellow (2.5Y 7/3), very dense	
			143.8			
SS 21	8-15-20	18		85	**CLAY, with gravel (CL)** - Greenish gray (GLEY1 5/1), dry, hard, +HCL	Top of Blue Bluff Marl at a depth of 83.0 feet
SS 22	15-18-38	18		90	SAA	
			134.8			
SS 23	13-50/5"	11		95	**CLAY (CL)** - Greenish gray (GLEY1 5/1), dry, hard, low plasticity, +HCL	
SS 24	37-18-39	18		100	SAA	Water level depth at end of 12/20/2006 = 75 feet
SS 25	50/5"	5		105	SAA	Installed 4" steel casing to a depth of

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1185**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1185

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		8-15-50/5"	17		110		SAA except greenish grey (GLEY1 5/1), damp, medium plasticity	105.0 feet Water level depth at beginning of 12/21/2006 = 63 feet
SS 27		33-50/5"	11		115		SAA	
SS 28		14-16-30	18		120		SAA	
SS 29		13-18-34	18		125		SAA except dry, contains shell fragments	
SS 30		10-26-30	18		130		SAA	
SS 31		8-8-22	18		135		SAA except damp, very stiff	
SS 32		12-16-50/6"	18		140		SAA except (GLEY1 7/1)	
				83.8				
SS 33		11-50/6"	12		145		**SAND, clayey (SC)** - Very dark greenish gray (GLEY1 3/1), damp, very dense, medium grained, rounded, -HCL	Top of Still Branch Formation at a depth of 143 feet
SS 34		50/5"	1	77.9			SAA Boring terminated at148.92 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1185**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-1186

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Mabie	N 1144711.9 E 618818.9	1/24/2007	1/26/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	178.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
277.5	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			277.5			
SS 1	2-1-1	18			**SAND, with silt (SP-SM)** Brownish yellow (10YR 6/6), damp, very loose, fine grained, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-1-1	18			SAA	
SS 3	2-2-2	14			SAA except fine to medium grained	
			272.0	5		
SS 4	5-7-13	17			**SAND, clayey (SC)** - Reddish yellow (7.5YR 6/8), moist, medium dense, fine grained, nonplastic to low plasticity, -HCL	
SS 5	10-14-17	18		10	SAA except red (2.5YR 5/8), dense, fine to medium grained	Installed 3" steel casing to a depth of 10.0 feet
SS 6	6-10-13	14			SAA red (10R 4/8), medium dense, low plasticity, fine grained	Water level depth at end of 1/24/07 = 0.81 feet
SS 7	6-7-10	12		15	SAA except dark red (10R 3/6)	Water level depth at beginning of 1/25/07 = 0.83 feet
			260.5			
SS 8	5-7-8	15		20	**CLAY, silty, sandy (CL-ML)** - Weak red (10R 5/4), moist, stiff, low plasticity, fine grained SAND, -HCL	
			255.5			
SS 9	5-6-7	12		25	**CLAY, silty with sand (CL-ML)** - Red (10R 5/6), moist, stiff, low plasticity, fine grained SAND, -HCL	
			250.5			
SS 10	5-6-7	12		30	**CLAY, silty, sandy (CL-ML)** - Red (10R 5/6), moist, stiff, low plasticity, fine grained SAND, -HCL	
SS 11	5-6-7	12		35	SAA except reddish yellow (7.5YR 6/6)	
			240.5			
SS 12	5-9-7	12		40	**SAND, silty, clayey (SC-SM)** - Yellowish red (5YR 5/6), moist, medium dense, fine grained, nonplastic to low plasticity, -HCL	
			235.5			
SS 13	5-7-8	9		45	**SAND, silty (SM)** - Yellowish red (5YR 5/6), moist, medium dense, fine grained, nonplastic, -HCL	
SS	6-10-11	8			SAA except reddish yellow (7.5YR 6/8), wet	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1186

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-1186

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			225.5			
SS 15	7-9-15	9		55	**SAND, with silt (SP-SM)** - Red (2.5YR 5/6), wet, medium dense, fine to medium grained, nonplastic, -HCL	
SS 16	9-10-14	10		60	SAA except red (10R 4/6), fine grained	
SS 17	11-16-15	9	210.5	65	SAA except strong brown (7.5YR 5/8), dense, fine to medium grained	
SS 18	3-4-4	15	205.5	70	**SAND, silty, clayey (SC-SM)** - Reddish yellow (7.5YR 6/8), wet, loose, fine grained, low plasticity, -HCL	
SS 19	3-3-5	18	201.0	75	**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 8/5GY), wet, medium stiff, low plasticity, -HCL	
SS 20	6-20-32	18	195.5	80	**CLAY, silty, sandy (CL-ML)** - Light greenish gray (GLEY1 8/5GY), wet, hard, low plasticity, fine grained SAND, contains shell fragments, +HCL	
SS 21	13-6-7	18	190.5	85	**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 8/5GY), moist, stiff, low plasticity, contains shell fragments, +HCL	
SS 22	1-3-4	18	185.5	90	**CLAY (CL)** - Light greenish gray (GLEY1 8/10Y), wet, medium stiff, low plasticity, contains shell hash, +HCL	
SS 23	8-12-10	18	180.5	95	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/10GY), moist, very stiff, low plasticity, contains shell fragments, +HCL	
SS 24	8-10-19	18		100	**CLAY (CL)** - Greenigh gray (GLEY1 5/5G), moist, very stiff, low plasticity, +HCL	
SS 25	7-13-31	18	170.5	105	SAA except olive gray (5Y 5/2), hard, low to medium plasticity, contains shell fragments	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1186**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-1186

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	10-50/5"	10	165.5	110		**CLAY, silty, sandy (CL-ML)** - Light gray (2.5Y 7/2), moist, hard, low plasticity, contains shell hash, +HCL	
SS 27	☒	6-7-9	18	160.5	115		**CLAY, silty (CL-ML)** - Light yellowish brown (2.5Y 6/3), moist, very stiff, low plasticity, contains shell fragments, +HCL	
SS 28	☒	17-14-15	18	155.5	120		**CLAY, silty, sandy (CL-ML)** - Pale yellow (2.5Y 7/3), moist, very stiff, low plasticity, contains shell hash, +HCL	
SS 29	☒	5-6-14	18	150.5	125		**CLAY, silty with sand (CL-ML)** - Pale yellow (2.5Y 7/3), moist, low plasticity, contains shell fragments, +HCL	
SS 30	☒	6-7-11	18	145.5	130		**SAND, silty (SM)** - Pale yellow (2.5Y 7/3), wet, medium dense, fine grained, nonplastic to low plasticity, contains shell fragments, +HCL	
SS 31	☒	23-16-15	18		135		**CLAY, silty, sandy (CL-ML)** - Pale yellow (2.5Y 7/3), wet, hard, low plasticity, contains shell hash, +HCL	
SS 32	☒	11-21-14	18	135.5	140		SAA	
SS 33	☒	50/5"	4	130.5	145		**SAND, with silt (SP-SM)** - Greenish gray (GLEY1 6/10GY), moist, very dense, fine grained, nonplastic, contains shell fragments, +HCL	
SS 34	☒	9-12-11	18	125.5	150		**CLAY (CL)** Greenish gray (GLEY1 5/10GY), moist, very stiff, low to medium plasticity, contains shell fragments, +HCL	Water level depth at end of 1/25/07 = 48.65 feet
SS 35	☒	7-19-18	18	120.5	155		**CLAY, silty, sandy (CL-ML)** - Greenish gray (GLEY1 6/10GY), wet, hard, low plasticity, contains shell fragments, +HCL	Water level depth at beginning of 1/26/07 = 51.62 feet
SS 36	☒	9-14-6	18	115.5	160		**SAND, with silty clay (SP-SC)** - Light greenish gray (GLEY1 7/1GY), wet, medium dense, fine to medium grained, nonplastic to low plasticity, contains shell hash, +HCL	
SS	☒	10-11-17	18				**CLAY, silty with sand (CL-ML)** - Greenish	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1186**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-1186

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
37					110.5	165		gray (GLEY1 5/5G), wet, very stiff, contains some shell fragments, low plasticity, +HCL	
SS 38		▲	19-39-29	10	105.5	170		**SAND, silty, clayey (SC-SM)** - Pale yellow (2.5Y 8/2), wet, very dense, fine to medium grained, nonplastic to low plasticity, +HCL	
SS 39			▲ 50/1"	0	100.5	175		**NO RECOVERY**	
SS 40			▲ 50/3"	2	98.8			**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 7/5GY), wet, hard, nonplastic to low plasticity, contains shell fragments, hash, and cemented sand grains, +HCL Boring terminated at 178.75 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1186**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1187

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1144710.2 E 619259.6	1/29/2007	1/30/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
277.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			277.7			
SS 1	2-2-2	13	276.2		**SAND, with silt (SP-SM)** - Pale brown (10YR 1/3), dry, very loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-2-2	18			**SAND, clayey (CL)** - Strong brown (7.5YR 5/6), damp, very loose, fine grained, low plasticity	
SS 3	2-2-6	10		5	SAA except yellowish red (5YR 5/8), loose	
SS 4	12-19-26	18			SAA except red (2.5YR 4/8), dense	
SS 5	9-13-16	14		10	SAA exept medium dense	
SS 6	6-10-15	15	264.7		SAA	Installed 4" steel casing to a depth of 10.0 feet
SS 7	7-10-14	14		15	**SAND, with clay (SP-SC)** - Red (2.5YR 5/8), damp, medium dense, fine grained, nonplastic to low plasticity	
SS 8	5-7-8	14	255.7	20	SAA except wet	
SS 9	5-7-7	15	250.7	25	**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 7/8), wet, medium dense, fine grained	
SS 10	5-7-7	17	245.7	30	**SAND, with clay (SP-SC)** - Yellowish red (5YR 5/8), wet, medium dense, fine grained	
SS 11	5-6-6	14		35	**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 7/8), wet, medium dense, fine grained	
SS 12	5-6-6	16		40	SAA except dark red (10R 3/6)	
SS 13	6-9-10	14		45	SAA except red (10R 4/8)	
SS	4-6-8	13			SAA	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1187

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 3	HOLE NO. B-1187

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								
SS 15		7-9-11	10		55		SAA except red (10R 5/8), fine to medium grained, -HCL	
				220.7				
SS 16		9-12-13	17		60		**SAND (SP)** - Yellow (10YR 7/8), wet, medium dense, fine grained, -HCL	
SS 17		6-10-12	13		65		SAA except yellow (10YR 7/6)	
				210.7				
SS 18		3-4-7	10		70		**CLAY (CL)** - Yellow (10YR 7/6), wet, stiff, contains 2" fine to medium grained SAND lense at bottom of spoon, -HCL	
SS 19		1-2-3	18		75		SAA except very pale brown (10YR 8/4), medium stiff, no lense	
				200.7				
SS 20		1-3-3	16		80		**SAND, with clay (SP-SC)** - Very pale brown (10YR 8/3), wet, loose, fine grained, nonplastic to low plasticity, -HCL	
				196.2				
SS 21		3-4-5	18		85		**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 8/10Y), wet, stiff, medium plasticity, trace fine SAND, +HCL	
SS 22		8-12-50/4"	16		90		SAA except hard, medium to high plasticity, contains shell fragments <1/8"	
				185.7				
SS 23		3-5-13	18		95		**SAND, with silt (SP-SM)** - Light greenish gray (GLEY1 8/10Y), wet, medium dense, very fine grained, nonplastic, +HCL	
				180.7				
SS 24		8-11-12	18		100		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/10GY), wet, very stiff, medium to high plasticity, trace very fine SAND, +HCL	
				175.7				
SS 25		19-50/2"	8		105		**CLAY, with sand (CH)** - Pale yellow (2.5Y 8/1), wet, hard, medium to high plasticity, very fine SAND, +HCL	
				170.7				

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-1187

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1187

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	21-50/1"	4		110	**SAND, silty (SM)** - Olive yellow (2.5Y 6/6), wet, very dense, fine to medium grained, contains shell fragments, +HCL	Water level depth at end of 1/29/07 = Top of Casing
SS 27	12-9-8	15	160.7	115	SAA except medium dense, fine grained	Water level depth at beginning of 1/30/07 = 55.6 feet
SS 28	25-15-31	18	155.7	120	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/4), wet, dense, fine grained, contains shell fragments <1/8" in diameter, +HCL	
SS 29	6-13-17	15	150.7	125	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 7/4), wet, dense, fine grained, contains shell fragments <1/16" in diameter, +HCL	
SS 30	8-23-35	13	145.7	130	**SAND (SP)** - Pale yellow (2.5Y 8/2), wet, very dense, fine grained, contains trace shell fragments <1/16" in diameter, +HCL	
SS 31	15-18-17	16	140.7	135	**SAND, silty (SM)** - Pale yellow (2.5Y 8/3), dense, fine grained, contains shell fragments < 1/2" in diameter and 2" shell hash lens at bottom, +HCL	
SS 32	15-13-9	16		140	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/4), wet, medium dense, fine grained, nonplastic to low plasticity, contains shell fragments <1/4" in diameter, +HCL	
SS 33	5-7-7	10	130.7	145	SAA except fine to medium grained, low plasticity, no shells	
SS 34	7-12-25	18	127.7	150	**SAND, clayey (SC)** - Pale yellow (2.5Y 7/4), wet, dense, fine to medium grained, low to medium plasticity, contains trace shell fragments, +HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	B-1187

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1189

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1144459.7 E 618997.5	1/30/2007	1/31/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
280.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			280.0			
SS 1	2-2-2	13			*SAND, with silt (SP-SM) - Yellowish brown (10YR 5/8), damp, very loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-1-2	16			SAA except brownish yellow (10YR 6/8)	
SS 3	1-2-2	12			SAA	
			274.0	5		
SS 4	2-3-3	14			*SAND (SP) - Yellow (10YR 7/6), loose, fine to medium grained	
SS 5	2-4-8	8			SAA except yellowish brown (10YR 5/8), medium dense, fine grained	
			269.5	10		
SS 6	7-10-11	10			*SAND, clayey (SC) - Red (2.5YR 5/8), moist, medium dense, fine grained	
SS 7	8-12-18	10			SAA except red (2.5YR 4/8)	
				15		Installed 3" steel casing to a depth of 15.0 feet
SS 8	6-8-13	14			SAA	
				20		
SS 9	5-7-9	15			SAA	
				25		
			253.0			
SS 10	4-7-9	13			*SAND, silty (SM) - Dark red (2.5YR 3/6), moist, medium dense, fine grained	
				30		
			248.0			
SS 11	4-6-7	9			SAND, with clay (SP-SC) - Red (10R 4/8), moist, medium dense, fine grained, nonplastic to low plasticity	
				35		
			243.0			
SS 12	5-7-8	12			*SAND, clayey (SC) - Reddish yellow (7.5YR 6/8), moist, medium dense, fine grained, low plasticity	
				40		
			238.0			
SS 13	5-6-6	10			SAND, with silt (SP-SM) - Reddish yellow (7.5YR 6/8), wet, medium dense, fine grained	
				45		
SS	5-9-10	9			SAA except reddish yellow (7.5YR 7/6), -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1189

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1189

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	7-9-12	9		55	SAA except strong brown (7.5YR 5/6)	
SS 16	8-12-17	12		60	SAA except red (2.5YR 5/6)	Water level depth at end of 1/30/07 = Top of casing
SS 17	8-12-14	13		65	SAA except red (10R 7/8)	Water level depth at beginning of 1/31/07 = 39.0 feet
SS 18	5-7-7	6		70	SAA except brownish yellow (10YR 6/8)	
			208.0			
SS 19	2-2-3	10		75	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), wet, loose, fine grained, -HCL	
			203.0			
SS 20	2-4-5	18		80	**SAND, clayey (SC)** - Very pale yellow (10YR 8/4), wet, loose, fine grained, nonplastic to low plasticity, -HCL	
SS 21	1-3-1	12		85	SAA except pale yellow (2.5Y 7/3), very loose, low to medium plasticity	
SS 22	4-5-7	18		90	SAA except light greenish gray (GLEY1 8/10Y), medium dense, very fine to fine grained, +HCL	
			188.0			
SS 23	3-4-5	18		95	**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 8/10Y), wet, stiff, medium to high plasticity, +HCL	
			183.0			
SS 24	6-8-13	18		100	**CLAY, with sand (CL)** - Light greenish gray (GLEY1 8/10Y), wet, very stiff, low to medium plasticity, very fine SAND, +HCL	
			178.0			
SS 25	8-10-12	18		105	**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY2 5/5BG), wet, very stiff, medium to high plasticity, very fine grained SAND, +HCL	
			173.0			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1189**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1189

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	9-14-15	16	168.0	110		**CLAY, with sand (CL)** - Pale yellow (2.5Y 8/3), wet, very stiff, medium plasticity, fine grained SAND, contains shell fragments <1/8" in diameter, +HCL	
SS 27	☒	10-7-8	16	163.0	115		**SAND, with clay (SP-SC)** - Yellow (2.5Y 8/6), wet, medium dense, fine grained, nonplastic to low plasticity, +HCL	
SS 28	☒	11-15-19	13	158.0	120		**CLAY, sandy (CL)** - Pale yellow (2.5Y 8/3), wet, hard, low plasticity, fine grained SAND, contains shell fragments <1/4" in diameter, +HCL	
SS 29	☒	12-19-23	12	153.0	125		**SAND, clayey (SC)** - Pale yellow (2.5Y 8/4), wet, hard, fine grained, +HCL	
SS 30	☒	13-13-12	11	148.0	130		**SAND (SP)** - Yellow (2.5Y 8/6), wet, medium dense, fine to medium grained, -HCL	
SS 31	☒	18-29-31	18		135		**SAND, clayey (SC)** - Pale yellow (2.5Y 8/2), wet, very dense, fine grained, contains abundant shell hash, +HCL	
SS 32	☒	17-18-24	13	138.0	140		SAA except pale yellow (2.5Y 8/3), low to medium plasticity, contains shell fragments <1/8", +HCL	
SS 33	☒	14-9-13	16		145		**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/3), wet, medium dense, fine to medium grained, contains shell fragments, +HCL	
SS 34	☒	50-15-14	12	130.0	150		SAA except very pale brown (10YR 8/3)	
							Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1189**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-1191

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1144301.6 E 619490.8	2/5/2007	2/6/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	3 Inches	337153	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
260.3	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			260.3			
SS 1	1-1-1	15	258.8		**SAND, with silt (SP-SM)** - Brown (10YR 4/3), damp, very loose, fine grained, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	3-7-13	16			**SAND, clayey (SC)** - Brown (10YR 4/3), dry, medium dense, fine grained, low plasticity	
SS 3	6-9-13	16		5	SAA except red (2.5YR 4/8)	
SS 4	6-11-12	15			SAA	
SS 5	7-10-12	15		10	SAA	
SS 6	7-12-17	11			SAA	
SS 7	7-9-12	13		15	SAA	
SS 8	4-8-10	13		20	SAA except reddish yellow (7.5YR 6/8), damp, contains CLAY seams	
			238.3			
SS 9	5-5-8	11		25	**SAND, with clay (SP-SC)** - Red (2.5YR 5/8), damp, medium dense, fine grained, nonplastic	
SS 10	5-7-9	9		30	SAA	
SS 11	5-8-11	10		35	SAA except red (10R 4/8), fine to medium grained, low plasticity	
SS 12	5-10-11	9		40	SAA except yellowish red (5YR 5/8)	
SS 13	7-14-18	9		45	SAA except red (10R 5/8)	
			213.3			
SS	3-4-6	18			**CLAY, silty with sand (CL-ML)** - Yellow (2.5Y 7/6), moist, stiff, medium plasticity,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1191

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-1191

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					contains traces of phosphate grains, -HCL	
SS 15	3-5-6	16		55	SAA except fine to medium grained SAND	
SS 16	3-3-5	18		60	SAA except contains SAND seams	
SS 17	10-4-16	18		65	SAA except pale yellow (2.5Y 7/4), damp, very stiff, low plasticity, contains trace shell fragments and phosphate grains, +HCL	Water level depth at end of 2/5/07 = Top of casing
SS 18	4-4-6	18		70	SAA except pale yellow (5Y 7/3), stiff	Water level depth at beginning of 2/6/07 = 33.0 feet
SS 19	29-12-17	18	183.3	75	SAA	
SS 20	26-19-19	18		80	**SILT (ML)** - Greenish gray (GLEY1 5/10GY), dry, hard, contains CLAY, shell fragments, and phosphate grains, +HCL	
SS 21	7-9-12	18	173.3	85	SAA except very stiff	
SS 22	50/6"	6		90	**SAND, clayey (SC)** - Pale yellow (5Y 8/4), moist, very dense, fine to coarse grained, contains abundant shell fragments and trace phosphate grains, +HCL	
SS 23	19-17-20	12	163.3	95	SAA except pale yellow (2.5Y 7/6), dense, medium to coarse grained with cemented SAND	
SS 24	19-17-26	18		100	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/3), moist, dense, fine to medium grained, contains trace shell fragments and phosphate grains, +HCL	
SS 25	19-37-34	17	153.3	105	SAA except contains abundant shell fragments	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1191**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-1191

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	10-9-13	18		110	**SAND, clayey (SC)** - Pale yellow (5Y 8/3), moist, medium dense, fine to medium grained, low plasticity, contains traces of shell fragments and phosphate grains, +HCL	
SS 27	11-17-24	15		115	SAA except dense	
SS 28	10-12-8	17		120	SAA except pale yellow (5Y 7/3), medium dense	
			138.3			
SS 29	50/1"	0		125	**NO RECOVERY**	
			133.3			
SS 30	7-9-14	18		130	**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 5/10GY), moist, very stiff, contains traces of shell fragments and phosphate grains, +HCL	
SS 31	9-50/5"	11		135	SAA except light greenish gray (GLEY1 7/10GY), hard	
			123.3			
SS 32	21-14-14	18		140	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10GY), dry to damp, very stiff, fine grained SAND seams, low plasticity, contains traces of shell fragments and phosphate grains, +HCL	
			118.3			
SS 33	9-32-25	18		145	**SAND, clayey (SC)** - Pale yellow (2.5Y 8/4), dry to damp, very dense, fine to coarse grained with cemented SAND, low plasticity, contains shell fragments and trace phosphate grains, +HCL	
SS 34	20-15-22	18			SAA except dense	
			110.3	150	Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1191**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-1192

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1144217.4 E 618840.9	2/5/2007	2/6/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	179.5

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
243.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			243.2			
SS 1	1-1-2	4			**SAND, with silt (SP-SM)** - Strong brown (7.5YR 5/6), damp, very loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-3-3	14			SAA except red (10R 4/8), loose	
			239.9			
SS 3	2-4-5	10		5	**SAND, with clay (SP-SC)** - Yellow (10YR 7/8), damp, loose, fine grained	
SS 4	2-4-4	15			SAA except yellowish brown (10YR 5/8)	
			235.2			
SS 5	3-5-6	16		10	**SAND, with silt (SP-SM)** - Dusky red (10R 3/2), damp, loose, fine grained	Installed 3" steel casing to a depth of 10.0 feet
SS 6	3-5-8	9			SAA except brownish yellow (10YR 6/6), moist, medium dense	
SS 7	4-6-7	13		15	SAA except red (2.5YR 4/6)	
SS 8	3-6-7	8		20	SAA except strong brown (7.5YR 5/6)	
SS 9	4-7-8	12		25	SAA except reddish yellow (7.5YR 6/8), fine to medium grained	
SS 10	4-6-8	10		30	SAA except yellowish brown (10YR 5/8), fine grained	
SS 11	3-5-5	8		35	SAA	
SS 12	3-5-4	7		40	SAA except brownish yellow (10YR 6/8), loose	
			201.2			
SS 13	2-3-5	9		45	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), moist, loose, fine grained	
			196.2			
SS	2-2-3	13			**SAND, silty (SM)** - Light yellowish brown (10YR 6/4), wet, loose, fine to medium grained.	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1192

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-1192

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14				191.7			-HCL	
SS 15		1-9-5	18		55		**SAND, clayey (SC)** - Light greenish grey (GLEY1 8/10Y), wet, medium dense, fine grained, low plasticity, +HCL	
				186.2				
SS 16		10-11-12	18		60		**CLAY, silty (CL-ML)** - Light greenish grey (GLEY1 7/5GY), wet, very stiff, medium plasticity, +HCL	
				181.2				
SS 17		2-5-4	18		65		**CLAY (CH)** - Light greenish grey (GLEY1 8/10Y), wet, stiff, high plasticity, +HCL	
				176.2				
SS 18		3-4-6	18		70		**SAND, with clay (SP-SC)** - Light greenish grey (GLEY1 8/10GY), wet, medium dense, fine grained, nonplastic, +HCL	
SS 19		50/3"	1		75		SAA except contains shell fragments up to 1/2" in diameter	
				166.2				
SS 20		50/3"	2		80		**SAND, with silt (SP-SM)** - Pale yellow (5Y 8/2), wet, very dense, fine grained, +HCL	
SS 21		11-11-11	9		85		SAA except pale yellow (5Y 8/4), medium dense, fine to medium grained, contains shell fragments up to 1/4" in diameter	
				156.2				
SS 22		11-21-22	16		90		**CLAY (CL)** - Pale yellow (5Y 8/3), wet, very stiff, contains shell fragments up to 1" in diameter, nonplastic	Water level depth at end of 2/5/2007 = Ground surface
				151.2				
SS 23		15-5-6	18		95		**SAND, clayey (SC)** - Light greenish grey (GLEY1 8/10Y), wet, medium dense, fine grained, contains shell fragments up to 1/16" in diameter, nonplastic to low plasticity, +HCL	Water level depth at beginning of 2/6/2007 = 43.9 feet
				146.2				
SS 24		10-14-16	16		100		**SAND, with silt (SP-SM)** - Light greenish grey (GLEY1 8/10Y), wet, dense, fine to medium grained, contains shell hash	
				141.2				
SS 25		10-9-20	18	138.2	105		**CLAY, with sand (CL)** - Light greenish grey (GLEY1 8/10Y), wet, very stiff, contains shell fragments, medium plasticity, +HCL	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1192**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-1192

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	4-7-10	16	131.2	110	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/4), wet, medium dense, medium grained, nonplastic, +HCL	
SS 27	6-10-18	18		115	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/4), wet, medium dense, medium grained, contains shell fragments, +HCL	
SS 28	6-7-22		121.2	120	SAA except very pale brown (10YR 7/3), fine to medium grained	
SS 29	6-8-14	16		125	**SAND, clayey (SC)** - Yellow (10YR 8/6), wet, medium dense, fine to medium grained, nonplastic to low plasticity, +HCL	
SS 30	8-16-20	16	111.2	130	SAA except pale yellow (2.5Y 8/3), dense, contains shell fragments	
SS 31	13-11-15	18	106.2	135	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/4), wet, medium dense, fine to medium grained, +HCL	
SS 32	8-50/5"	8	101.2	140	**SAND, clayey (SC)** - Greenish grey (GLEY1 6/5GY), wet, very dense, fine to medium grained, +HCL	
SS 33	50/4"	1.5		145	**SAND, with silt (SP-SM)** - Light greenish grey (GLEY1 7/10GY), wet, very dense, fine grained, +HCL	
SS 34	14-16-22	12	91.2	150	SAA except light greenish grey (GLEY1 8/10Y), dense, fine to medium grained, contains shell fragments	
SS 35	18-28-29	18	85.7	155	**CLAY, silty (CL-ML)** - Dark greenish grey (GLEY1 4/5GY), wet, hard, medium plasticity, +HCL	
SS 36	16-29-50	18		160	**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 5/10GY), wet, hard, medium plasticity, +HCL	Top of Blue Bluff Marl at a depth of 157.5 feet.
SS	50/2"	1			SAA except low plasticity	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1192**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-1192

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
37					165			
SS 38		13-19-50/4"	16		170		SAA except medium to high plasticity	
				71.2				
SS 39		50/3"	1		175		**SILT (ML)** - Greenish grey (GLEY1 6/10GY), wet, hard, nonplastic, +HCL	
				66.2				
SS 40		50-46-50/1"	13	63.6			**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 5/10GY), wet, hard, medium to high plasticity, +HCL	
							Boring terminated at 179.58 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1192**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-1193

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1144091.5 E 619277.8	2/6/2007	2/8/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	3 Inches	337153	178.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
254.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			254.1			
SS 1	1-1-1	16			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/6), moist, very loose, fine grained, low plasticity	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-1-1	17			SAA except yellowish brown (10YR 5/8)	
SS 3	1-2-2	9			SAA except yellowish brown (10YR 6/8)	
				5		
SS 4	1-2-2	10			SAA except reddish yellow (7.5YR 7/8)	
			246.1			
SS 5	2-2-3	14.5			**SAND, with clay (SP-SC)** - Red (2.5YR 5/8), moist, loose, fine grained, low plasticity	
			243.6	10		
SS 6	4-7-10	11			**SAND (SP)** - Very pale brown (10YR 8/3), moist, medium dense, fine grained	
			241.1			
SS 7	7-8-9	13		15	**SAND, clayey (SC)** - Red (2.5YR 4/8), moist, medium dense, fine grained, low plasticity	
SS 8	4-5-6	13.5		20	SAA	Water level depth at end of 2/6/2007 = Ground surface
SS 9	4-6-8	13.5		25	SAA	Water level depth at beginning of 2/7/2007 = 14.0 feet
SS 10	3-5-6	9		30	SAA except red (2.5YR 5/8)	
SS 11	4-6-8	7		35	SAA except red (10R 5/8), fine to medium grained	
SS 12	5-6-7	9		40	SAA except reddish yellow (7.5YR 6/8)	
			212.1			
SS 13	4-6-7	16		45	**CLAY, silty with sand (CL-ML)** - Very pale brown (10YR 8/2), moist, stiff, fine to medium grained, low plasticity	
			207.1			
SS	3-5-7	11			**SAND, clayey (SC)** - Yellowish brown (10YR 5/8), damp, medium dense, low plasticity.	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1193

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-1193

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					contains traces of phosphate grains	
SS 15	4-4-6	17		55	SAA except yellow (10YR 7/8), loose	
SS 16	3-3-3	18		60	SAA except brownish yellow (10YR 6/8)	
			192.1			
SS 17	5-20-15	18		65	**CLAY, silty (CL-ML)** - Pale yellow (5Y 8/3), dry to damp, hard, contains traces of shell fragments and phosphate grains, +HCL	
SS 18	14-32-15	18		70	SAA except pale yellow (5Y 8/2)	
SS 19	7-10-13	18		75	SAA except pale yellow (5Y 7/4), very stiff	
SS 20	8-9-11	18		80	SAA except pale olive (5Y 6/4), low plasticity	
			172.1			
SS 21	50/6"	6		85	**SAND, clayey (SC)** - Pale yellow (5Y 8/2), dry to damp, very dense, low plasticity, contains shell fragments and phosphate grains	
SS 22	14-40-35	17.5		90	SAA except pale yellow (5Y 8/3), +HCL	
SS 23	14-50/2"	8		95	SAA except pale yellow (5Y 7/4)	
SS 24	12-50/6"	12		100	SAA except pale yellow (5Y 7/3)	
			152.1			
SS 25	7-11-13	18		105	**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 5/10GY), dry to damp, very stiff, low plasticity, contains traces of shell fragments, +HCL	
			147.1			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1193**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-1193

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	7-13-12	18		110	**SAND, clayey (SC)** - Pale yellow (5Y 8/3), damp, medium dense, medium to coarse grained, contains shell fragments and phosphate grains, +HCL	
SS 27	9-14-15	18		115	SAA except pale yellow (5Y 8/2)	
SS 28	6-23-50/5"	17		120	SAA except pale yellow (5Y 7/4)	
SS 29	6-11-19	18		125	SAA except moist	
SS 30	7-12-12	18		130	SAA except light yellowish brown (2.5Y 6/4)	
SS 31	8-21-49	16		135	SAA except pale yellow (5Y 7/4), very dense	
SS 32	30-34-42	18		140	SAA except pale yellow (5Y 7/3)	
SS 33	9-24-18	18		145	SAA except pale yellow (2.5Y 8/2), dense	
SS 34	7-50/1"	7	102.1	150	SAA except greenish grey (GLEY1 6/10GY), damp, very dense	
SS 35	50/0"	0	97.1	155	**NO RECOVERY**	
SS 36	9-11-12	18	92.1	160	SAA except light greenish grey (GLEY1 7/5G), moist, medium dense	
SS	24-50/2"	8			**CLAY, silty (CL-ML)** - Dark greenish grey	Top of Blue Bluff Marl at a depth of 162.0 feet.

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1193**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-1193

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
37						165		(GLEY1 4/10GY), dry to moist, hard, contains traces of shell fragments and phosphate grains, +HCL	
SS 38		▲	12-27-44	18		170		SAA except dry to damp, low plasticity	
					82.1				
SS 39			▲ 50/0"	0		175		**NO RECOVERY**	
					77.1				
SS 40			▲ 50/4"	4	75.3			SAA except dark greenish grey (GLEY1 4/5GY)	
								Boring terminated at 178.83 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-1193**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1194

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1147504.7 E 621630.2	1/16/2007	1/16/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglund-MACTEC	Dietrich D-50	3 Inches	100	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
199.4	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			199.4			
SS 1	2-1-2	18			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/4), damp, very loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	5-4-5	15			SAA except yellowish brown (10YR 5/6), loose	
SS 3	8-7-8	16			SAA except yellowish brown (10YR 5/8), medium dense	
			193.9	5		
SS 4	4-6-12	10			**SAND, silty (SM)** - Yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6), damp, medium dense, medium grained	
SS 5	14-18-24	16		10	SAA except red (2.5YR 5/8) and brownish yellow (10YR 6/8), dense, fine grained, contains very pale brown (10YR 8/4) CLAY traces	
SS 6	13-18-20	15			SAA except strong brown (7.5YR 5/8), moist, medium to coarse grained, rounded, no CLAY traces	
SS 7	10-9-10	14		15	SAA	
			182.4			
SS 8	6-8-9	15		20	**SAND, clayey (SC)** - Yellow (10YR 7/6 to 7/8), damp, medium dense, fine grained	
SS 9	8-9-12	13		25	SAA except contains pale yellow (5Y 8/2) CLAY trace	
SS 10	7-8-12	17		30	SAA	
			167.4			
SS 11	12-10-13	13		35	***SAND, with silt (SP-SM)** - Light yellowish brown (10YR 6/4) to brownish yellow (10YR 6/6), moist, medium dense, fine grained, rounded	
			162.4			
SS 12	5-4-6	14		40	**SAND, clayey (SC)** - Light yellowish brown (10YR 6/4) to brownish yellow (10YR 6/6), moist, loose, fine grained	
			157.4			
SS 13	10-8-10	12		45	***SAND, with clay (SP-SC)**-Very pale brown (10YR 7/4), damp, medium dense	
SS	8-7-9	17			SAA except very pale brown (10YR 7/4) and pale yellow (2.5Y 7/4), moist, fine to medium	
			149.4			

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1194

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1194

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								grained, -HCL Boring terminated at 50 feet	

	SITE	HOLE NO.
	Vogtle Units 3 & 4 COL Project Final Log	B-1194

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1195

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1147574.8 E 622478.4	1/17/2007	1/17/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglund-MACTEC	Dietrich D-50	3 Inches	100	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.6			
SS 1	2-1-2	15			**SAND, with silt (SP-SM)** - Light yellowish brown (10YR 6/4) to brownish yellow (10YR 6/6), damp, very loose, fine grained, rounded	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-2-2	14			SAA except brownish yellow (10YR 6/6)	
SS 3	3-2-3	17		5	SAA except loose	
SS 4	3-3-4	11	212.6		SAA	
SS 5	4-5-7	18	211.1		**SAND (SP)** - Very pale yellow (10YR 7/3), wet, medium dense, medium to coarse grained, rounded	
			210.1	10	**SAND, with silt (SP-SM)** - Strong brown (7.5YR 5/6), moist, medium dense, fine grained	
SS 6	5-4-7	15			**SAND, clayey (SC)** - Yellowish red (5YR 5/8), damp, medium dense, medium grained, rounded	
SS 7	10-11-14	18		15	SAA	
SS 8	18-19-22	15		20	SAA except dense	
SS 9	17-15-18	17		25	SAA except fine grained	
SS 10	8-11-11	18		30	SAA	
SS 11	9-8-9	15		35	SAA except brownish yellow (10YR 6/8), moist	
SS 12	6-6-9	17		40	SAA except contains pale yellow (5Y 8/3) CLAY traces	
SS 13	7-7-8	17		45	SAA except brownish yellow (10YR 6/6 to 10YR 6/8), fine grained	
			173.6			
SS	5-7-9	18	170.6		***SAND, clayey (SC)** - Yellow (10YR 7/8), damp, very stiff, low plasticity, -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1195

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1195

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								Boring terminated at 50 feet	

	SITE	HOLE NO.
	Vogtle Units 3 & 4 COL Project Final Log	B-1195

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1196

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1147286.6 E 622017.5	1/15/2007	1/16/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglund-MACTEC	Dietrich D-50	3 Inches	100	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
217.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			217.5			
SS 1	WOH/6"-1-1	10			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/4), dry, very loose, medium grained, rounded	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-1-1	12			SAA except brownish yellow (10YR 6/6), damp	
SS 3	1-2-2	12		5	SAA	
SS 4	2-3-4	15			SAA except yellowish brown (10YR 5/8), wet, loose, medium to coarse grained	
SS 5	2-1-5	17		10	SAA except reddish yellow (7.5YR 6/6), coarse grained, sub-rounded	
SS 6	2-11-26	18	205.5		SAA except reddish yellow (7.5YR 6/8), dense	
SS 7	22-25-28	13		15	***SAND, silty (SM)** - Red (2.5YR 4/6), damp, very dense, medium grained SAA except red (2.5YR 5/6)	
			200.5			
SS 8	17-20-27	13		20	**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), moist, dense, fine grained, rounded	Water level depth at end of 1/15/07 = Ground surface
			195.5			
SS 9	9-10-11	12		25	**SAND, silty (SM)** - Yellowish red (5YR 5/8), moist, medium dense, fine grained	Water level depth at beginning of 1/16/07 = Borehole dry
			190.5			
SS 10	15-18-27	12		30	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), damp, dense, medium to coarse grained	
			185.5			
SS 11	6-6-11	12		35	**SAND, clayey (SC)** - Yellow (10YR 7/6), moist, medium dense, fine grained, contains medium plasticity CLAY	
SS 12	7-7-10	12		40	SAA	
SS 13	5-7-10	14		45	SAA	
SS	7-6-8	18	167.5		SAA except brownish yellow (10YR 6/6), -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-1196

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-1196

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								Boring terminated at 50 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-1196

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-1197

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1146874.7 E 622003.8	1/15/2007	1/15/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skoglund-MACTEC	Dietrich D-50	3 Inches	100	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
245.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			245.6			
SS 1	1-1-1	17			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/6), damp, very loose, medium grained, rounded	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-2-2	15			SAA except strong brown (7.5YR 5/6)	
SS 3	2-3-3	13			SAA except loose	
			240.1	5		
SS 4	3-2-4	7			**SAND, silty (SM)** - Yellowish red (5YR 5/6), moist, loose, fine grained, rounded	
SS 5	4-4-5	12			SAA except red (2.5YR 4/6)	
				10		
SS 6	6-8-10	11			SAA except red (10YR 4/6)	
			232.6			
SS 7	9-10-15	12			**SAND, clayey (SC)** - Red (2.5YR 4/6), damp, medium dense, fine to medium grained	
				15		
			228.6			
SS 8	12-15-18	12			**SAND, with silt (SP-SM)** - Red (2.5YR 5/6), moist, dense, medium grained, rounded	
				20		
			223.6			
SS 9	10-11-15	11			**SAND (SP)** - Reddish yellow (7.5YR 6/8), wet, medium dense, fine grained, rounded	
				25		
			218.6			
SS 10	7-13-16	13			***SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6) and yellowish red (5YR 5/8), moist, medium dense, fine to medium grained	
				30		
SS 11	12-12-20	16			SAA except yellow (10YR 7/6 and 7/8), dry, dense, medium grained, sub-rounded	
				35		
SS 12	13-20-21	11			SAA except white (10YR 8/1) and brownish yellow (10YR 6/8), damp, medium to coarse grained	
				40		
			203.6			
SS 13	6-6-8	18			**CLAY, sandy (CL)** - Pale yellow (2.5Y 7/4) and yellow (2.5Y 7/6), damp, stiff, contains fine grained SAND, medium plasticity, -HCL	
				45		
			198.6			
SS	6-6-5	18			***SAND, silty (SM)** - Pale yellow (2.5Y 7/3), damp, medium dense, medium plasticity,	
			195.6			

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-1197

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-1197

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								\contains fine grained SAND, -HCL/	
								Boring terminated at 50 feet	

	SITE	HOLE NO.
	Vogtle Units 3 & 4 COL Project Final Log	B-1197

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 8	B-3001(DH)

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1142599.5 E 621799.6	11/29/2006	2/5/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-Mactec	CME-75	6 Inches	211797	420.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.4	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.4			
SS 1	50/4"	4	216.9		**GRAVEL (GP)** - Brown (7.5YR 5/2), very dense	Top of Fill at a depth of 0.0 feet
SS 2	50/6"	6			***SAND, silty (SM)** - Red (2.5YR 5/8), dry, very dense	Top of Barnwell Group at a depth of 1.5 feet
SS 3	17-17-20	14	212.9	5	SAA except dense	
SS 4	10-9-15	11			***SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), dry, medium dense	
SS 5	13-13-15	12	207.9	10	SAA	
SS 6	14-14-16	16			***SAND, silty (SM)** - Red (2.5YR 4/8), dry, medium dense	
SS 7	14-10-10	12		15	SAA	
SS 8	8-12-8	10		20	SAA except yellow (10YR 7/6) to red (2.5YR 5/8)	
SS 9	11-9-10	10		25	SAA except reddish yellow (7.5YR 6/8)	
SS 10	6-8-10	12		30	SAA	
SS 11	5-6-7	14		35	SAA except brownish yellow (10YR 6/8)	
			181.4			
SS 12	6-7-8	18		40	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), dry, medium dense, fine grained	
			176.4			
SS 13	6-9-10	18		45	***SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), moist, medium dense	
			171.4			
SS	3-4-5	17			**SAND, clayey (SC)** - Yellow (10YR 7/6), dry, loose, fine grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3001(DH)

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 8	B-3001(DH)

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			166.4			
SS 15	10-9-10	11		55	**SAND (SP)** - Yellow (10YR 7/6), dry, medium dense	
			161.4			
SS 16	8-10-12	11		60	***SAND, with silt (SP-SM)** - Yellow (10YR 7/6), moist to wet, medium dense	
			156.4			
SS 17	WOH/6"-2-2	18		65	**SAND, clayey (SC)** - Very pale brown (10YR 8/2) and brown (10YR 5/6) mottled, moist to wet, very loose to loose, fine to medium grained	
SS 18	WOH/18"			70	SAA except pale yellow (2.5Y 8/4), wet, very loose	
			146.4			
SS 19	50/3"	18	143.9	75	**CLAY, sandy (CL)** Pale yellow (5Y 8/3), damp, hard	Loss of circulation at a depth of 72.0 feet
			141.4		**GRAVEL, silty (GM)** - Pinkish white (7.5YR 8/3), damp, very dense, +HCL	Top of Utley Limestone at a depth of 74.5 feet
SS 20	50/1"	3		80	**NO RECOVERY**	
			136.4			
SS 21	10-10-12	8		85	**CLAY (CL)** - Green, pale yellow (5Y 7/4), damp, very stiff	
			129.9			
SS 22	10-10-20	13		90	**CLAY (CL)** - Dark greenish gray (GLEY1 4/1/10GY), damp, very stiff to hard	Top of Blue Bluff Marl at a depth of 88.5 feet
			126.4			
SS 23	50/2"	0		95	**NO RECOVERY**	Reamed hole to 95 feet using 6" drill bit. Installed 6" PVC casing to a depth of 98.0 feet. Pitcher
			121.4			
UD 1		14		100	**CLAY, with gravel (CL)** - Greenish gray (GLEY1 5/5GY), moist, hard, low plasticity, angular GRAVEL, +HCL Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Water level depth at end of 1/21/07 = Ground surface
UD 2		3		105	SAA Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher Water level depth at beginning of 1/22/07 = Ground surface

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3001(DH)**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 8	B-3001(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
UD 3		16		110	SAA Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher
			106.4			
UD 4		24		115	**CLAY (CH)** - Greenish gray (GLEY1 5/5GY), moist, very stiff, +HCL Pocket Penetrometer: 1.5 TSF, 2.5 TSF, 2.0 TSF	Pitcher At 96.0 feet: End logging by M. Harvey. Begin logging by R. Clark.
SS 24	33-20-33	18		120	SAA except greenish gray (GLEY1 6/5GY), hard, low plasticity, contains trace angular GRAVEL	End drilling by Warren-MACTEC. Begin drilling by Oglesby-MACTEC (to install casing only) with a CME-75, hammer serial #219907
			96.4			
SS 25	50/5"	5		125	**CLAY, with gravel (CL)** - Greenish gray (GLEY1 6/5GY), moist, hard, low plasticity, angular GRAVEL, +HCL	Begin drilling by Bilbrey-Miller with a CME-85, hammer serial #270256
			91.4			
SS 26	50/5"	5		130	**CLAY (CL)** - Light greenish gray (GLEY1 7/10Y), moist, hard, low plasticity, contains trace angular GRAVEL, +HCL	
			86.4			
UD 5		24		135	**CLAY, with gravel (CL)** - Greenish gray (GLEY1 6/5GY), moist, hard, low plasticity, angular GRAVEL, +HCL Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher
			81.4			
SS 27	13-15-50/4"	16		140	**CLAY (CL)** - Greenish gray (GLEY1 6/10Y), moist, hard, low plasticity, +HCL	
SS 28	19-18-17	18		145	SAA except light greenish gray (GLEY1 7/5GY)	
SS 29	12-18-19	18		150	SAA except contains angular GRAVEL	Water level depth at end of 1/23/07 = Ground surface
UD 6		17.5		155	SAA except stiff, no GRAVEL Pocket Penetrometer: 1.0 TSF, 1.5 TSF, 1.4 TSF	Water level depth at beginning of 1/24/07 = 32.0 feet Pitcher Water level depth at end of 1/24/07 = Ground surface
			61.4			
SS 30	8-12-16	18		160	**SAND, with clay (SP-SC)** - Very dark greenish gray (GLEY1 3/10Y), moist, medium dense, very fine grained, nonplastic, -HCL	Top of Still Branch Formation at a depth of 157.0 feet Water level depth at beginning of 1/29/07 = 29.4 feet
SS	12-16-42	18			SAA except very dark gray (5Y 3/1), wet, very	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3001(DH)**

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 8	B-3001(DH)

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
31				165	dense	
UD 7		22		170	SAA except greenish gray (GLEY1 5/5GY), medium dense Pocket Penetrometer: 1.0 TSF, 0.75 TSF, 0.75 TSF	Pitcher
UD 8		24		175	SAA Pocket Penetrometer: 0.75 TSF, 0.5 TSF, 0.5 TSF	Pitcher
SS 32	8-13-21	18		180 185	SAA except dark greenish gray (GLEY1 4/10Y)	Water level depth at end of 1/29/07 = Ground surface Water level depth at beginning of 1/30/07 = 23.0 feet
SS 33	9-18-30	18		190	SAA except dense	
UD 9		17		195	SAA Pocket Penetrometer: 4.2 TSF, 3.5 TSF, 3.8 TSF	Pitcher
SS 34	13-20-22	18		200 205	SAA	
UD 10		19		210	SAA Pocket Penetrometer: 1.8 TSF, 2.5 TSF, 1.9 TSF	Pitcher
			3.9	215		Top of Congaree Formation at a depth of 214.5 feet
SS 35	40-31-34	18		220	**SAND, with silt (SP-SM)** - Greenish gray (GLEY1 5/10Y), wet, very dense, coarse grained, nonplastic, +HCL	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3001(DH)**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	5 OF 8	B-3001(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			-5.6	225		
SS 36	22-30-45	18	-13.6	230	**SILT (ML)** - Light gray (GLEY1 7/N), moist, hard, low plasticity, low toughness, micaceous, contains kaolinitic CLAY, -HCL	
				235		
SS 37	23-35-50/5.5	17.5		240	**CLAY (CL)** - Pale red (10R 7/3) and white (10R 7/3), damp, hard, low plasticity, high toughness, presence of iron staining, -HCL	Water level depth at end of 1/30/07 = Ground surface Water level depth at beginning of 1/31/07 = 27.0 feet
				245		
UD 11		16		250	SAA except white (10R 8/1), moist, +HCL Pocket Penetrometer: 4.0 TSF, >4.5 TSF, 4.4 TSF	Pitcher
				255		
SS 38	17-22-28	18		260	SAA except white (GLEY1 8/N), reddish brown (2.5YR 5/4), and olive yellow (2.5Y 6/6) mottled, medium toughness, contains calcareous concretions and abundant iron staining, -HCL	
				265		
SS 39	13-23-33	18	-53.6	270	SAA except dark gray (10YR 4/1), damp, contains trace laminations	
				275		

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	B-3001(DH)

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	6 OF 8	B-3001(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 40	10-24-28	17		280, 285	**SAND, with clay (SP-SC)** - Gray (GLEY1 6/N), wet, very dense, coarse grained/some fine to medium grained, subangular to subrounded, nonplastic, micaceous, -HCL	Water level depth at beginning of 2/2/07 = 62.0 feet
UD 12		24		290, 295	SAA except light gray (10YR 7/1), medium dense, fine to medium grained Pocket Penetrometer: 1.5 TSF, 2.0 TSF, 1.0 TSF	Pitcher
SS 41	25-26-34	16		300, 305	SAA except very dense, medium to coarse grained	
SS 42	30-50/4.5"	8	-95.6	310, 315	SAA except dark gray (10YR 4/1), very fine to fine grained	
SS 43	27-43-50/3"	15	-105.6	320, 325	**SILT (MH)** - Dark gray (10YR 4/1), moist, hard, medium plasticity, low to medium toughness, contains trace mica, -HCL	
SS 44	9-16-25	17	-114.6	330, 335	**CLAY (CH)** - Dark gray (10YR 4/1), moist, hard, high plasticity, contains SAND lenses 1" thick, medium grained, +HCL	Water level depth at end of 2/2/07 = Ground surface Water level depth at beginning of 2/3/07 = 66.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3001(DH)**

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	7 OF 8	B-3001(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 45	12-15-22	18	-120.6	340	**SAND, with silt (SP-SM)** - Light brownish gray (10YR 6/2), wet, medium dense, coarse grained, nonplastic	
			-125.6		**CLAY (CL)** - Very dark gray (GLEY1 3/N), moist, hard, low plasticity, medium toughness, blocky, contains laminations of SILT, -HCL	Loss of circulation at a depth of 342.0 feet. Added 3 batches of drilling fluid before fluid level stabilized at a depth of 68.0 feet. Circulation never reestablished.
				345	**CLAY (CL)** - Very dark gray (GLEY1 3/N), moist, hard, low plasticity, medium toughness, blocky, contains laminations of SILT, -HCL	
UD 13		15.5		350	SAA except light greenish gray (GLEY1 7/10Y), dry, high toughness Pocket Penetrometer: >4.5 TSF, 4.5 TSF, >4.5 TSF	Top of Snapp Formation at a depth of 344.0 feet Pitcher Water level depth at end of 2/3/07 = 66.0 feet Water level depth at beginning of 2/4/07 = 64.0 feet
				355		
SS 46	20-35-41	18		360	SAA except light gray (GLEY1 7/N), damp, contains iron staining, kaolinitic CLAY, and mica	
			-145.6			
				365		Experincing hole collapse and loss of circulation at a depth of 365.0 feet
SS 47	23-50/5"	11		370	**CLAY, with sand (CL)** - White (GLEY1 8/N), moist, hard, low plasticity, fine to medium grained SAND, contains CLAY lenses, mica, and kaolinitic CLAY, -HCL	
			-155.6			
				375		
SS 48	23-37-50	16		380	**CLAY (CL)** - Light gray (GLEY1 7/N), damp, hard, low plasticity, high toughness, contains iron staining and kaolinitic CLAY, -HCL	
				385		
UD 14		6		390	SAA except very stiff Pocket Penetrometer: 2.0 TSF, 2.5 TSF, 2.5 TSF	Pitcher Water level depth at end of 2/4/07 = 66.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3001(DH)**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	8 OF 8	B-3001(DH)

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					-175.6	395			Water level depth at beginning of 2/5/07 = 64.0 feet
UD 15				24	-182.1	400		**SAND, with clay (SP-SC)** - White (GLEY1 8/N), wet, very dense, fine grained, nonplastic, contains kaolinitic CLAY matrix and mica, -HCL Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher
						405			
						410		Continue drilling to 420' to serve as a "rathole" before geophysical logging occurs and to allow cuttings to settle since circulation was not reestablished	
						415			
					-201.6	420		Boring terminated at 420 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	B-3001(DH)

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 5	B-3002(DH)

LOGGED BY	COORDINATES	BEGUN	COMPLETED
A. Reimer	N 1142600.0 E 621872.5	11/29/2006	1/25/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Christian-MACTEC	CME-75	3 Inches	200587	249.9

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.9			
SS 1	18-50/4"	7			**GRAVEL (GP)** Gravelly and sandy	Top of Fill at a depth of 0.0 feet
SS 2	32-18-22	18	216.9		SAA	
SS 3	17-18-20	16			**SAND, silty (SM)** - Reddish brown (2.5 YR 4/8), dry to damp, dense, fine to medium grained, nonplastic	Top of Barnwell Group at a depth of 2.0 feet
			213.4	5	SAA except dry, contains 1.5" thick layer of SAND, clayey (SC), yellowish red (5YR 5/8) layer	
SS 4	9-12-17	13.5			**SAND, silty, clayey (SC-SM)** - Mottled reddish brown (2.5YR 4/8) and yellowish red (5YR 5/8), dry, medium dense, fine to medium grained	
			210.9			
SS 5	8-11-12	15			**SAND, silty (SM)** - Reddish brown (2.5YR 4/8), dry, medium dense, fine to medium grained, nonplastic	
				10	SAA	
SS 6	8-11-13	16.5				
SS 7	8-12-13	15.5			SAA except reddish brown (2.5YR 4/6) and yellowish red (5YR 5/8), contains 2" layer CLAY, sandy (CL), reddish brown (2.5YR 4/8), low plasticity	
				15		
			201.9			
SS 8	10-12-17	11			**SAND, silty, clayey (SC-SM)** - Yellowish brown (10YR 6/8), dry, medium dense, fine grained, nonplastic, slightly lignitic, calcareous, bottom 5" mottled with reddish brown (2.5YR 5/8)	
				20		
			196.9			
SS 9	8-9-10	12.5			**SAND (SP)** - Brown (7.5YR 5/6) and reddish yellow (7.5YR 6/6), damp, medium dense, fine to coarse grained, well graded, nonplastic, calcareous	
				25		
			191.9			
SS 10	5-6-8	16.5			**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/6) and yellowish brown (10YR 5/6), damp, medium dense, fine to medium grained, low plasticity, calcareous	
				30		
			186.9			
SS 11	6-7-11	15.5			**CLAY, silty, sandy (CL-ML)** - Yellow (10YR 7/6) and brownish yellow (10YR 6/6), damp, very stiff, low plasticity, fine to medium grained SAND	
				35		Water level depth at end of 11/28/06 = Ground surface
			181.9			
SS 12	5-9-9	16			***SAND, with silty clay (SP-SC)** - Brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6), moist, medium dense, fine to coarse grained, nonplastic to low plasticity, calcareous	Water level depth at beginning of 11/30/06 = 18.5 feet
				40		
			176.9			
SS 13	4-4-7	17			**SAND, clayey (SC)** - Brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6), moist, medium dense, fine to medium grained, medium plasticity	
				45		
			171.9			
SS	9-9-10	14.5			***SAND, with silty clay (SP-SC)** - Brownish yellow (10YR 6/6) and yellowish brown (10YR	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3002(DH)

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 5	B-3002(DH)

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					5/6), moist, medium dense, fine to coarse grained, nonplastic, lignitic, calcareous	
SS 15	9-14-20	15		55	SAA except with yellow (10YR 7/6), damp, dense, slightly lignitic	
			161.9			
SS 16	10-14-19	13.5		60	**SAND, silty (SM)** - Yellow (10YR 7/6), light yellowish brown (10YR 6/4), and pink (7.5YR 7/3), damp to moist, dense, fine to coarse grained, nonplastic, lignitic	
			156.9			
SS 17	1-1-2	18		65	***SAND, clayey (SC)** - Pale olive (5Y 6/4) and light yellowish brown (2.5Y 6/3), damp, very loose, medium plasticity, fine to medium grained, contains nodules of strong brown (7.5YR 5/8), fine grained SAND, slightly lignitic, -HCL	
SS 18	10-11-20	18		70	SAA	
			146.9			
SS 19	11-16-35	18		75	**CLAY, silty (CL-ML)** - Pale yellow (2.5YR 7/3), moist, hard, nonplastic to low plasticity, contains shell fragments, +HCL	
			142.9			Top of Utley Limestone at a depth of 76.0 feet
SS 20	50/3"	2		80	**CLAY, silty (CL-ML)** - Pale yellow (2.5YR 7/3), moist, hard, nonplastic to low plasticity, contains shell fragments, +HCL	Loss of circulation at a depth of 76.0 feet Loss of circulation at a depth of 81.0 feet
SS 21	17-50/2"	7		85	SAA except pale yellow (2.5Y 8/4)	
			133.4		***SILT (MH)** - Greenish gray (GLEY1 5/5GY), dry, hard, fine grained SAND, +HCL	Top of Blue Bluff Marl at a depth of 85.5 feet
SS 22	18-20-32	18		90		Loss of approximately 80 gallons of drilling fluid from depths of 85.0 to 87.0 feet End logging by A. Reimer. Begin logging by A. Taylor.
SS 23	50/4.5"	4		95	SAA except greenish gray (GLEY1 6/5GY)	End drilling by Christian-MACTEC. Begin drilling by Oglesby-MACTEC (to install casing only) with a CME-75, hammer serial #219907.
UD 1		24			SAA	
				100		Begin drilling by Burnett-Gregg Drilling with a CME-850, hammer serial #X02958.
SS 24	14-50/5"	11		105	SAA	Installed 6" steel casing to a depth of 95.0 feet Pitcher
			111.9			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3002(DH)**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 5	B-3002(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	2-20-50/3"	15		110	*CLAY, with sand (CH) - Greenish gray (GLEY1 6/5GY), dry, hard, high plasticity, contains shell fragments, +HCL	
			106.9			
UD 2				115	*SAND, clayey (SC) - Greenish gray (GLEY1 6/5GY), moist, high plasticity, contains shell fragments, +HCL	Pitcher
SS 26	20-40-50/4"	16		120	SAA except greenish gray (GLEY1 6/10Y), dry, very dense, contains 6" seam of SAND (SP), greenish gray (GLEY1 5/5GY)	Water level depth at beginning of 1/12/07= 11.5 feet
SS 27	18-42-38	18		125	SAA	Loss of circulation at a depth of 125.0 feet
SS 28	9-9-32	18		130	SAA except damp, dense, contains 6" seam of MH material	
SS 29	10-16-18	18		135	SAA except does not contain MH material	Installed 4" steel casing to a depth of 132.0 feet. Changed from 5 7/8" to 3 7/8" tri cone roller bit. Changed from NWJ rods to AWJ rods.
			81.9			
SS 30	10-17-17	18		140	SILT (MH) - Greenish gray (GLEY1 6/10Y), damp, hard, high plasticity, +HCL	
SS 31	18-23-23	18		145	SAA	
SS 32	10-18-23	18		150	SAA	Water level depth at end of 1/19/07= 24.5 feet End logging by A. Taylor. Begin logging by M. Herrera. Top of Still Branch Formation at a depth of 153.0 feet
			65.9			
SS 33	31-50/5"	10		155	SAND, with silt (SP-SM) - Greenish gray (GLEY1 3/10GY), wet, very dense, fine grained, contains traces of phosphate grains, -HCL	
SS 34	12-17-24	13		160	SAA except very dark greenish gray (GLEY1 3/10Y), moist, dense, contains dark greenish gray CLAY seams, -HCL	
SS	50/4"	4			SAA except light greenish gray (GLEY1	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project Final Log	B-3002(DH)

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 5	B-3002(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
35					165		5/10Y), wet, very dense, contains SILT seam	
					170			
SS 36		50/3"	3		175		SAA except light greenish gray (GLEY1 5/10Y), contains traces of phosphate grains and fine grained SAND	
				41.9				
SS 37		9-15-25	18		180		**SAND, clayey (SC)** - Light greenish gray (GLEY1 3/10Y), moist, dense, fine grained, containse traces of shell fragments, -HCL	
UD 3			24		185		SAA except light greenish gray (GLEY1 5/5GY) and dark greenish gray (GLEY1 3/5GY), moist to wet	Direct Push
				29.9				
SS 38		20-27-29			190		**SAND, with silt (SP-SM)** - Very dark greenish gray (GLEY1 3/10Y), very dense, fine grained, contains some CLAY seams	
				19.9	195			
SS 39		10-50/6"	12		200		**CLAY, sandy (CL)** - Dark greenish gray (GLEY1 4/10Y), moist, hard, medium plasticity, fine grained SAND, -HCL	
				9.9	205			
SS 40		26-50/6"	10		210		**SAND, clayey (SC)** - Very dark greenish gray (GLEY1 3/5GY), moist, very dense, fine grained, rounded, -HCL	Water level depth at end of 1/23/07 = 18.0 feet
				-1.1	215			
					220			Top of Congaree

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3002(DH)**

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	5 OF 5	B-3002(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
						Formation at a depth of 220.0 feet
SS 41	50/3"	2		225	**SAND (SP)** - Light greenish gray (GLEY1 7/10Y), wet, very dense, coarse grained, sub-rounded, -HCL	
			-10.1	230		
SS 42	50/4"	4		235	**SAND, with silt (SP-SM)** - Greenish gray (GLEY1 6/10Y), wet, very dense, medium to coarse grained, sub-rounded, -HCL	
			-20.1	240		
			-24.6		**NO RECOVERY**	
UD 4	50/5"	0			**SAND (SP)** - Greenish gray (GLEY1 6/10Y to 5/10Y), wet, very dense, medium to coarse grained, sub-rounded, -HCL	Direct Push
SS 43		3		245		
			-28.1			
SS 44	20-30-50/5"	17	-31.0		**SAND, with silt (SP-SM)** - Light greenish gray (GLEY1 7/10Y), moist, very dense, fine to coarse grained, -HCL Boring terminated at 249.92 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3002(DH)**

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GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	B-3002A

LOGGED BY	COORDINATES	BEGUN	COMPLETED
A. Taylor	N 1142597.9 E 621878.8	1/17/2007	1/17/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	CME-850	5 Inches	X02958	21.5

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET (218.8)	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
						5, 10		STRAIGHT AUGER BORING FROM 0' TO 13.5' BORING PERFORMED FOR SPT ENERGY TESTING ONLY	
SS 1	☒	▲	12-14-18	16	205.3	15		**SAND (SP)** - Red (10R 4/6), dry, dense, medium grained	
SS 2	☒	▲	12-16-16	18	198.8	20		SAA except red (10R 4/6) and reddish yellow (5YR 7/6)	
SS 3	☒	▲	15-29-44	14	197.3			**SAND, with silty clay (SP-SC)** - Red (10R 4/6) and reddish yellow (5YR 7/6), dry, very dense, fine to medium grained Boring Terminated at 21.5 feet	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3002A

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 5	B-3003(DH)

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1142599.9 E 621727.3	11/27/2006	2/7/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	250.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.3	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.3			
SS 1	8-18-12	15	218.0		**GRAVEL, silty (GP-GM)** - Bed of roadway	Top of Fill at a depth of 0.0 feet
			216.8		**SAND (SP)** - Red (2.5YR 5/8), dry, medium dense	
SS 2	10-13-10	12				
			215.0		***SAND, clayey (SC)** - Red (2.5YR 5/8), dry, medium dense, contains CLAY seams	Top of Barnwell Group at a depth of 1.5 feet
SS 3	8-12-13	9			***SAND, silty (SM)** - Red (2.5YR 4/D), dry, medium dense	
				5		
SS 4	12-8-12	10			SAA except yellowish red (5YR 5/8)	
SS 5	3-5-12	6			SAA	
				10		
SS 6	10-10-10	12			SAA	Water level depth at beginning of 11/28/06 = Borehole dry
SS 7	11-11-11	9			SAA except red (2.5YR 4/6)	
				15		
SS 8	12-15-27	10			SAA except dense	
				20		
SS 9	12-15-17	10			SAA except very pale brown (10YR 8/3) to brown (10YR 5/3), fine to medium grained	
				25		
SS 10	12-15-17	10			SAA	
				30		
			186.3			
SS 11	6-7-8	17			***SILT, sandy (ML)** - Mottled pale yellow (2.5Y 8/3) and reddish yellow (7.5YR 6/8), dry, stiff	
				35		
			181.3			
SS 12	6-8-11	12			***SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/4), dry, medium dense	
				40		
SS 13	10-9-8	14			SAA except yellow (10YR 7/6)	
				45		
SS	4-8-12	18			SAA	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3003(DH)

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 5	B-3003(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	12-20-10	11		55	SAA	
			161.3			
SS 16	10-20-10	18		60	*SAND, silty (SM) - Very pale brown (10YR 7/3), damp, dense	
SS 17	8-9-11	15		65	SAA except yellow (10YR 8/6), moist	
			151.8		SAND (SP) - Very pale brown (10YR 8/4), moist, dense, contains shell hash	Top of Utley Limestone at a depth of 66.5 feet
SS 18	25-16-16	17		70		
			146.3			
SS 19	10-15-16	18		75	SAND, clayey (SP-SC) - Very pale brown (10YR 8/4), moist, dense, contains shell hash	
			141.3			
SS 20	50/4"	4		80	GRAVEL, silty (GM) - Very pale yellow (2.5Y 8/3), wet, very dense, GRAVEL sized shell fragments	
SS 21	50/2"	2		85	SAA	Loss of circulation at a depth of 83.0 feet
			129.8			
SS 22	15-16-16	18		90	*SILT (MH) - Dark greenish gray (GLEY1 4/5GY), hard	Top of Blue Bluff Marl at a depth of 88.5 feet
SS 23	2-7-12	18		95	SAA except very stiff	
			121.3			Installed 6" steel casing to a depth of 98.0 feet. Casing installed by Graves Drilling. End logging by M. Harvey. Begin logging by M. Herrera.
UD 1		0		100	NO RECOVERY	
			116.3			
UD 2		27		105	*CLAY (CL) - Greenish gray (GLEY1 5/10Y), wet, hard, contains shell fragments, +HCL Pocket Penetrometer: >4.5 TSF	End drilling by Warren-MACTEC. Begin drilling by Burnett-Gregg Drilling with a Froste XDML,

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3003(DH)**

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 5	B-3003(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
UD 3		21		110	SAA except greenish gray (GLEY1 6/10Y)	hammer serial #X02958 Pitcher Pitcher Pitcher
			106.3			
SS 24	12-50/6"	12		115	***GRAVEL, clayey with sand (GC)** - Light greenish gray (GLEY1 7/10Y), wet, very dense, low plasticity, contains shell fragments, +HCL	
			101.3			
SS 25	44-50/1"	7		120	***CLAY, with sand (CL)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, contains shell fragments, +HCL	
SS 26	19-31-26	18		125	SAA except low plasticity	Water level depth at end of 1/30/07 = Ground surface
SS 27	14-15-25	18		130	SAA except medium plasticity	Water level depth at beginning of 1/31/07 = 10.0 feet
UD 4		29		135	SAA except light greenish gray (GLEY1 7/10Y)	Pitcher
SS 28	15-23-22	18		140	SAA except greenish gray (GLEY1 6/10Y) to light olive gray (5Y 6/2), low plasticity	
SS 29	23-50/6"	9		145	SAA except light greenish gray (GLEY1 7/10Y) to light gray (5Y 7/2)	
			71.3			
UD 5		28.5		150	***CLAY (CH)** - Light greenish gray (GLEY1 7/10Y) to light gray (5Y 7/2), damp, hard, high plasticity	Pitcher
			66.3			Top of Still Branch Formation at a depth of 152.0 feet
SS 30	16-30-32	16		155	**SAND, clayey (SC)** - Very dark greenish gray (GLEY1 3/10Y), moist, very dense, fine grained, -HCL	
				160		
UD		20			SAA except greenish gray (GLEY1 6/10Y)	Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3003(DH)**

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 5	B-3003(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
6				165		Water level depth at end of 1/31/07 = Ground surface
			49.3			Water level depth at beginning of 2/5/07 = 18.0 feet
				170		
SS 31	9-15-26	18		175	**SAND, with silt (SP-SM)** - Very dark greenish gray (GLEY1 3/10Y), moist, dense, fine grained, rounded, -HCL	
			39.3			
				180		
SS 32	8-30-35	18		185	**SAND, silty (SM)** - Very dark greenish gray (GLEY1 3/10Y), moist, very dense, fine grained, rounded, -HCL	
				190		
SS 33	8-18-27			195	SAA except dark greenish gray (GLEY1 4/10Y), dense	Water level depth at end of 2/5/07 = Ground surface
			19.3			Water level depth at beginning of 2/6/07 = 17.5 feet
				200		
SS 34	35-50/3"	7		205	**SAND, with silt (SP-SM)** - Greenish gray (GLEY1 5/10Y), moist, very dense, medium grained, rounded, -HCL	
				210		
UD 7		24			SAA except fine to medium grained	Pitcher
			3.3	215	**CLAY (CL)** - White (GLEY1 8/N), damp, hard, medium plasticity, -HCL	Top of Congaree Formation at a depth of 215.0 feet
				220		

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3003(DH)**

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GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 5 OF 5	HOLE NO. B-3003(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 35	X	12-35-50/5"	17		225		SAA except white (GLEY1 8/N) to light greenish gray (GLEY1 8/10Y), dry	
					230			
SS 36	X	10-22-30	18		235		SAA except red (10R 5/6) and light red (10R 7/6)	
				-20.7	240			
SS 37	X	14-22-24	18		245		**CLAY, silty (CL-ML)** - Pale red (10R 7/3), white (GLEY1 8/N), and light greenish gray (GLEY1 8/10Y), dry, hard, -HCL	Water level depth at end of 2/6/07 = Ground surface
SS 38	X	10-20-25	18	-31.7	250		SAA except red (10R 5/6) and white (GLEY1 8/N), damp Boring terminated at 250 feet	Water level depth at beginning of 2/7/07 = 16.5 feet

SITE	Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-3003(DH)

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3004

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1142447.4 E 621867.1	2/28/2007	3/3/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Bilbrey-MILLER DRILLING	CME-85	6 Inches	270256	160.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.5			
SS 1	3-16-22	16			**GRAVEL, with sand (GP)** - Brown (7.5YR 5/3), damp, dense, angular, GRAVEL parking area	Top of Fill at a depth of 0.0 feet
SS 2	11-10-10	18	216.4		SAA	Top of Barnwell Group at a depth of 2.1 feet
SS 3	11-13-9	15		5	***SAND, clayey (SC)** - Red (2.5YR 5/6), damp, medium dense, very fine grained, nonplastic	
SS 4	8-11-12	17			SAA SAA except moist	
SS 5	7-14-14	16		10	SAA	
SS 6	8-12-11	17			SAA	
SS 7	9-11-11	17		15	SAA except fine to medium grained, subrounded	
			201.5			
SS 8	8-9-12	18		20	**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), moist, medium dense, very fine grained, nonplastic	
SS 9	5-12-18	14		25	SAA except yellow (10YR 7/6), damp, dense	
			191.5			
SS 10	3-9-11	15		30	**SAND, with clay (SP-SC)** - Reddish yellow (7.5YR 6/6), moist, medium dense, very fine grained, contains 1" CLAY lenses	
			186.5			
SS 11	2-2-5	18		35	***SAND, clayey (SC)** - Yellow (10YR 7/6), moist, loose, low toughness, very fine grained, low plasticity, contains trace dark organics	
SS 12	3-3-4	17		40	SAA except no organics	
			176.5			
SS 13	4-2-4	18	174.5	45	**SAND, with clay (SP-SC)** - Yellow (10YR 7/6), moist, loose, very fine grained, nonplastic **CLAY (CL)** - Yellow (10YR 7/6), moist, medium stiff, low plasticity	
			171.5			
SS	3-8-7	17			***SAND, clayey (SC)** - Pale yellow (2.5Y 8/4), moist, medium dense, very fine grained,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3004

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3004

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					nonplastic, contains iron staining	
SS 15	8-8-8	16		55	SAA except pale yellow (10YR 8/4)	
			161.5			
SS 16	10-10-14	15		60	**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), wet, medium dense, very fine grained, nonplastic	
			156.5			
SS 17	WOR/6"-WOH/1	18		65	**CLAY, with sand (CL)** - Pale yellow (5Y 8/3), moist, very soft, low plasticity, low toughness, contains very fine SAND lenses	Loss of circulation at a depth of 63.5 feet
SS 18	1-2-4	18		70	SAA except pale yellow (5Y 8/2), medium stiff, contains trace shells, +HCL	
			146.5			
SS 19	6-7-7	18		75	**SAND, with clay (SP-SC)** - Pale yellow (5Y 8/2), moist, medium dense, very fine grained, nonplastic, +HCL	Water level depth at end of 2/28/07 = 65.0 feet Water level depth at beginning of 3/2/07 = 63.0 feet
			140.5			Top of Utley Limestone at a depth of 78.0 feet
SS 20	50/1"	0		80	**NO RECOVERY**	
SS 21	50/0"	0		85	**NO RECOVERY**	
			132.1			Top of Blue Bluff Marl at a depth of 86.4 feet
SS 22	3-7-18	18		90	***SILT (MH)** - Light yellowish brown (2.5Y 8/2) and dark greenish gray (GLEY1 4/5GY), moist, very stiff, high plasticity, +HCL	
UD 1		30		95	SAA except dark greenish gray (GLEY1 4/5GY), damp, high toughness, contains cemented marl Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher
SS 23	50/4"	4		100	SAA except greenish gray (GLEY1 5/5GY), moist, hard	
SS 24	18-41-37	18		105	SAA except medium toughness	
			111.5			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3004**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3004

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	50/.5"	0.5	109.5	110	**GRAVEL, with clay (GP-GC)** - Greenish gray (GLEY1 5/5GY), dry, very dense, angular, nonplastic, +HCL	
UD 2		16		115	***SILT (MH)** - Greenish gray (GLEY1 5/5GY), moist, hard, high plasticity, +HCL	Pitcher
SS 26	17-31-50/3"	15		120	SAA	
SS 27	50/3"	3		125	SAA except greenish gray (GLEY1 5/10Y), damp	
SS 28	50/2"	2		130	SAA except contains angular cemented marl	Water level depth at end of 3/2/07 = Ground surface
SS 29	22-37-50/1"	13		135	SAA except light olive gray (5Y 6/2), moist	Water level depth at beginning of 3/3/07 = Ground surface
SS 30	22-31-40	18		140	SAA	
SS 31	18-37-50/1"	13		145	SAA	
SS 32	12-17-21	18		150	SAA	
SS 33	13-15-22	18		155	SAA except light gray (5Y 7/2), contains trace angular cemented marl	Changed from a 5 7/8 inch to a 2 7/8 inch drilling bit.
			61.5			Top of Still Branch Formation at a depth of 157.0 feet
SS 34	32-41-39	15	58.5	160	**SAND, with clay (SP-SC)** - Very dark greenish gray (GLEY1 3/5GY), wet, very dense, fine grained, nonplastic, -HCL Boring terminated at 160 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3004**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3005

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1142717.6 E 621749.1	2/9/2007	2/13/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	6 Inches	337153	155.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.2			
SS 1	2-3-4	18	217.7		**SAND, silty (SM)** - Yellowish red (5YR 5/8), dry to moist, loose, fine grained, contains wood	Top of Barnwell Group at a depth of 0.0 feet
SS 2	5-12-14	15.5	216.0		**CLAY, silty (CL-ML)** - Red (10R 4/8), dry to damp, very stiff	
SS 3	4-7-11	17.5		5	**SAND, clayey (SC)** - Red (2.5YR 4/8), dry to damp, medium dense, contains CLAY seams	
SS 4	9-12-17	16			SAA	
SS 5	10-18-18	15.5		10	SAA except red (2.5YR 5/8), dense	
SS 6	11-16-19	15	208.2		***SAND, silty (SM)** - Red (2.5YR 4/8), dry to damp, dense, contains CLAY seams	
SS 7	7-12-15	15		15	SAA except strong brown (7.5YR 5/8), medium dense	
SS 8	8-10-11	14		20	SAA except red (2.5YR 4/8), dry to damp, fine to medium grained, contains CLAY lenses	
			197.2			
SS 9	8-12-15	11		25	***SAND, clayey (SC)** - Yellowish red (5YR 5/8), damp, medium dense, fine to medium grained, contains CLAY lenses	
SS 10	10-12-11	9		30	SAA except strong brown (7.5YR 5/8)	
			187.2			
SS 11	6-6-7	14		35	**CLAY, silty with sand (CL-ML)** - Yellowish brown (10YR 5/8), dry to damp, stiff, contains SAND seams	
SS 12	4-5-6	15		40	SAA except brownish yellow (10YR 6/8)	
SS 13	3-5-6	17		45	SAA except yellowish brown (10YR 5/6)	
			172.2			
SS	5-8-7	12			***SAND, with silt (SP-SM)** - Brownish yellow (10YR 5/8), damp, medium dense, fine to	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3005

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3005

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					medium grained, low plasticity	
			167.2			
SS 15	2-3-4	18		55	**CLAY, silty (CL-ML)** - Olive yellow (2.5Y 6/6), dry to damp, medium stiff, low plasticity, -HCL	
			162.2			
SS 16	4-8-8	15		60	**SAND, clayey (SC)** - Light yellowish brown (10YR 6/4), damp, medium dense, fine grained, low plasticity	
SS 17	8-14-19	10		65	SAA except light yellowish brown (10YR 6/6), dense, fine to medium grained, contains SAND and CLAY seams, -HCL	
			152.2			
SS 18	3-3-4	18		70	**CLAY, silty (CL-ML)** - Olive yellow (2.5Y 6/6), dry to damp, medium stiff, low plasticity, contains SAND seams, -HCL	
SS 19	3-4-5	18		75	SAA except pale yellow (5Y 7/3)	
			142.2			
SS 20	6-6-6	17		80	**SAND, clayey (SC)** - Olive gray (5Y 4/2), damp, medium dense, fine to medium grained, low plasticity, contains CLAY seams, -HCL	Reamed borehole to 75.0 feet
			137.2			Top of Utley Limestone at a depth of 82.0 feet
SS 21	50/1"	0.5		85	**SAND, clayey (SC)** - Pale yellow (5Y 8/4), damp, very dense, fine to medium grained, low plasticity, contains shell fragments and trace phosphate grains, +HCL	
			132.2			Top of Blue Bluff Marl at a depth of 87.0 feet
SS 22	50/2"	2		90	**CLAY, silty, (CL-ML)** - Greenish gray (GLEY1 5/10GY), damp, hard, contains trace shell fragments and phosphate grains, +HCL	Water level depth at end of 2/9/07 = Top of Casing
UD 1		9		95	SAA except greenish gray (GLEY1 4/10GY to 4/10Y)	Pitcher Water level depth at beginning of 2/12/07 = 44.0 feet
				100		
			117.2			
SS 23	109 9-13-15	18		105	***SILT (MH)** - Greenish gray (GLEY1 5/10GY), damp, hard, contains trace shell fragments and phosphate grains, +HCL	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3005**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3005

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 24	50/5"	5		110	SAA except greenish gray (GLEY1 5/5GY), dry to damp	
UD 2		10.5		115	SAA except greenish gray (GLEY1 4/10GY), damp, contains cemented SAND with limestone	Pitcher Water level depth at end of 2/12/07 = Top of Casing
UD 3		23		120	SAA except greenish gray (GLEY1 6/5GY)	Pitcher Water level depth at beginning of 2/13/07 = 32.0 feet
SS 25	50/2"	2	97.2	125	***CLAY, with sand (CH)** - Greenish gray (GLEY1 5/10Y, damp, hard, contains trace shell fragments and phosphate grains, +HCL	
SS 26	13-50/6"	12		130	SAA except greenish gray (GLEY1 5/5GY)	
SS 27	18-17-19	18		135	SAA	
UD 4		28.5	82.2	140	***CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5G to 5/5GY), damp, hard, contains trace shell fragments, +HCL	Pitcher
SS 28	9-17-50/5"	17		145	SAA except greenish gray (GLEY1 7/10Y), dry to damp, contains fine grained SAND traces	
SS 29	12-15-14	18	68.7	150	SAA except very stiff	Top of Still Branch Formation at a depth of 150.5 feet
SS 30	22-27-30	14	64.2	155	**SAND, silty (SM)** - Very dark greenish gray (GLEY1 3/10Y), damp to moist, very dense, fine grained, -HCL Boring terminated at 155 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3005**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3006

LOGGED BY	COORDINATES	BEGUN	COMPLETED
A. Reimer	N 1142425.6 E 621925.0	11/30/2006	12/7/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Christian-MACTEC	CME-75	3 Inches	200587	155.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
217.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			217.6			
SS 1	5-16-12	7			**SAND AND GRAVEL** - presence of roots	Top of Fill at a depth of 0.0 feet
			216.1			
SS 2	7-21-25	12	215.1		**SAND, silty (SM)** - Dark red (2.5YR 3/6), dry, dense, nonplastic, medium grained	Top of Barnwell Group at a depth of 1.5 feet
SS 3	6-10-23	15		5	**SAND, silty, clayey (SC-SM)** - Strong brown (7.5YR 4/6), dry, dense, nonplastic, fine to medium grained SAA except red (2.5YR 4/6) SAA	
SS 4	10-14-21	17				
SS 5	8-15-18	16		10	SAA except dry to moist	
SS 6	9-15-16	13.5			SAA except dry	Installed casing to a depth of 10.0 feet Water level depth at end of 11/30/06 = Ground surface
SS 7	8-14-16	14		15	SAA	Water level depth at beginning of 12/01/06 = 3 feet
SS 8	7-10-15	13		20	SAA except medium dense	
			195.6			
SS 9	8-12-17	14.5		25	***SAND, silty (SM)** - Strong brown (7.5YR 5/6), damp, medium dense, nonplastic, fine to coarse grained, contains strong brown (7.5YR 5/6) clay lenses	
			190.6			
SS 10	6-10-11	16		30	**SAND, silty, clayey (SC-SM)** - Yellowish brown (10YR 5/6), damp, very stiff, nonplastic	
SS 11	6-8-9	15		35	SAA except yellow (10YR 6/6), dry to damp, medium dense, fine to medium grained	
			180.6			
SS 12	3-6-10	14		40	**CLAY, with sand (CL)** - Light yellowish brown (10YR 6/6), moist, very stiff, nonplastic	Water level depth at end of 12/1/06 = Ground surface
			175.6			
SS 13				45	**SAMPLE NOT TAKEN**	Water level depth at beginning of 12/5/06 = 39.8 feet
			170.6			
SS	4-8-8	17			***SAND, with silty clay (SP-SC)** - Brownish yellow (10YR 6/6) and yellowish red (5YR	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3006

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 3	HOLE NO. B-3006

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					5/6), damp, medium dense, nonplastic, fine to coarse grained, slightly lignitic	
SS 15	7-12-18	16.5		55	SAA except brownish yellow (10YR 6/6) and yellow (10YR 8/6), -HCL	
SS 16	9-15-19	15		60	SAA except brownish yellow (10YR 6/6) and yellow (10YR 7/6), damp to moist, dense	
			155.6			
SS 17	3-4-7	18		65	**CLAY, sandy (CL)** - Pale yellow (2.5Y 8/3), damp to moist, stiff, low plasticity, fine to medium grained SAND, -HCL	
			150.6			
SS 18	8-14-16	18		70	**SAND, with silty clay (SP-SC)** - Pale yellow (2.5Y 8/2), damp, medium dense, nonplastic, contains shell fragments, fine to medium grained, +HCL	
			145.6			
SS 19	6-9-23	18		75	**CLAY, silty (CL-ML)** - Pale yellow (2.5Y 8/2), damp, hard, nonplastic, contains shell fragments, +HCL	Water level depth at end of 12/5/06 = Ground surface
			139.1			
SS 20	50/2"	1		80	**CLAY, silty (CL-ML)** - Pale yellow (2.5Y 8/2), damp to moist, hard, nonplastic, contains shell fragments, +HCL	Water level depth at beginning of 12/6/06 = 64.75 feet Top of Utley Limestone at a depth of 78.5 feet Advanced casing to a depth of 15.0 feet
SS 21	12-50/4"	10		85	SAA except pale yellow (2.5Y 8/2 and 8/4) and olive yellow (2.5Y 6/6), moist	
			129.6			
SS 22	12-26-50/5"	12		90	***SILT, with sand (MH)** - Greenish gray (GLEY1 5/5GY), dry, hard, contains sandy and cemented layers, +HCL	Top of Blue Bluff Marl at a depth of 88 feet
SS 23	29-35-50	18		95	SAA	
SS 24	16-36-38	18		100	SAA except contains shell fragments	
			115.6			
SS 25	15-17-27	18		105	***SILT (MH)** - Greenish gray (GLEY1 5/5GY), dry, hard, contains sandy and cemented layers, +HCL	

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-3006

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3006

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	50/3"	3		110	SAA	
SS 27	19-26-36	18		115	SAA	
SS 28	28-50/2"	8		120	SAA	
SS 29	6-50/5"	10		125	SAA	
			90.6			Water level depth at end of 12/6/06 = Ground surface
SS 30	15-50/3"	9		130	***CLAY (CL)** - Greenish gray (GLEY1 6/10Y), dry, hard, nonplastic, contains sandy and cemented layers, +HCL	Water level depth at beginning of 12/7/06 = 70.25 feet
SS 31	11-12-23	18		135	SAA	
SS 32	16-22-26	18		140	SAA	
			75.6			
SS 33	45-38-50/5"	17		145	***GRAVEL, clayey with sand (GC)** - Greenish gray (GLEY1 6/10Y), dry to damp, very dense, nonplastic, contains sandy and cemented layers, +HCL	
SS 34	9-12-13	18		150	SAA except contains shell fragments	
			65.6			Top of Still Branch Formation at a depth of 152 feet
SS 35	29-33-37	18	62.6	155	**SAND, silty (SM)** - Very dark greenish gray (GLEY1 3/5GY), damp, very dense, nonplastic, fine to medium grained, -HCL Boring terminated at 155 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3006**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3007

LOGGED BY	COORDINATES	BEGUN	COMPLETED
A. Reimer	N 1142718.5 E 621876.7	11/15/2006	11/29/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Christian-MACTEC	CME-75	3 Inches	200587	159.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.8			
SS 1	6-9-10	10	219.8		**GRAVEL**	Top of Fill at a depth of 0.0 feet. Top of Barnwell Group at a depth of 1.0 feet.
SS 2	8-10-12	12.5			**SAND, silty (SM)** - Red (10R 4/8), dry, medium dense, fine to medium grained, non-plastic	
SS 3	12-13-12	15			SAA except mottled with light red (10R 6/6) SAND	
				5	SAA	
SS 4	11-12-16	12			SAA	
SS 5	7-7-9	14		10	SAA except red (2.5 YR 4/6), dry to damp, fine to coarse grained, low plasticity	
SS 6	6-8-9	14			SAA except red (2.5 YR 4/6) and yellowish brown (10YR 5/8), damp	
SS 7	8-5-9		206.3	15	SAA	
			203.8		**SAND, silty, clayey (SC-SM)** - Red (2.5 YR) and yellowish brown (10YR 5/8), mottled, damp, medium dense, fine to medium grained, low plasticity	
SS 8	12-14-17	14		20	***SAND, silty (SM)** - Reddish yellow (7.5YR 6/8) and light yellow brown (10YR 7/8), damp, dense, fine to coarse grained, subrounded, non-plastic, lignitic, calcareous mineralization	
SS 9	7-6-8	12		25	SAA except brown (7.5YR 5/6), medium dense, contains 1/2" thick clay lenses	
			193.8			
SS 10	1-2-4	17.5		30	**CLAY, sandy (CL)** - Light brown (10YR 7/6), damp, loose, fine grained, low plasticity	
			188.8			
SS 11	4-5-7	18		35	**SAND, silty, clayey (SC-SM)** - Light yellowish brown (10YR 7/6), damp to moist, medium dense, fine to medium grained, low to moderate plasticity	
SS 12	6-4-3	15	181.8		SAA	
				40	**CLAY (CH)** - Light yellowish brown (10YR 6/6), moist, loose, medium plasticity	
			178.8			
SS 13	3-4-5	18		45	***SAND, with silty clay (SP-SC)** - Light yellowish brown (10YR 7/6), moist, loose, low plasticity, very fine to fine grained	
SS	7-6-7	15.5			SAA except medium dense, fine to medium grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3007

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3007

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			168.8			
SS 15	15-40-47	13.5		55	**SAND (SP)** - Brownish yellow (10YR 6/6) and tan (2.5Y 8/4), damp, very dense, fine to coarse grained, subrounded, non-plastic, slightly lignitic	
			162.8			
SS 16	3-4-19	18		60	**SAND, with clay (SP-SC)** - Light tan (12.5Y 8/2) and light yellowish brown (2.5Y 7/6), damp, fine to medium grained, contains shell fragments	Top of Utley Limestone at a depth of 58.0 feet.
			158.8			
SS 17	9-17-15	18	154.8	65	**CLAY, silty, sandy with gravel (CL-ML)** - Light brown/tan (2.5YR 8/2), moist, hard, contains shell fragments up to 1" in diameter	
SS 18	6-9-18	18		70	**CLAY, silty with sand (CL-ML)** - Light brown/tan (2.5YR 8/2), moist, very stiff, contains shell fragments up to 0.2" in diameter	
SS 19	14-21-21	16		75	SAA except light brown/tan (2.5YR 8/2) and pink (10R 8/2), mottled, damp to moist, hard, contains shell fragments < 0.1" in diameter	Water level depth at end of 11/15/2006 = Ground surface
SS 20	27-10-50/4"	4		80	SAA except damp, contains pebble size shell fragments	Water level depth at beginning of 11/16/2006 = 32.74 feet
			138.8			Loss of approximately 100 gallons of drilling fluid during drilling between depths of 75.0 and 80.0 feet. Reamed hole and installed 4 inch casing to a depth of 80.0 feet.
SS 21	50/3"	0	134.3	85	**NO RECOVERY**	Lost 450 gallons of drilling fluid during casing installation.
SS 22	20-34-50/4"	16		90	**SILT, with sand (ML)** - Greenish gray (GLEY1 5/5GY), dry, hard, non-plastic	Loss of approximately 80 gallons of drilling fluid at a depth of 88.5 feet.
			128.8			Top of Blue Bluff Marl at a depth of 86.5 feet.
SS 23	12-21-20	18		95	***SILT (MH)** - Greenish gray (GLEY1 5/5GY), dry to damp, hard	Added an additional 5 feet of casing. Bottom of casing now at a depth of 85.0 feet. Water level depth at end of 11/16/2006 = Ground surface
SS 24	16-18-19	18		100	SAA except contains shell fragments < 0.25" in diameter	Lost approximately 60 gallons of drilling fluid during drilling between depths of 86.5 and 93.5 feet.
SS 25	50/1"	1		105	SAA	Water level depth at beginning of 11/27/2006 = 67.0 feet. Water level depth at end of 11/27/2006 =
			113.8			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3007**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3007

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	12-18-22	18.		110	*CLAY (CH) - Greenish gray (GLEY1 5/5GY), dry to damp, hard	Ground surface Water level depth at beginning of 11/28/2006 = 57.33 feet
			108.8			
SS 27	50/2"	1.5		115	SILT, with sand (CL-ML) - Greenish gray (GLEY1 5/5GY), dry, hard, contains cemented layers and shell fragments <0.25" in diameter, non-plastic to low plasticity	
			103.8			
SS 28	26-18-42	18		120	SILT (ML) - Greenish gray (GLEY1 6/10Y), dry, hard, cemented, contains shell fragments <0.25" in diameter, calcareous mineralization, non-plastic to low plasticity	
SS 29	7-10-14			125	SAA except, dry to damp, very stiff, contains shell fragments < 0.1" in diameter	
			93.8			
SS 30	10-50/3"	9		130	SILT, with sand (ML) - Greenish gray (GLEY1 6/10Y), dry to damp, hard, non-plastic	Loss of circulation at a depth of 131.0 feet. Lost approximately 120 gallons of drilling fluid.
SS 31	50/4.5"	4.5		135	SAA except contains shell fragments < 0.1" in diameter	Obtained good fluid return at a depth of 133.0 feet.
SS 32	12-12-22	18		140	SAA except does not contain shell fragments, +HCL	Loss of approximately 80 gallons of drilling fluid from depths of 141.0 to 142.5 feet.
SS 33	18-37-35	18		145	SAA	Loss of approximately 50 gallons of drilling fluid from depths of 145.0 to 147.0 feet.
			73.8			
SS 34	11-12-21	18		150	CLAY, silty with sand (CL-ML) - Greenish gray (GLEY1 7/10Y), damp, hard, low plasticity, +HCL	
SS 35	12-18-31	18		155	SAA except non-plastic to low plasticity	Water level depth at end of 11/28/2006 = Ground surface
			63.3			Top of Still Branch at a depth of 157.5 feet.
SS 36	26-48-50/4"	16	61.0		SAND, silty (SM) - Very dark greenish gray (GLEY1 3/5GY), moist, very dense, fine to medium grained, well graded, contains traces of CLAY Boring terminated at 159.83 feet.	Water level depth at beginning of 11/29/2006 = 59.6 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3007**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3008

LOGGED BY	COORDINATES	BEGUN	COMPLETED
A. Reimer	N 1142425.4 E 621773.0	11/8/2006	11/14/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Christian-MACTEC	CME-75	3 Inches	200587	155.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
217.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			217.9			
SS 1	10-17-20	16	216.7		**GRAVEL**	Top of Fill at a depth of 0.0 feet. Top of Barnwell Group at a depth of 1.2 feet.
SS 2	26-28-25	15.5			***SAND, clayey (SC)** - Red (10R 4/6), dry, dense, fine to medium grained, non-plastic	
SS 3	10-11-12	13		5	SAA except low to medium plasticity, contains traces of CLAY	
SS 4	7-11-14	16			SAA except low plasticity	
SS 5	6-9-12	15		10	SAA except red (10R 5/8), fine to coarse grained, medium dense	
SS 6	6-11-13	15.5	204.9		SAA except damp, medium dense, fine grained, non-plastic	
SS 7	6-13-14	15		15	**SILT, sandy (ML)** - Red (10R 5/8), damp, very stiff, lignitic, calcareous mineralization	
SS 8	7-11-16	13	198.9	20	SAA except moist, stiff, low to medium plasticity, contains traces of CLAY	
					***SAND, with silt (SP-SM)** - Light red (2.5YR 7/8), damp, medium dense, fine grained, non-plastic	
SS 9	7-7-5	11		25	SAA reddish brown (7.5YR 5/8), moist, fine to medium grained, slightly lignitic	Water level depth at end of 11/8/2006 = Ground surface
			190.9			
SS 10	3-3-5	14		30	***SAND, clayey (SC)** - Light reddish brown (2.5Y 6/6), damp, loose, fine grained, low plasticity	Water level depth at beginning of 11/9/2006 = 24.0 feet
			185.9			
SS 11	3-4-8	14		35	**SAND, silty, clayey (SC-SM)** - Light brown (10YR 7/6), moist, medium dense, low to moderate plasticity, fine to very fine grained	
SS 12	3-4-8	17		40	SAA except damp, low plasticity, contains calcareous shell fragments	
SS 13	2-3-3	18		45	SAA except loose, fine grained	
			170.9			
SS	5-8-10	14			**SAND, silty (SM)** - Light brown (10YR 7/6), damp, medium dense, fine to medium grained,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3008

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3008

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					non-plastic, well graded, slightly lignitic	
			165.9			
SS 15	7-11-19	14.5		55	***SAND, with clay (SP-SC)** - Light brown (10YR 7/6), damp, dense, medium to coarse grained, subrounded, non-plastic, slightly lignitic	
			160.9			
SS 16	6-7-8	17		60	***SAND, clayey (SC)** - Light brown (10YR 7/6), damp to moist, medium dense, contains shell fragments	
			156.9		**SAND, silty, clayey (SC-SM)** - Light tan to white (2.5YR 8/2), damp, coarse grained, subrounded, contains shell fragments	
SS 17	1/1.2'-19/0.3	18	153.9	65	**CLAY, silty (CL-ML)** - Light brown (2.5YR 8/2), and pink (10R 8/2), mottled, damp to moist, very stiff, medium plasticity	
			150.9			
SS 18	11-11-17	18		70	**CLAY, with sand (CL)** - Light brown (2.5YR 8/3), damp, very stiff, contains fine to medium grained SAND, contains shell fragments	
SS 19	9-12-19	18		75	SAA except light brown (2.5Y 8/4), contains very fine to fine SAND	
SS 20	5-50/4"	9		80	SAA except hard, 50% of sample is comprised of shell fragments	Loss of circulation and approximately 25 gallons of drilling fluid at a depth of 80 feet. Continued drilling and lost 125 additional gallons of drilling fluid.
SS 21	11-18-9	16		85	SAA except light brown (2.5YR 7/4), contains very fine to fine SAND, low plasticity	Installed casing to a depth of 85 feet.
			130.9			Water level depth at end of 11/9/2006 = Ground surface
SS 22	17-50/5"	11		90	**SILT, with sand (ML)** - Greenish gray (GLEY1 5/5GY), dry to damp, hard, contains very fine to fine SAND, non-plastic	Top of Blue Bluff Marl at a depth of 87.0 feet.
			125.9			Water level depth at beginning of 11/10/2006 = 10.64 feet
SS 23	14-50/2"	8		95	***SILT (MH)** - Greenish gray (GLEY1 5/5GY), dry to damp, hard, contains fine grained SAND	
SS 24	16-16-22	18		100	SAA except greenish gray (GLEY1 6/10Y)	
SS 25	50/2"	2		105	SAA except contains shell fragments 0.5" in diameter	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3008**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3008

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	22-19-50/2"	14		110	SAA	
SS 27	50/3"	3		115	SAA	Water level depth at end of 11/10/2006 = Ground surface
SS 28	50/5"	5		120	SAA	Water level depth at beginning of 11/14/2006 = 50.1 feet
SS 29	13-22-50/4"	16		125	SAA	
SS 30	36-50/5"	11		130	SAA except greenish grey (GLEY1 7/10Y)	
SS 31	11-23-32	18		135	SAA	
SS 32	12-17-22	18		140	SAA except greenish grey (GLEY1 6/10Y), contains fine grained SAND	
SS 33	16-21-42	18		145	SAA	
SS 34	7-11-20	18		150	SAA except very stiff	
			65.9			Top of Still Branch at a depth of 152.0 feet.
SS 35	22-31-35	15	62.9	155	**SAND, silty, clayey (SC-SM)** - Light greenish gray (GLEY1 8/5GY) and greenish grey (GLEY1 6/5G), damp, very dense, fine to medium grained Boring terminated at 155 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3008**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3009

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1142484.5 E 621956.6	12/7/2006	12/13/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	4 Inches	211797	153.9

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
217.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			217.9			
SS 1	6-7-8	18			***SAND, silty (SM)** - Red (2.5YR 4/6), dry, medium dense	Top of Barnwell Group at a depth of 0.0 feet
SS 2	14-12-12	18			SAA except red (2.5YR 5/8)	
SS 3	7-7-8	12		5	SAA except red (2.5YR 4/8)	
SS 4	13-12-12	15			SAA	
SS 5	7-9-10	12		10	SAA except red (2.5YR 4/6)	
SS 6	8-6-5	15			SAA except red (10R 4/6), fine to coarse grained	
SS 7	6-7-9	12		15	SAA	
SS 8	10-10-9	9		20	SAA except brown (7.5YR 5/8), dry, medium dense	
			195.9			
SS 9	10-10-12	9		25	***SAND, with silt (SP-SM)** - Brown (7.5YR 5/8), dry, medium dense	
SS 10	5-7-8	10		30	SAA except brownish yellow (10YR 6/6)	
SS 11	4-5-6	15		35	SAA except pale yellow (2.5Y 7/4), damp	
SS 12	6-7-7	11		40	SAA	
			175.9			
SS 13	2-3-5	15		45	***SAND, silty (SM)** - Brownish yellow (10YR 6/8), moist, loose	
SS	10-12-15	7			SAA except yellow (2.5Y 7/6), -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3009

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3009

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	20-20-15	8		55	SAA except yellow (10YR 8/8), wet, dense	
SS 16	10-10-12	6		60	SAA except very pale brown (10YR 8/4), medium dense	
SS 17	8-28-20	18	154.4	65	**GRAVEL, clayey (GC)** - White (5Y 8/1), moist, dense, gravel consists of shell hash, +HCL	
SS 18	7-12-15	18	150.9	70	**SAND, silty (SM)** - Pale yellow (2.5Y 8/2), damp, medium dense, contains shell hash, +HCL	
SS 19	8-10-15	18	145.9	75	**SAND (SP)** - Pinkish white (7.5YR 8/2), moist to wet, medium dense, fine grained	
SS 20	50/6"	6	140.9	80	**GRAVEL, silty (GM)** - Pale yellow (2.5Y 7/4), wet, very dense, +HCL	Top of Utley Limestone at a depth of 77.0 feet Water level depth at end of 12/07/06 = Ground surface
SS 21	50/5"	5	135.9	85	**SILT (ML)** - Pale olive (5Y 6/3), damp, hard, +HCL	
SS 22	50/4"	4	129.4	90	***CLAY, with sand (CH)** - Greenish gray (GLEY1 5/5GY), damp, hard, +HCL	Top of Blue Bluff Marl at a depth of 88.5 feet
SS 23	15-15-20	18		95	SAA	
SS 24	50/4"	4		100	SAA	
SS 25	12-14-15	18		105	SAA except very stiff	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3009**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3009

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	⊠	50/5"	5		110		SAA except hard	Water level depth at end of 12/12/06 = Ground surface
SS 27	⊠	50/3"	3		115		SAA except greenish grey (GLEY1 5/1/10Y)	Water level depth at beginning of 12/13/06 = 10 feet
SS 28	⊠	50/5"	5		120		SAA	
SS 29	⊠	50/4"	4		125		SAA	
				90.9				
SS 30	⊠	10-12-14	18		130		***CLAY, sandy (CL)** -Greenish gray (GLEY1 6/1/10Y), damp, very stiff, +HCL	
SS 31	⊠	20-20-20	18		135		SAA except hard	
SS 32	⊠	50/4"	4		140		SAA	
SS 33	⊠	13-16-24	18		145		SAA	
				69.4				
SS 34	⊠	50/3"	0		150		**NO RECOVERY**	Top of Still Branch Formation at a depth of 148.5 feet
				65.9				
SS 35	⊠	50/5"	5	63.9			**SAND (SP)** - Very dark gray (GLEY1 3/N), wet, very dense, -HCL Boring terminated at 153.92 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3009**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3010

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1142634.9 E 622025.0	3/3/2007	3/5/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Bilbrey-MILLER DRILLING	CME-85	6 Inches	270256	160.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.7			
SS 1	1-4-5	8	219.5		**GRAVEL**	Top of Fill at a depth of 0.0 feet
SS 2	7-10-12	16			***SAND, clayey (SC)** - Red (2.5YR 5/6), moist, loose, fine grained, nonplastic, contains trace organics	Top of Barnwell Group at a depth of 0.2 feet
SS 3	8-14-15	18		5	SAA except medium dense SAA except red (2.5YR 5/8), very fine grained	
SS 4	9-15-18	17			SAA except dense	
SS 5	6-9-11	17		10	SAA except medium dense	
SS 6	6-9-11	16			SAA	
SS 7	12-12-10	18		15	SAA	
			202.7			
SS 8	9-10-12	16		20	**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/6), medium dense, medium grained, nonplastic, subrounded	Water level depth at end of 3/3/07 = Ground surface
SS 9	8-10-14	12		25	SAA	Water level depth at beginning of 3/4/07 = Borehole dry
			192.7			
SS 10	4-8-11	18		30	**SAND, with clay (SP-SC)** - Yellow (10YR 7/6), moist, medium dense, very fine grained, nonplastic	
			187.7			
SS 11	2-4-6	16		35	**CLAY, with sand (CL)** - Yellow (10YR 7/6), moist, stiff, very fine grained, low plasticity	
SS 12	6-5-5	18	180.4		SAA	
				40	**SAND, with clay (SP-SC)** - Yellow (2.5Y 7/6), moist, medium dense, fine grained, nonplastic	
			177.7			
SS 13	2-1-1	18		45	**CLAY, with sand (CL)** - Yellow (2.5Y 7/6), moist, soft, very fine grained, low plasticity, low toughness	
SS	WOR/6"-6-7	18	170.1		SAA except stiff	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3010

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3010

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					**SAND, with clay (SP-SC)** - Pale yellow (2.5YR 7/4), moist, medium dense, fine grained, nonplastic	
SS 15	12-14-17	17		55	SAA except moist to wet, dense	
			162.7			
SS 16	9-15-14	15		60	**SAND, with silt (SP-SM)** - Pale yellow (10YR 7/4), wet, medium dense, fine grained, nonplastic	
SS 17	2-WOH/12"	18	155.9	65	SAA **CLAY (CL)** - Pale yellow (5Y 8/3), moist, very soft, low to medium plasticity	
SS 18	1-WOH/6"-1	18		70	SAA except low plasticity	
			147.7			
SS 19	1-3-2	18		75	**SAND, with clay (SP-SC)** - Pale yellow (5Y 8/3), moist, loose, very fine grained, nonplastic	
			143.7			Top of Utley Limestone at a depth of 76.0 feet
SS 20	50/1"	0		80	**NO RECOVERY**	
			137.7			Loss of circulation at a depth of 82.0 feet
SS 21	50/1"	1		85	**GRAVEL, with clay (GP-GC)** - Pale yellow (5Y 8/4), moist, very dense, angular, nonplastic, gravel consists of shells, +HCL	
			133.7			Top of Blue Bluff Marl at a depth of 86.0 feet
SS 22	50/1"	1		90	**GRAVEL, with clay (GP-GC)** - Dark greenish gray (GLEY1 4/5GY), damp, very dense, angular, nonplastic, gravel consists of shells, +HCL	Return of circulation at a depth of 90.0 feet
			127.7			
SS 23	17-17-23	18		95	**CLAY (CL)** - Greenish gray (GLEY1 5/5GY), moist, hard, low plasticity, medium toughness, contains trace of shells, +HCL	
			122.7			
SS 24	50/0"	0		100	**NO RECOVERY**	
			117.7			Water level depth at end of 3/4/07 = 3.0 feet
UD 1		24		105	SAA	Water level depth at beginning of 3/5/07 = 18.0 feet Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3010**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3010

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	50/2"	0.1		110	SAA except damp	
SS 26	1-27-50/3"	15	102.7	115	SAA except greenish gray (GLEY1 6/5GY)	Loss of circulation at a depth of 113.0 feet
SS 27	50/5"	5		120	***CLAY, sandy (CL)** - Greenish gray (GLEY1 6/5GY), moist, hard, low plasticity, contains angular GRAVEL, +HCL	
SS 28	50/5"	5	92.7	125	SAA	
UD 2		13		130	**CLAY (CL)** - Greenish gray (GLEY1 6/5GY), moist, hard, low plasticity, contains angular GRAVEL, +HCL Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Changed from a 5 7/8 inch to a 2 7/8 inch drilling bit Pitcher
SS 29	13-23-31	18		135	SAA except greenish gray (GLEY1 5/10Y)	
SS 30	1-27-50/4"	16	77.7	140	SAA	
SS 31	17-22-28	18		145	***CLAY, sandy (CL)** - Greenish gray (GLEY1 6/5GY), moist, hard, low plasticity, +HCL	
SS 32	16-19-25	18		150	SAA	
SS 33	18-22-33	18	62.7	155	SAA	
SS 34	8-12-16	3	59.7	160	**SAND, with clay (SP-SC)** - Gray (5Y 6/1), wet, medium dense, very fine to medium grained, nonplastic, -HCL Boring terminated at 160 feet	Top of Still Branch Formation at a depth of 157.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3010**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-3011

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1142776.7 E 622024.9	1/10/2007	1/15/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	165.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.6			
SS 1	4-8-12	10	219.1		**CLAY, sandy (CL)** - Red (2.5YR 4/6), dry, very sitff	Top of Barnwell Group at a depth of 0.0 feet
SS 2	8-10-13	10	217.3		**SAND (SP)** - Red (2.5YR 4/8), dry, medium dense	
SS 3	10-20-25	14		5	**SAND, silty (SM)** - Red (2.5YR 4/8), dry, dense	
SS 4	11-20-21	14			SAA	
SS 5	10-17-21	15		10	SAA	
SS 6	13-21-26	14			SAA except red (10R 4/8)	
SS 7	10-20-20	12		15	SAA	
SS 8	10-12-17	12		20	SAA except red (2.5YR 4/8), damp, medium dense, fine to medium grained	Water level depth at end of 1/10/2007 = Ground surface
SS 9	5-12-12	12		25	SAA except yellowish red (5YR 5/8)	Water level depth at beginning of 1/11/2007 = Borehole dry. Boring caved to a depth of 22 feet. Installed casing to a depth of 27.5 feet.
SS 10	13-14-9	9		30	SAA	
SS 11	5-8-8	15		35	SAA except brownish yellow (10YR 6/8), dry	
			183.6			
SS 12	8-8-8	16		40	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), damp, medium dense	
SS 13	4-5-8	18		45	SAA	
SS	6-8-12	11			SAA except yellow (10YR 7/8)	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3011

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-3011

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			168.6			
SS 15	3-3-5	18		55	**CLAY, sandy (CL)** - Yellow (2.5Y 7/6), damp, medium stiff	
			163.6			
SS 16	11-13-14	13		60	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/2), damp, medium dense	
			158.6			
SS 17	16-20-14	5		65	**SAND (SP)** - Pale red (10R 7/2), wet, dense, -HCL	
			153.6			
SS 18	3-2-2	18		70	**CLAY, sandy (CL)** - Pale yellow (2.5Y 7/4), moist, medium stiff, -HCL	
			148.6			
SS 19	5-6-8	18		75	**CLAY (CL)** - Yellow (2.5Y 7/4), moist, stiff, -HCL	
SS 20	10-11-13	18	141.1		SAA except olive grey (5Y 5/2), wet, very stiff	
				80	**GRAVEL, silty (GM)** - Pale yellow (5Y 8/2), wet, medium dense, gravel consists of shell hash, +HCL	
SS 21	16-16-7	6		85	SAA	
			133.6			Loss of circulation at a depth of 86.0 feet. Advanced casing to a depth of 88.5 feet. Later advanced casing to a depth of 92.0 feet. Top of Utley Limestone at a depth of 87.0 feet. Top of Blue Bluff Marl at a depth of 92.0 feet.
SS 22	28-50/1"	7		90	**CLAY, with gravel (CL)** - Pale yellow (2.5Y 8/3), hard, +HCL	
			128.6			
SS 23	11-13-19	18		95	**CLAY (CL)** - Pale olive (5Y 6/3) and greenish grey (GLEY1 5/1/10GY), damp, hard, +HCL	
SS 24	50/1"	1		100	SAA except greenish grey (GLEY1 5/1/10GY), contains shell hash	Loss of circulation at a depth of 96.0 feet. Advanced casing to 97.0 feet.
			118.6			
SS 25	17-19-22	18		105	**CLAY, with sand (CL)** - Greenish grey (GLEY1 5/1/10GY), hard, contains traces of shell hash, +HCL	Water level depth at end of 1/11/2007 =
			113.6			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3011**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-3011

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
						Ground surface
SS 26	17-26-50/1"	13		110	**CLAY (CL)** - Dark greenish grey (GLEY1 4/1/10Y), moist, hard, contains traces of shell hash, +HCL	
SS 27	26-50/1"	7		115	SAA	
SS 28	26-31-41	18		120	SAA except greenish grey (GLEY1 5/1/10Y)	Loss of circulation at a depth of 117.0 feet.
SS 29	36-50/1"	7		125	SAA	
SS 30	50/1"	1		130	SAA except moist to wet	
SS 31	27-50/1"	7		135	SAA except greenish grey (GLEY1 6/1/10Y), moist	
SS 32	21-25-26	13		140	SAA	
SS 33	26-36-42	18		145	SAA	Water level depth at end of 1/12/2007 = 65.0 feet
SS 34	17-38-50/2"	14		150	SAA	
SS 35	41-47-50/3"	15		155	SAA	
SS 36	13-32-50/1"	13		160	SAA	
			58.6			Top of Still Branch Formation at a depth of 162.0 feet.
SS	13-32-50/1"	8			**SAND, silty (SM)** - Very dark greenish grey	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3011**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 4 OF 4	HOLE NO. B-3011

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
37	X				56.0	165		(GLEY1 3/1/10Y), wet, very dense, -HCL Boring terminated at 164.58 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-3011

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GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3012

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Gandy	N 1142772.5 E 621911.9	11/15/2006	11/27/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	CME-850	3 Inches	165952	159.3

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.4	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.4			
SS 1	3-18-18	18			**SAND, silty (SM)** - Red (10R 4/8), dry, dense, nonplastic, contains thin veneer of fill at surface	Top of Barnwell Group at a depth of 0.0 feet
SS 2	12-14-17	18			SAA except does not contain fill	
SS 3	10-7-7	15	216.3		SAA except light brown (7.5YR 6/4), moist, medium dense	
				5	**CLAY (CL)** - Red (10R 4/8), damp, stiff, medium plasticity	
SS 4	7-11-13	18			SAA except dry, very stiff, low plasticity, slightly lignitic	
			212.4			
SS 5	10-13-12	18		10	**SAND, clayey (SC)** - Red (10R 4/8), damp, medium dense, low plasticity	
SS 6	12-15-18	18			SAA except red (10R 5/8), dense	
SS 7	14-14-19	16		15	SAA	
			203.4			
SS 8	7-10-12	14		20	**SILT (ML)** - Red (10R 4/8), dry, very stiff, low plasticity	
			198.4			
SS 9	6-5-7	17		25	**SAND, clayey (SC)** - Red (10R 5/8), damp, medium dense, contains minor clay-rich seams	
SS 10	7-10-13	16		30	SAA	Water level depth at end of 11/15/06 = 30.0 feet
SS 11	6-6-7	18		35	SAA except reddish yellow (7.5YR 6/8), low plasticity, contains minor clay seams	
SS 12	5-8-9	14		40	SAA except contains 2" wide clay seam	
			178.4			
SS 13	5-8-8	18		45	**SILT, with sand (ML)** - Reddish yellow (7.5YR 7/8) and light brown (7.5YR 6/4), damp to moist, very stiff, low to medium plasticity, contains minor calcareous deposits	
			173.4			
SS	5-5-6	10.5			**SAND, clayey (SC)** - Reddish yellow (7.5YR 6/8), moist, medium dense, medium grained,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-3012

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3012

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					low plasticity	
			168.4			
SS 15	2-2-4	18		55	**CLAY (CL)** - Pale yellow (2.5Y 7/4), damp, medium stiff, medium plasticity	
			163.4			
SS 16	9-12-14	14		60	**SAND, with silt (SP-SM)** - Yellow (10YR 7/8), moist, medium dense, medium grained, nonplastic	
SS 17	5-8-9	15		65	SAA except yellow (10YR 7/6), wet	
			153.4			
SS 18	2-1-2	18		70	**SAND, clayey (SC)** - Pale yellow (2.5Y 7/4), damp, very loose, fine grained, medium plasticity	
			148.4			
SS 19	1-1-1	18		75	**SAND, silty, clayey (SC-SM)** - Very pale brown (10YR 7/4), damp, very loose, fine grained, low plasticity	Water level depth at end of 11/16/06 = 75.0 feet
			143.4			
SS 20	WOH/6"-1-2	18		80	**SAND, clayey (SC)** - Very pale brown (10YR 7/4), moist, very loose, fine grained, low plasticity	Water level depth at beginning of 11/17/06 = 36.4 feet
SS 21	1-1-2	18		85	SAA except slightly lignitic	
			133.4			Top of Blue Bluff Marl at a depth of 87.0 feet
SS 22	50/1"	0		90	**NO RECOVERY**	Advanced casing to 90.0 feet
			128.4			
SS 23	10-12-16	18		95	**SILT (ML)** - Greenish gray (GLEY1 5/1), dry, very stiff, low plasticity	End logging by C. Gandy. Begin logging by M. Cooke.
SS 24	42-18-18	18		100	SAA except dry to moist, hard, low to medium plasticity, contains traces of SAND and shell hash	
SS 25	12-50/5"	11		105	SAA except very stiff	Water level depth at end of 11/17/06 =

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3012**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3012

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	9-13-16	18		110	SAA except medium plasticity	10.0 feet End logging by M. Cooke. Begin logging by C. Gandy. Water level depth at beginning of 11/27/06 = 22.4 feet
SS 27	15-15-50/1"	13		115	SAA except hard	
SS 28	50/4"	4		120	SAA	
SS 29	9-9-24	18		125	SAA except damp	
SS 30	12-50/4"	10		130	SAA except low plasticity	
SS 31	10-26-35	18		135	SAA except medium plasticity	
SS 32	8-13-30	18		140	SAA	
SS 33	13-20-19	18		145	SAA except greenish gray (GLEY1 6/1), dry to damp	
SS 34	18-34-26	18		150	SAA except slightly lignitic	
SS 35	9-10-12	18		155	SAA except damp, very stiff, contains traces of shell hash	
			63.4			Top of Still Branch Formation at a depth of 157.0 feet
SS 36	30-50/4"	10	61.1		**SAND, silty (SM)** - Very dark gray (2.5Y 3/1), damp, dense, fine grained, nonplastic to low plasticity Boring terminated at 159.33 feet	Water level depth at end of 11/27/06 = 10.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3012**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3013(C)

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1142842.9 E 621825.4	2/13/2007	3/7/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	6 Inches	337153	155.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.5			
SS 1	2-4-7	18			**SAND, silty (SM)** - Red (2.5YR 4/8), dry to damp, medium dense, fine grained, low plasticity, contains trace organics	Top of Barnwell Group at a depth of 0.0 feet
SS 2	6-12-13	16			SAA except no organics	
SS 3	9-22-21	12			SAA except dark yellowish brown (10YR 4/6), dense	
			215.0	5		
SS 4	4-4-7	14			**SAND, clayey (SC)** - Yellowish brown (10YR 5/6), dry to damp, medium dense, fine grained, low plasticity	
SS 5	10-15-20	14		10	SAA except red (2.5YR 4/8), dense, fine to medium grained	
SS 6	17-19-21	16.5			SAA except red (2.5YR 5/8)	
SS 7	13-17-17	16		15	SAA except red (2.5YR 4/8)	
SS 8	12-16-22	18			SAA except damp	
SS 9	9-12-13	15		20	SAA except medium dense	
SS 10	8-13-11	16			SAA except red (2.5YR 5/8)	Water level depth at end of 2/13/07 = Ground surface
			197.5			
SS 11	7-10-14	12		25	**SAND, with silt (SP-SM)** - Red (2.5YR 5/8), damp, medium dense, fine to medium grained, low plasticity	
SS 12	8-10-10	12			SAA	
SS 13	9-11-13	16		30	SAA except red (2.5Y 4/8), contains CLAY seams	
SS 14	8-8-8	12			SAA except strong brown (7.5YR 5/8)	
SS 15	9-9-9	17.5			SAA except brownish yellow (10YR 6/8)	
			185.0	35		
SS 16	8-8-8	17			**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), damp, medium dense, fine to medium grained, low plasticity	
			182.5			
SS 17	4-6-9	18		40	**CLAY, sandy (CL)** - Brownish yellow (10YR 6/8), dry to damp, stiff, low plasticity, fine grained SAND, contains trace phosphate grains	
SS 18	4-7-9	18			SAA	
			177.5			
SS 19	6-9-9	12		45	**SAND, with clay (SP-SC)** - Red (2.5YR 5/8), damp, medium dense, fine grained, low plasticity	
SS 20	5-7-9	14			SAA except yellowish red (5YR 5/8)	
SS	5-5-7	14			SAA except brownish yellow (10YR 6/6)	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-3013(C)

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GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3013(C)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
21 SS 22	4-4-7	15.5	170.0		**SAND, clayey (SC)** - Yellowish red (5YR 5/8), damp, medium dense, fine grained, low plasticity	
SS 23	4-7-9	15.5		55	SAA except red (10R 5/8), contains trace phosphate grains	
SS 24	5-7-13	11	162.5		SAA	
SS 25	8-11-14	10.5	160.0	60	**SAND, with silt (SP-SM)** - Strong brown (7.5YR 5/6), damp, medium dense, fine to medium grained, low plasticity	
SS 26	2-1/12"	15			**SAND, clayey (SC)** - Pale yellow (5Y 8/3), damp, very loose, fine grained, low plasticity, contains trace phosphate grains	Loss of circulation at a depth of 62.0 feet
SS 27	WOH/18"	17		65	SAA	
SS 28	WOH/6"-3-3	17			SAA except loose, contains CLAY seams	
SS 29	2-8-12	17		70	SAA except pale yellow (5Y 8/2), medium dense	
SS 30	7-9-11	12			SAA except pale yellow (5Y 7/3)	
SS 31	7-7-10	12.5		75	SAA	
SS 32	7-8-9	18	142.5		SAA except pale olive (5Y 6/4)	
SS 33	20-18-10	8	140.0	80	**CLAY, silty with sand (CL-ML)** - Olive (5Y 4/4), damp, very stiff, low plasticity, contains shell fragments and calcareous cemented SAND, +HCL	Loss of circulation at a depth of 78.75 feet
SS 34	18-12-18	18	137.5		**SAND, clayey (SC)** - Pale yellow (5Y 7/3), damp, dense, contains many shell fragments and calcareous cemented SAND with trace phosphate grains, +HCL	Top of Utley Limestone at a depth of 83.0 feet
SS 35	30-50/2"	8	135.0	85	**SAND, clayey (SC)** - Pale yellow (5Y 7/3), damp,very dense, contains many shell fragments and calcareous cemented SAND with trace phosphate grains, +HCL	Top of Blue Bluff Marl at a depth of 85.5 feet
SS 36	3-5-10	18			**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), dry to damp, stiff, low plasticity, contains trace shell fragments, +HCL	
SS 37	10-13-16	18		90	SAA except dark greenish gray (GLEY1 4/10Y)	
			128.5			Water level depth at end of 2/14/07 = Ground surface
SS 38	50/3"	3	125.0	95	**SAND, clayey (SC)** - Light greenish gray (GLEY1 8/10Y), damp, very dense, fine to medium grained, low plasticity, contains shell fragments, +HCL	Installed 6" steel casing to a depth of 93.0 feet (installed by Graves Drilling)
SS 39	32-23-32	18			***SILT (MH)** - Dark greenish gray (GLEY1 4/10GY), dry to damp, hard, low plasticity, contains cemented SAND and trace shell fragments and phosphate grains, +HCL	
UD 1		7		100	SAA except damp, no phosphate grains Pocket Penetrometer: >4.5 TSF	Pitcher
UD 2		30			SAA Pocket Penetrometer: >4.5 TSF	Pitcher
SS 40	7-9-14	18		105	SAA except dry to damp	
SS	50/6"	6			SAA except no cemented SAND	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3013(C)**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3013(C)

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
41						
SS 42	50/3"	3		110	SAA except with cemented SAND	
SS 43	23-29-24	18			SAA	
SS 44	7-25-50/3"	15		115	SAA	
SS 45	6-50/2"	8	102.5		SAA	
UD 3		10.5		120	**GRAVEL (GP)** - Greenish gray (GLEY1 6/5GY), dry, hard, contains cemented SAND and limestone, +HCL	Water level depth at end of 3/6/07 = Top of casing
UD 4		21	99.5		Pocket Penetrometer: >4.5 TSF	Pitcher Pitcher
SS 46	50/5"	5		125	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), dry to damp, hard, low plasticity, contains GRAVEL cemented seam in bottom, trace shell fragments, and phosphate grains, +HCL SAA	Water level depth at beginning of 3/7/07 = 38.5 feet
SS 47	11-12-16	18			SAA except very stiff	
SS 48	12-16-18	18		130	SAA except hard	
SS 49	12-40-27	18			SAA	
SS 50	12-16-15	18		135	SAA	
SS 51	10-16-29	18			SAA except no seams	
SS 52	12-17-25	18		140	SAA	
SS 53	7-18-19	18			SAA	Loss of circulation at a depth of 141.0 feet
SS 54	40-50/4"	10		145	SAA	
SS 55	9-9-16	18			SAA except very stiff	
SS 56	7-8-7	18	70.0	150	SAA	
SS 57	9-28-30	18			**SAND, clayey (SC)** - Very dark greenish gray (GLEY1 3/10Y), damp, very dense, fine grained, low plasticity, contains trace shell fragments, -HCL	Top of Still Branch Formation at a depth of 150.5 feet
SS 58	17-35-28	18	65.5	155	SAA Boring terminated at 155 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3013(C)**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3014

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1142799.4 E 621748.6	2/7/2007	2/13/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg	Froste MDXL	3 Inches	X02958	158.7

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.3	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.3			
SS 1	9-11-9	18			**SAND, with silt (SP-SM)** - Contains debris	Top of Fill at a depth of 0.0 feet
SS 2	9-6-11	9			SAA	
			217.0			
SS 3	3-2-4	0			**NO RECOVERY**	
			214.8	5		
SS 4	4-4-10	8	213.3		**GRAVEL (GP)**	
			212.3		**CLAY (CL)** - Yellowish red (5Y 5/8) and pale yellow (5Y 8/3), damp, stiff	Top of Barnwell Group at a depth of 7.0 feet
SS 5	8-8-10	14		10	**SAND, with clay (SP-SC)** - Yellowish red (5YR 5/8), damp, medium dense, fine to medium grained, rounded	
SS 6	11-11-13	18			SAA except red (2.5YR 5/8) and reddish yellow (7.5YR 6/8)	
SS 7	13-15-18	18		15	SAA except red (2.5YR 5/8), dense	
			203.3			
SS 8	16-16-16	18		20	**SAND, with clay and gravel (SP-SC)** - Red (2.5YR 5/8), damp, dense, medium grained	
			198.3			
SS 9	15-12-10	18		25	**SAND (SP)** - Strong brown (7.5YR 5/8), wet, medium dense, coarse grained, sub-rounded	
			193.3			
SS 10	7-8-10	18		30	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), damp, medium dense, coarse grained, sub-rounded	Water level depth at end of 2/07/2007 = Ground surface
SS 11	6-8-7	17		35	SAA except light yellowish brown (10YR 6/4) to brownish yellow (10YR 6/6), moist, fine to medium grained	Water level depth at beginning of 2/08/2007 = 13.0 feet
			183.3			
SS 12	5-5-8	18		40	**CLAY, sandy (CL)** - Yellow (2.5Y 7/6 to 7/8), damp, stiff, low plasticity	
			178.3			
SS 13	8-9-9	10		45	**SAND, clayey (SC)** - Yellow (10YR 7/6), wet, medium dense, medium to coarse grained, sub-rounded, -HCL	
SS	3-4-5	18			SAA except moist, loose, fine grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3014

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3014

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			168.3			
SS 15	4-4-5	18		55	**CLAY, with sand (CL)** - Yellow (2.5Y 8/6), damp, stiff, low plasticity, -HCL	
			163.3			
SS 16	9-11-13	11		60	**SAND, with clay (SP-SC)** - Yellow (10YR 7/6), wet, medium dense, medium grrained, -HCL	
			158.3			
SS 17	4-5-5	18		65	**CLAY, with sand (CL)** - Yellow (2.5Y 7/6) and pale yellow (5Y 8/4), moist, stiff, medium plasticity, contains SAND lenses	
			153.3			
SS 18	10-22-14	18		70	**SAND, clayey (SC)** - Pale yellow (5Y 8/3), moist, dense, fine grained, -HCL	
			148.3			
SS 19	14-14-21	14		75	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/2), moist, dense, fine grained, -HCL	
SS 20	10-3-1	12		80	SAA except light grey (5Y 7/2) to pale yellow (5Y 7/3), very loose	
			139.3			Top of Utley Limestone at a depth of 81.0 feet. Loss of circulation at a depth of 81 feet
SS 21	6-9-9	2.5		85	**GRAVEL (GP)** - Pale yellow (5Y 8/3), consists of cemented shells, +HCL	
			132.3			
SS 22	10-16-24	18		90	**CLAY (CL)** - Greenish grey (GLEY1 6/1 to 5/1), damp, very stiff, medium plasticity, +HCL	Top of Blue Bluff Marl at a depth of 88.0 feet.
			128.3			
SS 23	16-18-22	18		95	**CLAY, with gravel (CL)** - Greenish grey (GLEY1 5/10Y), dry, very stiff, GRAVEL consists of shells, +HCL	
SS 24	15-17-50/4"	14		100	SAA except hard	Installed 4" steel casing to a depth of 100.0 feet Water level depth at end of 2/08/2007 = Ground surface
			118.3			
SS 25	10-14-16	18		105	**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 5/10Y), dry, very stiff, low plasticity, +HCL	
			113.3			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3014**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3014

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	14-50/6"	12		110	**CLAY (CL)** - Greenish grey (GLEY1 6/10Y), dry, hard, medium plasticity, +HCL	Water level depth at end of 2/12/2007 = 6.0 feet
SS 27	13-20-18	18		115	SAA except damp	Water level depth at beginning of 2/13/2007 = 23.0 feet
SS 28	32-23-44	18		120	SAA	
SS 29	32-50/5"	11		125	SAA except damp	
SS 30	13-12-18	18		130	SAA except light greenish grey (GLEY1 7/10Y) to greenish grey (GLEY1 6/10Y), very stiff	
SS 31	27-22-50/5"	17		135	SAA except hard	
SS 32	12-18-20	18		140	SAA	
SS 33	18-29-36	18		145	SAA	
SS 34	19-25-25	18		150	SAA except contains shell fragments	
			68.3			Top of Still Branch Formation at a depth of 152.0 feet.
SS 35	12-18-22	18		155	**SAND, with silt (SP-SM)** - Very dark greenish grey (GLEY1 3/10Y), moist, dense, fine grained, -HCL	
			63.3			
SS 36	50/3"	0	61.5		**NO RECOVERY** Boring terminted at 158.75 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	B-3014

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GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3015

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1142956.9 E 621824.0	2/13/2007	3/7/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	6 Inches	328848	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.8			
SS 1	2-4-6	18			**SAND, silty (SM)** - Red (2.5YR 4/6), damp, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	8-7-9	18			SAA	
SS 3	8-12-14	18			SAA	
			216.3	5		
SS 4	4-7-9	18			**SAND, clayey (SC)** - Yellowish brown (10YR 5/8), damp, medium dense, fine grained	
SS 5	5-13-15	18		10	SAA except red (2.5YR 4/8) and yellow (10YR 7/6)	
SS 6	8-12-13	18			SAA except red (2.5YR 4/8), fine to coarse grained	
			208.8			
SS 7	12-16-19	18		15	**SAND, silty (SM)** - Yellowish red (5YR 5/8), damp, dense, fine grained	
			204.8			
SS 8	6-9-15	18	202.3	20	**CLAY (CH)** - Yellow (10YR 7/8), damp, very stiff, high plasticity	
			199.8		**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), damp, medium dense, fine grained	
SS 9	6-8-8	18		25	**SAND, silty (SM)** - Brownish yellow (10YR 6/6), damp, medium dense, fine grained	
			194.8			
SS 10	5-5-7	18		30	**CLAY (CH)** - Yellow (2.5Y 7/6), damp, stiff, high plasticity, -HCL	
			189.8			
SS 11	4-5-10	18		35	**CLAY, sandy (CL)** - Olive yellow (2.5Y 6/6), damp, stiff, low plasticity	
			184.8			
SS 12	3-4-4	18		40	**SAND, silty, clayey (SC-SM)** - Yellow (2.5Y 7/6), damp, loose, fine grained	
SS 13	WOH/6"-2-3	18		45	SAA	
			174.8			
SS	WOH/6"-3-4	18			***SAND, with silt (SP-SM)** - Pale yellow (5Y 8/3), damp, loose, fine to medium grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3015

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3015

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	4-4-5	12		55	SAA except pale yellow (5Y 8/2)	
			164.8			
SS 16	WOR/18"	18		60	**SAND, silty, clayey (SC-SM)** - Pale yellow (5Y 8/4), damp, very loose, fine grained	Beginning to lose circulation at a depth of 59.0 feet
			159.8			
SS 17	WOR/18"	18		65	**CLAY (CL)** - Pale yellow (5Y 8/4), damp, very soft, low plasticity, contains 0.25" to 0.5" SAND seams, -HCL	
			154.8			
SS 18	8-9-10	3		70	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/3), damp, medium stiff, fine grained, -HCL	Loss of circulation at a depth of 70.0 feet
SS 19	10-12-12	18		75	SAA except yellow (5Y 7/6)	
SS 20	3-4-4	8		80	SAA except pale yellow (5Y 8/4), moist, loose	
SS 21	50/1"	1	137.0	85	**CLAY, sandy (CL)** - Pale olive (5Y 6/4), damp, hard, low plasticity, contains shells, +HCL	Top of Utley Limestone at a depth of 84.8 feet
			134.8			Top of Blue Bluff Marl at a depth of 87.0 feet
SS 22	16-14-16	18		90	**CLAY (CL)** - Dark greenish gray (GLEY1 4/10Y), damp, very stiff, low plasticity, +HCL	Water level depth at end of 2/14/07 = Ground surface
			129.3			
SS 23	50/1"	1		95	***SILT (MH)** - Greenish gray (GLEY1 5/5GY), damp, hard, high plasticity, +HCL	Water level depth at beginning of 3/5/07 = 32.0 feet End logging by S. Woodham. Begin logging by L. Davis.
SS 24	20-50/3"	9		100	SAA	Installed 6" steel casing to a depth of 95.0 feet
SS 25	22-50/5"	11		105	SAA except greenish gray (GLEY2 5/10Y)	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3015**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3015

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	50/4"	4		110	SAA except greenish gray (GLEY2 6/10Y), nonplastic	Water level depth at end of 3/5/07 = Top of casing
UD 1		6		115		Water level depth at beginning of 3/6/07 = 40.0 feet Pitcher
UD 1A		0				Pitcher
UD 1B		5	101.8	120		Pitcher
UD 1C		14			**CLAY, silty, (CL-ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, +HCL Pocket Penetrometer: >4.5 TSF	Pitcher
SS 27	19-50/5"	11		125	SAA except moist	
SS 28	8-13-27	18		130	SAA except light greenish gray (GLEY1 7/10Y)	
SS 29	11-13-11	18		135	SAA except greenish gray (GLEY1 6/10Y), very stiff	
SS 30	11-17-29	18		140	SAA except hard, low to medium plasticity	Water level depth at end of 3/6/07 = Top of casing
UD 2		14		145	SAA except light greenish gray (GLEY1 7/10Y), medium plasticity Pocket Penetrometer: >4.5 TSF	Water level depth at beginning of 3/7/07 = 35.0 feet Pitcher
SS 31	2-4-10	18	72.8 71.8	150	SAA except greenish gray (GLEY1 6/10Y), stiff, contains minor shell hash **CLAY, silty, sandy (CL-ML)** - Very dark greenish gray (GLEY1 3/5GY), moist, stiff, medium plasticity, -HCL Boring terminated at 150.0 feet	Top of Still Branch Formation at a depth of 149.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3015**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3016

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Brooks	N 1142978.4 E 621913.4	12/13/2006	12/21/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Christian-MACTEC	CME-75	3 Inches	200587	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.5			
SS 1	10-13-16	14			**SAND, silty (SM)** - Red (2.5YR 4/8), damp, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	14-16-20	13			SAA	
SS 3	4-17-19	14		5	SAA	
SS 4	9-19-20	16	214.5		SAA except yellowish brown (10YR 5/8)	
SS 5	3-4-8	18		10	**SAND, with clay (SP-SC)** - Yellowish red (5YR 5/8), medium dense, low plasticity, -HCL	
SS 6	10-12-17	16	209.5		SAA	
SS 7	8-14-19	15		15	**SAND (SP)** - Yellowish red (5YR 5/8), damp, dense, nonplastic	
			205.5			
SS 8	11-10-17	14		20	**SILT (ML)** - Yellowish red (5YR 5/8), damp, very stiff, nonplastic, -HCL	Installed 4" steel casing to a depth of 15.0 feet
			200.5			
SS 9	8-8-15	13		25	**CLAY, with sand (CL)** - Yellowish brown (10YR 5/8) and yellowish red (5YR 5/8), damp, very stiff, medium plasticity, -HCL	
			195.5			
SS 10	8-10-13	14		30	**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/8), damp, medium dense, -HCL	
			190.5			
SS 11	10-13-18	16		35	**SILT, sandy (ML)** - Brownish yellow (10YR 6/8), damp, hard, low plasticity, -HCL	
			185.5			
SS 12	4-6-7	18		40	**CLAY, with sand (CL)** Brownish yellow (10YR 6/8), damp, stiff, medium plasticity, -HCL	
			180.5			
SS 13	7-10-9	14		45	**SAND, with silt (SP-SM)** - Red (2.5YR 4/6), damp, medium dense, low plasticity, -HCL	
			175.5			
SS	5-7-10	15			**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), damp, medium dense, low plasticity, -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3016

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3016

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	6-9-16	13		55	SAA	
			165.5			
SS 16	10-14-20	14		60	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), damp, dense, fine grained, nonplastic, -HCL	
SS 17	5-11-11	14		65	SAA except light greenish gray (GLEY1 8/1)	Water level depth at end of 12/13/06 = 65.0 feet
SS 18	10-15-21	15		70	SAA except dense	Water level depth at beginning of 12/14/06 = 57.1 feet
			150.5			
SS 19	7-9-14	16		75	**SAND, with silty clay (SP-SC)** - Light greenish gray (10YR 7/1), damp, medium dense, low plasticity, -HCL	
SS 20	7-8-11	16			SAA	
			142.5	80		Losing drilling fluid Top of Utley Limestone at a depth of 80 feet.
SS 21	50/1"	0		85	**NO RECOVERY**	Advanced casing to a depth of 85.0 feet Water level depth at beginning of 12/15/06 = 34.75 feet
			134.0			
SS 22	10-33-26	18		90	**CLAY (CL)** - Gray (7.5YR 5/1), damp, hard, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 88.5 feet End drilling by Christian-MACTEC. Begin drilling by Warren-MACTEC with a CME-75, hammer serial #211797
SS 23	14-21-21	18		95	SAA except contains shell fragments	
SS 24	16-50/3"	9		100	SAA except greenish gray (GLEY2 5/1)	
SS 25	17-50/2"	8		105	SAA	
			115.5			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3016**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3016

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		50/1"	0		110		**NO RECOVERY**	
				110.5				
SS 27		22-23-38	18		115		**CLAY (CL)** - Greenish gray (GLEY2 5/1), damp, hard, low plasticity, +HCL	
SS 28		50/4"	3.5		120		SAA	
SS 29		50/5"	4		125		SAA	
SS 30		15-16-26	18		130		SAA	
SS 31		15-20-23	18		135		SAA	
SS 32		12-17-38	18		140		SAA	
SS 33		18-19-24	18		145		SAA	
				75.5				
SS 34		15-39-44	14	72.5	150		**CLAY, with sand (CL)** - Greenish gray (GLEY1 4/2), damp, hard, low plasticity, fine grained SAND, +HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3016**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3017

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1143034.4 E 621749.9	2/19/2007	2/20/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Bilbrey-MILLER DRILLING	CME-85	6 Inches	270256	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.1			
SS 1	1-1-1	17			**SAND, clayey (SC)** - Red (10R 4/6), moist, very loose, very fine grained, nonplastic, contains organics	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-3-9	16			SAA except red (10R 5/6), medium dense	
SS 3	10-16-15	14		5	SAA	
SS 4	12-18-22	18	215.6		SAA	
					***SAND, silty (SM)** - Yellowish brown (10YR 5/8), damp, dense, very fine grained, nonplastic, contains organics	
SS 5	9-10-7	17			SAA except medium dense, no organics	
			211.6	10		
SS 6	7-9-16	16			**CLAY, with sand (CL)** - Red (10R 4/8), moist, very stiff, low plasticity, low toughness, very fine grained SAND	
			209.1			
SS 7	9-10-17	15		15	***SAND, clayey (SC)** - Red (10R 4/8), moist, medium dense, very fine grained, nonplastic	
SS 8	10-14-18	18		20	SAA except red (2.5YR 5/8), dense, fine grained with some subrounded coarse grained	
			200.1			
SS 9	3-6-9	18		25	***SILT (MH)** - Olive yellow (2.5Y 6/8), damp, stiff, high plasticity, medium toughness	
			195.1			
SS 10	8-10-12	16		30	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), medium dense, fine to medium grained, nonplastic, contains trace CLAY lenses	
			190.1			
SS 11	5-6-8	18		35	**CLAY (CL)** - Yellow (2.5Y 7/6), moist, stiff, low plasticity, low toughness	
SS 12	3-3-5	18		40	SAA	
			180.1			
SS 13	3-4-6	18		45	**CLAY, with sand (CL)** - Yellow (2.5Y 7/6), moist, stiff, very fine grained, low plasticity, low toughness	
			175.1			
SS	1-2-4	16			**SILT (ML)** - Pale yellow (2.5Y 8/4), moist, loose, low plasticity, low toughness	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3017

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3017

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
			170.1			
SS 15	6-7-12	18		55	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 7/4), moist, medium dense, very fine grained, nonplastic	
			165.1			
SS 16	9-9-8	15		60	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/4), wet, medium dense, very fine grained, nonplastic	
			160.1			
SS 17	WOR/18"	16		65	**CLAY, with sand (CL)** - Pale yellow (2.5Y 7/3), moist, very soft, low plasticity, low toughness, very fine grained SAND	Loss of circulaton at a depth of 63.5 feet
SS 18	WOR/30"	22		70	SAA except pale yellow (2.5Y 8/4), wet	
			150.1			
SS 19	3-4-8	16		75	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/2), wet, medium dense, very fine grained, nonplastic	
SS 20	1-1-2	18		80	SAA except very loose	
			138.6			
SS 21	50/1"	1		85	**GRAVEL, with clay (GP-GC)** - Pale yellow (2.5Y 8/2), moist, very dense, angular, gravel consists of shells, +HCL	Top of Utley Limestone at a depth of 83.5 feet
			136.1			Top of Blue Bluff Marl at a depth of 86.0 feet
SS 22	10-13-16	18		90	***SILT (MH)** - Greenish gray (GLEY1 5/5GY), damp, very stiff, high plasticity, +HCL	Water level depth at end of 2/19/07 = 65.0 feet
UD 1		24		95	SAA	Pitcher Water level depth at beginning of 2/20/07 = 65.0 feet
SS 23	50/5"	5		100	SAA except hard	
SS 24	10-14-19	18		105	SAA except greenish gray (GLEY1 5/10Y)	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3017**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3017

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25		30-50/4"	8		110		SAA except greenish gray (GLEY1 5/5GY)	
UD 2			27		115		SAA Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher
SS 26		28-33-29	18		120		SAA	
SS 27		14-14-31	18		125		SAA except greenish gray (GLEY1 6/5GY), moist	
SS 28		12-13-22	18		130		SAA	
SS 29		13-14-20	18		135		SAA	
SS 30		15-16-28	18		140		SAA	
SS 31		13-50/3"	9		145		SAA	
SS 32		9-9-15	18	72.1	150		SAA Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3017**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3018

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1142738.1 E 622115.8	2/12/2007	3/9/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	155.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.8	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.8			
SS 1	1-8-11	16			**SAND, clayey (SC)** - Red (2.5YR 4/8), dry, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	13-18-20	17			SAA	
SS 3	12-16-15	18		5	SAA	
SS 4	7-9-11	18			SAA	
SS 5	11-10-11	18		10	SAA except red (2.5YR 5/8) and brownish yellow (2.5YR 6/8), damp	
SS 6	8-12-13	12			SAA except red (2.5YR 5/8)	
SS 7	12-13-14	15		15	SAA except fine to medium grained	
			202.8			
SS 8	8-11-12	14		20	**SAND, silty (SM)** - Yellowish red (5YR 5/8), damp, medium dense, fine grained	
SS 9	9-13-17	16		25	SAA	
SS 10	5-6-11	18		30	SAA except yellow (2.5Y 7/6), medium dense, fine grained	
			187.8			
SS 11	8-7-7	14		35	**CLAY, sandy (CL)** - Brownish yellow (10YR 6/6), damp, stiff, low plasticity, fine to medium grained SAND	
			182.8			
SS 12	4-4-7	13		40	**CLAY (CL)** - Light yellowish brown (2.5Y 6/4), damp, stiff, medium plasticity	
			177.8			
SS 13	4-6-8	16		45	**SAND, with silt (SP-SM)** - Yellow (2.5Y 7/6), damp, medium dense, fine grained	
			172.8			
SS	2-3-3	18			**CLAY, with sand (CL)** - Pale yellow (5Y 7/3), damp, medium stiff, low plasticity	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3018

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3018

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			167.8			Water level depth at end of 2/12/07 = Ground surface Top of Utley Limestone at a depth of 52.0 feet Loss of circulation at a depth of 52.0 feet Water level depth at beginning of 2/13/07 = 50.0 feet
SS 15	6-2-5	18	162.8	55	**CLAY, sandy (CH)** - Pale yellow (5Y 8/4), damp, medium stiff, medium to high plasticity, contains shell fragments, +HCL	
SS 16	7-13-13	12	157.8	60	**SAND (SP)** - Yellow (2.5Y 7/6), damp, medium dense, fine grained, -HCL	
SS 17	11-10-8	6	152.8	65	**CLAY, with sand (CH)** - Light yellowish brown (2.5Y 6/4), very stiff, medium to high plasticity, -HCL	
SS 18	2-3-4	18	147.8	70	**CLAY (CH)** - Pale yellow (2.5Y 7/3), stiff, high plasticity, -HCL	
SS 19	6-11-13	18	142.8	75	**CLAY, silty with gravel (CL-ML)** - Pale yellow (2.5Y 7/3), very stiff, low plasticity, contains shell fragments, +HCL	
SS 20	13-13-17	17	137.8	80	**GRAVEL, clayey (GC)** - Pale yellow (2.5Y 8/4), damp, dense, +HCL	
SS 21	4-9-20	18	132.8	85	**CLAY (CL)** - Pale olive (5Y 6/4), damp, very stiff, low plasticity, +HCL	
SS 22	13-15-16	18	126.8	90	**CLAY (CL)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 87.0 feet Water level depth at end of 2/16/07 = Ground surface Water level depth at beginning of 3/7/07 = 45.0 feet Installed 6" steel casing to a depth of 95.0 feet End logging by S. Woodham. Begin logging by L. Davis. Pitcher
UD 1		14		95	***SILT, sandy (MH)** - Greenish gray (GLEY1 5/5GY), damp, high plasticity, +HCL Pocket Penetrometer: >4.5 TSF SAA except greenish gray (GLEY2 5/10Y), hard	
SS 23	16-18-20	18		100		
SS 24	11-50/5"	11		105	SAA except greenish gray (GLEY1 5/10Y)	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3018**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3018

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	10-22-50/5"	17		110	SAA except greenish gray (GLEY1 6/10Y), contains shell hash	
			107.8			
UD 2		12		115	*SILT (MH) - Greenish gray (GLEY1 6/10Y), damp, hard, high plasticity, contains shell hash, +HCL Pocket Penetrometer: >4.5 TSF	Pitcher Water level depth at beginning of 3/8/07 = 42.0 feet
			102.8			
SS 26	11-11-50/4"	16		120	CLAY (CL) - Greenish gray (GLEY1 6/10Y), damp, hard, low to medium plasticity, +HCL	
SS 27	12-50/5"	11		125	SAA except low plasticity	
SS 28	35-22-30	18		130	SAA except medium plasticity	
			87.8			
SS 29	19-22-25	18		135	*CLAY, silty with sand (CL-ML) - Light greenish gray (GLEY1 7/5GY), damp, hard, nonplastic to low plasticity, +HCL	
SS 30	11-15-33	18		140	SAA except light greenish gray (GLEY1 7/10Y), low plasticity	
SS 31	10-11-10	18		145	SAA	
UD 3		15		150	SAA except greenish gray (GLEY1 5/10Y and 7/10Y), contains shell hash Pocket Penetrometer: 3.5 TSF	Pitcher
			67.8			
SS 32	22-26-32		65.8		SAND, silty (SM) - Gray (2.5Y 6/1), moist, very dense, medium grained, nonplastic, -HCL	Top of Still Branch Formation at a depth of 152.0 feet
			64.8	155	SAND, silty, clayey (SC-SM) - Very dark greenish gray (GLEY1 3/10GY), very dense, fine grained, low plasticity, +HCL Boring terminated at 155 feet	Water level depth at end of 3/8/07 = Top of casing

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3018**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3019

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1142977.4 E 622167.5	2/26/2007	3/8/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Melvin-MACTEC	CME-75	6 Inches	219505	153.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.4	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.4			
SS 1	2-16-18	14			**SAND, silty (SM)** - Red (2.5YR 5/8) to light gray (2.5Y 7/2), dry, medium dense	Top of Barnwell Group at a depth of 0.0 feet
SS 2	8-20-32	18			SAA except red (2.5YR 5/8) and yellow (7.5Y 7/8), damp, very dense	
SS 3	6-15-12	14		5	SAA except red (10R 4/8), dry, medium dense	
SS 4	9-9-11	6			SAA	
SS 5	10-13-11	14		10	SAA	
SS 6	10-19-22	14			SAA except dense	
SS 7	6-12-10	11		15	SAA except medium dense	
SS 8	10-12-12	14		20	SAA except red (2.5YR 5/8), damp	
			200.4			
SS 9	7-9-7	6		25	**SAND, with silt (SP-SM)** - Yellow (10YR 7/8), dry, medium dense	
SS 10	4-6-7	15		30	SAA	
			190.4			
SS 11	6-9-10	12		35	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/4), damp, medium dense	
			185.4			
SS 12	3-5-7	18		40	**CLAY (CL)** - Yellow (2.5Y 7/6), damp, stiff	Water level depth at end of 2/26/07 = Ground surface
			180.4			
SS 13	7-8-12	15		45	**CLAY, sandy (CL)** - Yellow (2.5Y 7/8), damp, very stiff	Water level depth at beginning of 2/27/07 = 21.0 feet
			175.4			
SS	7-8-10	8			**SAND, silty (SM)** - Yellow (10YR 7/6), dry, medium dense	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3019

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3019

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			170.4			
SS 15	2-3-7	18		55	**SILT (ML)** - Pale yellow (5Y 8/3), damp, stiff	
			165.4			
SS 16	6-18-20	8		60	**SAND (SP)** - Pale yellow (2.5Y 7/4), damp, dense	
			160.4			
SS 17	8-8-4	5		65	**SAND, with silt (SP-SM)** - Yellow (2.5Y 8/6), wet, medium dense	
			155.7			
SS 18	WOR/6"-WOH/6"	18		70	**SILT (ML)** - Yellow (2.5Y 7/6), damp, soft	
SS 19	WOR/18"	18		75	SAA except pale yellow (5Y 8/3)	Loss of circulation at a depth of 75.0 feet
			145.4			Top of Utley Limestone at a depth of 77.0 feet
SS 20	12-24-32	10		80	**GRAVEL, silty (GM)** - Pale yellow (2.5Y 8/3), wet, very dense, contains shells, +HCL	
SS 21	50/2"	2		85	SAA	
			135.7			Top of Blue Bluff Marl at a depth of 86.75 feet
SS 22	9-12-16	18		90	**CLAY (CL)** - Greenish gray (GLEY1 5/1/5GY), damp, very stiff, +HCL	
			130.4			
UD 1		24		95	**SILT (ML)** - Greenish gray (GLEY1 5/1/5GY), moist, hard, contains shell hash Pocket Penetrometer: >4.5 TSF	Installed 6" casing to a depth of 93.0 feet (casing installed by Graves Drilling) Pitcher
SS 23	23-50/4"	10		100	SAA	
			120.4			
SS 24	40-50/2"	5		105	**GRAVEL (GM)** - Greenish gray (GLEY1 5/1/5GY), very dense, contains shells	
			115.4			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3019**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3019

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	26-50/2"	2		110	***SILT (MH)** - Greenish gray (GLEY1 5/1/5GY), damp, hard, contains minor shell hash	
			110.4			
UD 2		10		115	**GRAVEL, silty (GM)** - Greenish gray (GLEY1 5/1/5GY), lithified Pocket Penetrometer: >4.5 TSF	Pitcher
UD 3		15		120	SAA Pocket Penetrometer: >4.5 TSF	Pitcher
			100.4			
SS 26	23-19-38	18		125	***CLAY (CH)** - Greenish gray (GLEY1 6/1/10Y), damp, hard, +HCL	
SS 27	50/2"	2		130	SAA except contains minor shell hash	
SS 28	9-12-18	18		135	SAA except no shell hash	
SS 29	20-16-30	18		140	SAA	
SS 30	9-29-23	18		145	SAA	
			74.4			
SS 31	13-19-40	10		150	**SAND, clayey (SC)** - Very dark gray and dark greenish gray (GLEY1 4/1/10GY), moist, very dense, -HCL	Top of Still Branch Formation at a depth of 148.0 feet
			70.4			
SS 32	50/3"	0	68.7		**NO RECOVERY** Boring terminated at 153.75 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3019**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3020

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1142977.9 E 622074.8	2/19/2007	3/13/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	6 Inches	328848	149.4

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.4	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.4			
SS 1	4-7-10	14			**CLAY, sandy (CL)** - Red (10R 4/8), and yellowish brown (10YR 5/8), dry, very stiff, low plasticity	Top of Barnwell Group at a depth of 0.0 feet
SS 2	8-14-18	16			SAA	
			219.2			
SS 3	9-17-17	18		5	**SAND, silty, clayey (SC-SM)** - Red (2.5YR 4/8), damp, dense, fine to medium grained	
SS 4	10-14-14	18			SAA except medium dense	
			214.4			
SS 5	10-12-14	18		10	**SAND, clayey (SC)** - Red (2.5YR 4/6), damp, medium dense, fine grained	
SS 6	9-14-16	18			SAA	
			209.4			
SS 7	8-11-13	16		15	**SAND, silty (SM)** - Red (2.5YR 4/8), damp, medium dense, fine grained	
			205.4			
SS 8	9-11-15	12		20	**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), damp, medium dense, fine grained	
			200.4			
SS 9	8-8-10	16		25	**SAND, with silty clay (SP-SC)** - Brownish yellow (10YR 6/8), damp, medium dense, fine grained	
SS 10	9-8-9	12		30	SAA	
			190.4			
SS 11	7-7-8	18		35	**SAND, silty (SM)** - Brownish yellow (10YR 6/6), damp, medium dense, fine grained	
SS 12	7-7-9	12		40	SAA	
			180.4			
SS 13	3-7-11	14		45	**SAND, clayey (SC)** - Yellow (10YR 7/6), damp, medium dense, fine to medium grained, contains some black and white CLAY seams	
SS	3-3-3	16			SAA except loose	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3020

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3020

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			170.4			
SS 15	WOH/18"	18	165.4	55	**CLAY (CL)** - Pale yellow (5Y 8/3), damp, very soft, low plasticity, -HCL	
SS 16	13-14-17	18	160.4	60	**SAND, with silt (SP-SM)** - Pale brown (10YR 6/3), moist, dense, fine to medium grained, -HCL	
SS 17	5-4-6	12	155.4	65	**CLAY (CL)** - Pale yellow (5Y 7/4), damp, stiff, low plasticity, -HCL	
SS 18	WOH/18"	15	150.4	70	**CLAY, silty (CL-ML)** - Yellow (5Y 8/6), damp, very soft, low plasticity, -HCL	
SS 19	10-9-11	18	145.4	75	**SAND (SP)** - Pale yellow (5Y 8/3), moist, medium dense, medium grained, -HCL	
SS 20	5-2-7	18	142.9	80	**SAND, with silt (SP-SM)** - Pale yellow (5Y 8/3), damp, loose, medium to coarse grained, -HCL	Water level depth at end of 2/19/07= 20.0 feet
			140.4		**CLAY (CL)** - Olive (5Y 5/4), damp, stiff, low plasticity, -HCL	Top of Utley Limestone at a depth of 82.0 feet
SS 21	50/3"	3	135.4	85	**CLAY, sandy (CL)** - Pale yellow (5Y 8/4), damp, hard, low plasticity, contains shell fragments and cemented layers, +HCL	Water level depth at beginning of 2/20/07= 63.0 feet Loss of circulation at a depth of 84 feet
SS 22	9-10-14	18	129.4	90	**CLAY (CL)** - Greenish gray (GLEY1 5/10GY), damp, very stiff, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 87.0 feet Water level depth at beginning of 3/12/07= 40.0 feet
SS 23	8-9-15	18	125.4	95	**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/10GY), damp, very stiff, low plasticity, +HCL	Installed 6" steel casing to a depth of 94.0 feet
SS 24	50/5"	5	120.4	100	**SILT (ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, contains shell hash, +HCL	End logging by S. Woodham. Begin logging by L. Davis.
UD 1		15		105	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), moist, low plasticity, +HCL Pocket Penetrometer: >4.5 TSF	Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3020**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3020

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	22-42-48	18		110	SAA except greenish gray (GLEY1 6/10Y), damp, hard, contains shell hash	
SS 26	50/1"	1		115	SAA except greenish gray (GLEY1 6/5GY), moist, contains compacted zones	
			105.4			
SS 27	50/5"	5		120	**CLAY (CL)** - Greenish gray (GLEY1 6/10Y), moist, hard, low plasticity, contains compacted zones, +HCL	
			100.4			
SS 28	19-37-36	14		125	**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 7/10Y), damp, hard, low plasticity, +HCL	
			95.4			
SS 29	18-19-50/5"	17		130	**CLAY (CL)** - Light greenish gray (GLEY1 7/10Y), damp, hard, medium plasticity, +HCL	
			90.4			
UD 2		24		135	**CLAY, silty (CL-ML)** - greenish gray (GLEY1 6/10Y to 7/10Y), damp, medium plasticity, +HCL Pocket Penetrometer: 4.0 TSF	Pitcher Water level depth at beginning of 3/13/07= 40.0 feet
			85.4			
SS 30	29-26-24	18		140	**CLAY (CL)** - Light greenish gray (GLEY1 7/10Y), moist, hard, medium plasticity, +HCL	
			80.4			
SS 31	15-19-27	18		145	**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 7/10Y), moist, hard, low plasticity, contains minor shell hash, +HCL	
			75.4			Top of Still Branch Formation at a depth of 147.0 feet
SS 32	24-50/5"	10	73.0		**SAND, silty (SM)** - Very dark greenish gray (GLEY1 4/5G), moist, very dense, fine to medium grained, nonplastic, -HCL Boring terminated at 149.42 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3020**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3021

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrerra	N 1143070.2 E 622033.2	2/16/2007	3/14/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Giesecke-Gregg Drilling	CME-55	6 Inches	311025	154.5

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
223.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			223.2			
SS 1	4-8-12	18			**SAND, with silt (SP-SM)** - Red (2.5YR 4/8), damp, medium dense, medium grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	12-13-14	18			SAA except red (2.5YR 5/8)	
			219.9			
SS 3	6-7-9	18			**CLAY (CL)** - Red (2.5YR 5/6), damp, very stiff	
			217.7	5		
SS 4	7-12-14	18			**CLAY, sandy (CL)** - Red (2.5YR 5/8), damp, very stiff	
SS 5	8-13-15	15			SAA	
			212.7	10		
SS 6	6-12-13	15			**SAND, clayey (SC)** - Red (2.5YR 4/8), damp, medium dense, medium grained	
SS 7	9-10-11	15.5			SAA	
				15		
SS 8	7-11-11	15			SAA except red (2.5YR 5/8) and yellowish red (5YR 5/8), moist	
				20		
SS 9	7-8-9	18			SAA except yellowish red (5YR 5/8)	
				25		
			196.2			
SS 10	5-6-11				**CLAY (CL)** - Yellow (10YR 7/8), damp, very stiff	
				30		
			191.2			
SS 11	5-6-8	16			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/4) to 10YR 5/6), moist, medium dense, medium to coarse grained	
				35		
			186.2			
SS 12	3-4-9	18			**SILT (ML)** - Yellow (2.5Y 7/6), damp, stiff, low plasticity	
				40		
			181.2			
SS 13	5-9-12	10			**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), moist, medium dense, medium to coarse grained, -HCL	
				45		
SS	4-6-4	18			SAA except reddish yellow (5YR 6/6), loose, medium grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3021

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3021

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						Water level depth at end of 2/16/07 = Ground surface End logging by M. Herrera. Begin logging by D. Brooks. Water level depth at beginning of 2/20/07 = 5.25 feet
SS 15	6-9-13	13		55	SAA except reddish yellow (7.5YR 6/8), medium dense, low plasticity	
			166.2			
SS 16	10-14-21	14		60	**SAND, with silt (SP-SM)** - Yellow (2.5Y 8/6), moist, dense, medium grained, nonplastic, -HCL	
			161.2			
SS 17	5-6-10	18		65	**CLAY, silty (CL-ML)** - Pale yellow (2.5Y 8/3), damp, very stiff, low plasticity, +HCL	
SS 18	4-6-8	16		70	SAA except stiff	
			151.2			
SS 19	8-11-15	14		75	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/2), moist, medium dense, medium grained, -HCL	
			146.2			Top of Utley Limestone at a depth of 77.0 feet
SS 20	14-21-19	15		80	**GRAVEL, silty, clayey (GC-GM)** - Pale yellow (5Y 8/3), moist, dense, contains shell hash, +HCL	
SS 21	34-42-37	4		85	SAA except very dense	Loss of circulation at a depth of 83.0 feet
			137.2			Top of Blue Bluff Marl at a depth of 86.0 feet
SS 22	7-9-24	18		90	**SILT (ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, nonplastic, +HCL	Water level depth at beginning of 3/9/07 = 39.0 feet End logging by D. Brooks. Begin logging by B. Sharp. Changed from a 2 7/8 inch to a 5 7/8 inch drilling bit.
			131.2			
SS 23	9-16-18	18		95	**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/10Y), damp, hard, nonplastic to low plasticity, contains shell fragments, +HCL	
SS 24	50/4"	4		100	SAA except contains cementation	Water level depth at end of 3/9/07 = 6.5 feet
UD 1		12		105	SAA except abundant cementation Pocket Penetrometer: >4.75 TSF	Water level depth at beginning of 3/12/07 = 3.0 feet Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3021**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3021

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	27-38-49	18		110	SAA	Water level depth at end of 3/12/07 = Ground surface
SS 26	12-29-50/3"	15		115	SAA except greenish gray (GLEY1 5/5GY)	Water level depth at beginning of 3/13/07 = 2.0 feet
SS 27	8-24-29	18		120	SAA except minor cementation and shell fragments	
SS 28	28-41-42	18		125	SAA except greenish gray (GLEY1 6/10Y), no shell fragments	
SS 29	8-14-17	18		130	SAA except no shells or cementation	
SS 30	8-11-19	18		135	SAA except very stiff to hard	
SS 31	16-29-50/4"	16		140	SAA except hard, contains some cementation	
SS 32	17-20-32	18		145	SAA except no cementation	
UD 2		10	75.2	150	***SAND, with silt (SP-SM)** - Very dark greenish gray (GLEY1 3/10Y), wet, medium dense to dense, fine to medium grained, -HCL Pocket Penetrometer: 1.25 TSF	Top of Still Branch Formation at a depth of 148.0 feet Pitcher Water level depth at end of 3/13/07 = 17.0 feet
UD 3		12	68.7		SAA except greenish black (GLEY1 2.5/10Y), dense Pocket Penetrometer: >4.75 TSF Boring terminated at 154.5 feet	Water level depth at beginning of 3/14/07 = 31.0 feet Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3021**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3022

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Brooks	N 1143069.8 E 621873.4	1/4/2007	1/9/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Christian-MACTEC	CME-75	3 Inches	200587	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
223.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			223.9			
SS 1	2-2-2	6			**SAND (SP)** - Reddish brown (5YR 4/4), damp, loose, fine to medium grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-2-6	10			SAA except yellowish red (5YR 5/8)	
SS 3	6-8-12	14			SAA except medium dense	
			218.4	5		
SS 4	7-11-14	15			**SAND, with silt (SP-SM)** - Red (10R 4/8), medium dense, fine to medium grained, nonplastic	
SS 5	7-15-26	16			SAA except yellowish red (5YR 5/8), dense, low plasticity	
			213.4	10		
SS 6	6-4-7	15			**SILT (ML)** - Reddish yellow (7.5YR 6/8), stiff, low plasticity, -HCL	
SS 7	4-6-11	18			SAA except red (2.5YR 4/8)	
				15		
			206.9			
SS 8	6-11-13	18			**SAND, with clay (SP-SC)** - Reddish yellow (7.5 YR 6/8), damp, medium dense, medium grained, low plasticity, -HCL	
				20		
			201.9			
SS 9	6-7-13	18			**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), damp, medium dense, fine to medium grained, low plasticity, -HCL	
				25		
			196.9			
SS 10	4-7-10	18			**SILT (ML)** - Brownish yellow (10YR 5/8), damp, very stiff, low plasticity, -HCL	
				30		
			191.9			
SS 11	6-9-12	16			**SAND, with silt (SP-SM)** - Brownish yellow (10R 6/8), damp, medium dense, medium grained, nonplastic, -HCL	
				35		
			186.9			
SS 12	5-5-8	18			**CLAY, silty with sand (CL-ML)** - Brownish yellow (10YR 6/8), damp, stiff, low plasticity, -HCL	
				40		
			182.1			
SS 13	4-12-28	18			**SAND, with silt (SP-SM)** - Very pale brown (10YR 8/4), damp, dense, nonplastic, contains shell fragments, +HCL	
				45		
			176.9			
SS	10-17-18	16			**SAND, with clay (SP-SC)** - White (7.5YR 8/1), damp, dense, medium grained, contains	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3022

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3022

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			171.9		shell fragments, +HCL	
SS 15	8-13-16	10		55	**SAND (SP)** - Very pale brown (10YR 8/4), damp, medium dense, medium grained, -HCL	
SS 16	10-11-18	14	161.9	60	SAA except contains shell fragments, +HCL	
SS 17	12-13-17	18	156.9	65	**SAND, with clay (SP-SC)** - White (7.5YR 8/1), damp, medium dense, fine to medium grained, low plasticity, contains shell fragments, +HCL	Loss of circulation at a depth of 66.0 feet
SS 18	1-1-2	14		70	**SAND (SP)** - White (7.5YR 8/1), damp, very loose, medium grained, -HCL	Installed 3" steel casing to a depth of 75.0 feet
SS 19	6-7-9	13		75	SAA except medium dense	Water level depth at end of 1/04/07 = ground surface
SS 20	1-1-1	12	142.4	80	SAA except moist, very loose	Water level depth at beginning of 1/05/07 = 70.0 feet Casing adavanced to a depth of 85.0 feet Top of Utley Limestone at a depth of 81.5 feet
SS 21	50/3"	0	136.9	85	**NO RECOVERY**	
SS 22	10-11-18	18		90	**SILT (ML)** - Greenish gray (GLEY2 5/1), damp, very stiff, non plastic, +HCL	
SS 23	10-14-26	16	126.9	95	SAA except hard	
SS 24	50/2"	0	121.9	100	**NO RECOVERY**	Water level depth at end of 1/05/07 = ground surface
SS 25	1-16-50/4"	15		105	SAA	Water level depth at beginning of 1/08/07 = 63.25 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3022**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3022

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		26-44-50/5"	17		110		SAA	
SS 27		18-50/3"	6		115		SAA	
				106.9				
SS 28		31-40-49	18		120		**CLAY, silty (CL-ML)** - Greenish gray (GLEY2 5/1), damp, hard, low plasticity, +HCL	
				101.9				
SS 29		18-40-50/2"	14		125		**SILT (ML)** - Greenish gray (GLEY2 5/1), damp, hard, non plastic, HCL+	
SS 30		14-41-43	18		130		SAA except low plasticity	Water level depth at end of 1/08/07 = ground surface
SS 31		27-50/3"	8		135		SAA	Water level depth at beginning of 1/09/07 = 63.25 feet
SS 32		9-19-29	18		140		SAA except nonplastic	
SS 33		8-12-17	18		145		SAA except very stiff	
				77.4				Top of Still Branch at a depth of 146.5
SS 34		21-34-44	16	73.9	150		**SAND (SP)** - Dark greenish gray (GLEY1 4/1), damp, very dense, fine to medium grained, +HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3022**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3023

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1143061.1 E 621679.9	2/16/2007	2/18/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Bilgrey-MILLER DRILLING	CME-85	6 Inches	270256	150.5

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.8			
SS 1	2-3-6	17			**SAND, with clay (SC)** - Red (2.5YR 4/8), damp, loose, very fine grained, nonplastic, contains organic material	Top of Barnwell Group at a depth of 0.0 feet
SS 2	3-5-10	9			SAA except medium dense	
SS 3	13-20-22	18	218.8		SAA	
				5	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), damp, dense, very fine grained, nonplastic, mostly quartz sand	
SS 4	7-16-19	15			SAA except red (10R 4/8), medium dense	
			214.8			
SS 5	7-8-10	9		10	**SAND, with clay (SP-SC)** - Strong brown (7.5YR 4/6) moist, medium dense, fine grained, non to low plasticity	
SS 6	6-7-9	16			SAA except red (10R 4/6), very fine grained, nonplastic	
SS 7	7-9-10	17		15	SAA	
SS 8	9-14-16	17		20	SAA except red (2.5YR 5/8), dense	
			200.8			
SS 9	3-9-13	14		25	**CLAY (CL)** - Yellowish red (5YR 5/8), moist, very stiff, low plasticity, contains a trace of fine SAND laminated throughout last 2" of sample	
			195.8			
SS 10	9-14-13	15		30	**SAND, with clay (SC)** - Strong brown (7.5YR 5/8) moist, medium dense, fine grained, nonplastic	Water level depth at end of 2/16/07 = Ground surface
SS 11	7-9-11	18		35	SAA except brownish yellow (10YR 6/8), contains traces of CLAY lenses	Water level depth at beginning of 2/17/07 = Borehole dry
			185.8			
SS 12	5-9-12	13		40	**SILT (ML)** - Yellow (10YR 7/8), moist, very stiff, low plasticity, low toughness, laminations observed, contains traces of very fine SAND	
			180.8			
SS 13	4-5-9	18		45	**CLAY (CL)** - Yellow (2.5Y 7/6), moist, stiff, low plasticity, low toughness	
			175.8			
SS	7-9-10	12			**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), moist, medium dense, fine grained,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-3023

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3023

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					nonplastic	
SS 15	5-7-10	16		55	SAA	
SS 16	8-9-11	15		60	SAA	
			160.8			
SS 17	8-10-14	15		65	**SAND, with silt (SP-SM)** -Light yellowish brown (10YR 6/4), wet, medium dense, fine to medium grained, nonplastic	
			156.3			Loss of circulation at a depth of 66.5 feet
SS 18	WOH/18"	16		70	**CLAY, with sand (CL)** - Light yellowish brown (2.5Y 6/3), wet, very soft, low plasticity, low toughness, fine grained SAND, -HCL	
SS 19	WOH/18"	12		75	SAA	
			145.8			
SS 20	2-4-3	8		80	**SAND, with clay (SP-SC)** - Pale yellow (5Y 8/3), wet, loose, fine grained, nonplastic, low toughness	
			139.3			
SS 21	50/1"	1		85	**GRAVEL, with clay (GP-GC)** Pale yellow (2.5Y 8/4), wet, very dense, angular grave consists of cemented limestone and shell hashes, fossils observed, +HCL	Top of Utley Limestone at a depth of 83.5 feet
			136.8			Top of Blue Bluff Marl at a depth of 86 feet
SS 22	7-12-17	18		90	**CLAY (CH)** Dark greenish gray (GLEY1 4/5GY), damp, very stiff, high plasticity, +HCL	
UD 1		11		95	SAA except hard, high toughness Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher
SS 23	1-19-50/3"	15		100	SAA except medium toughness	
UD 2		18		105	SAA Pocket Penetrometer: >4.5 TSF, 4.0 TSF, 4.5 TSF.	Pitcher Water level depth at end of 2/17/07 = 67.0 feet Water level depth at

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3023**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3023

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
						beginning of 2/18/07 = 65.0 feet
SS 24	12-12-50/3"	15		110	SAA except greenish gray (GLEY1 5/5GY), moist	
UD 3		17		115	SAA Pocket Penetrometer: >4.5 TSF, >4.5 TSF, 2.5 TSF	Pitcher
SS 25	8-8-15	18		120	SAA except greenish gray (GLEY1 5/10Y), very stiff	
SS 26	16-17-14	18		125	SAA except greenish gray (GLEY1 6/5GY), hard	
SS 27	8-12-15	18		130	SAA except very stiff	
SS 28	17-33-22	18		135	SAA except hard	
SS 29	17-22-19	18		140	SAA	
SS 30	19-50/3"	9		145	SAA	
UD 4		30	73.8 72.3	150	SAA **SAND, with silt (SP-SM)** - Very dark greenish gray (GLEY1 3/10Y), moist, medium dense, very fine grained, nonplastic, -HCL Boring terminated at 150.5 feet	Pitcher Top of Still Branch Formation at a depth of 149.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3023**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3024

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1142905.8 E 621399.7	2/20/2007	2/27/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	3 Inches	337153	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.2			
SS 1	5-4-5	11			**SAND, silty (SM)** - Red (2.5YR 4/8), dry to damp, loose, fine grained, low plasticity	Top of Barnwell Group at a depth of 0.0 feet
SS 2	11-11-12	18			SAA except strong brown (7.5YR 4/6), medium dense	
SS 3	5-7-8	9.5			SAA	
				5		
SS 4	2-3-2	9			SAA except strong brown (7.5YR 5/6), loose	
SS 5	2-3-4	13			SAA except yellowish red (5YR 5/6)	
				10		
SS 6	4-9-11	16			SAA except red (2.5YR 4/8), medium dense	
SS 7	9-13-13	13.5			SAA	
				15		
			203.2			
SS 8	5-8-10	16			**SAND, clayey (SC)** - Red (2.5YR 4/8), dry to damp, medium dense, fine grained, low plasticity	
				20		
SS 9	7-10-15	13			SAA except contains CLAY seams	
				25		
SS 10	3-4-7	16			SAA except brownish yellow (10YR 6/6), contains CLAY seams and phosphate grains	
				30		
SS 11	4-4-7	13			SAA except damp	
				35		
			183.2			
SS 12	3-4-5	18			**CLAY, silty with sand (CL-ML)** - Brownish yellow (10YR 6/6), damp, stiff, medium plasticity, fine grained SAND, contains SAND seams and trace phosphates	
				40		
SS 13	3-3-3	18			SAA except medium stiff	
				45		
			173.2			
SS	5-7-6	16.5			**SAND, clayey (SC)** - Strong brown (7.5YR 5/8), damp, medium dense, fine grained, low	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-3024

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3024

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					plasticity, contains trace phosphate grains	
SS 15	2-4-4	18		55	SAA except yellowish brown (10YR 5/6), loose	
SS 16	6-8-9	17		60	SAA except yellowish red (5YR 5/8)	
			158.2			Water level depth at end of 2/20/07 = Top of casing
SS 17	5-8-11	12		65	***SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/6), damp, loose, fine grained, low plasticity, contains CLAY seams	Water level depth at beginning of 2/21/07 = 35.0 feet
SS 18	9-6-7	6		70	SAA except very pale brown (10YR 7/4)	
SS 19	2-3-4	18		75	SAA except yellow (10YR 8/6), loose	
SS 20	2-2-4	18		80	SAA except yellow (2.5Y 7/6)	
			138.2			Top of Blue Bluff Marl at a depth of 82.0 feet
SS 21	8-7-8	18		85	**CLAY, silty (CL-ML)** - Pale yellow (5Y 7/4), dry, stiff, low plasticity, contains trace shell fragments and phosphate grains, +HCL	
SS 22	18-50/4"	10		90	SAA except dark greenish gray (GLEY1 4/10Y), hard	
SS 23	8-12-16	18		95	SAA except dark greenish gray (GLEY1 4/10GY), dry to damp, very stiff	
UD 1		22			SAA except greenish gray (GLEY1 5/5GY), damp, contains cemented SAND in bottom Pocket Penetrometer: >4.5 TSF	Water level depth at end of 2/21/07 = Top of casing Pitcher
				100		Water level depth at end of 2/26/07 = Top of casing
SS 24	50/3"	3		105	SAA except dry to damp, contains cemented SAND	Water level depth at beginning of 2/27/07 = 34.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3024**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3024

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	50/5"	5		110	SAA	
SS 26	7-50/6"	12		115	SAA	
UD 2		16		120	SAA except dark greenish gray (GLEY1 4/5GY to 5/5GY), damp, contains cemented SAND in bottom Pocket Penetrometer: >4.5 TSF	Pitcher
SS 27	50/2"	2		125	SAA except greenish gray (GLEY1 5/5GY), dry to damp	
SS 28	34-50/1"	7		130	SAA	
SS 29	12-22-50/3"	15		135	SAA except greenish gray (GLEY1 6/5GY)	
SS 30	31-21-32	18		140	SAA	
SS 31	6-8-11	18		145	SAA except very stiff	
SS 32	8-20-18	18	70.2	150	SAA except hard Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3024**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3025

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142460.4 E 621425.3	2/2/2007	2/7/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	6 Inches	219907	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.2		
SS 1	5-10-7	15	217.2	**GRAVEL, with sand (GP)** - Dark gray (5Y 4/1), moist, medium dense, contains medium to coarse grained SAND	Top of Fill at a depth of 0.0 feet
SS 2	8-10-11	18		**SAND (SP)** - Red (2.5YR 4/8), reddish yellow (7.5YR 6/8), moist, medium dense, fine grained	Top of Barnwell Group at a depth of 1.0 feet
SS 3	5-7-7	10	214.2	SAA except red (2.5YR 4/8), contains some CLAY	
SS 4	5-6-6	15		***SAND, clayey (SC)** - Red (2.5YR 4/8), moist, medium dense, fine grained	
SS 5	4-7-7	12		SAA	
SS 6	9-9-11	18		SAA	
SS 7	5-9-5	12		SAA	
			201.6		
SS 8	5-7-9	11		**SAND, silty (SM)** - Reddish yellow (7.5YR 6/8), moist, medium dense, fine to coarse grained, subhorizontal structure	
SS 9	5-9-7	11		SAA except contains zones of poorly graded SAND (SP) and clayey SAND (SC), and a trace of black manganese staining	Water level depth at end of 02/02/07 = Ground surface
			191.6		
SS 10	4-8-9	9		**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), moist, medium dense, medium grained, subhorizontal structure	Water level depth at beginning of 02/05/07 = Borehole dry. Borehole caved to a depth of 20.0 feet
SS 11	3-4-5	18		SAA except yellow (2.5Y 7/6), loose, fine grained, contains very thin subhorizontal lenses of yellowish brown (10YR 5/8) SAND	
SS 12	2-3-4	18		SAA except does not contain structural SAND lenses	
SS 13	4-7-7	18		SAA except medium grained, contains thin subhorizontal laminations, scattered white shell fragments, and a trace of black manganese staining, and mica, -HCL	
			171.6		
SS	3-3-4	18		**SAND, silty (SM)** - Yellow (2.5Y 7/6), moist, loose, fine grained, -HCL	

DEPTH IN FT: 5, 10, 15, 20, 25, 30, 35, 40, 45

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3025

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3025

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			166.6			
SS 15	6-10-10	18	161.6	55	**SAND, clayey (SC)** - Light yellowish brown (2.5Y 6/3), brownish yellow (10YR 6/8), moist, medium dense, medium grained, contains traces of white shell fragments, traces of black manganese staining, thin subhorizontal laminations, -HCL	
SS 16	10-13-14	15	156.6	60	**SAND, silty (SM)** - Light brown (7.5YR 6/4), yellow (2.5Y 7/8), moist, medium dense, fine to medium grained, subhorizontal structure, -HCL	
SS 17	10-15-9	10	151.6	65	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/4), moist, medium dense, fine to medium grained, -HCL	
SS 18	2-3-4	18		70	**SAND, silty (SM)** - Pale yellow (5Y 8/2), moist, looose, medium to coarse grained, contains shell fragments in a limey mud matrix, -HCL	
SS 19	7-14-17	14	144.6 143.7	75	SAA except dense **SILT, with sand (ML)** - Pale yellow (5Y 8/3), moist, hard, low plasticity, very thin subhorizontal laminations, contains fine grained SAND, +HCL	
SS 20	10-10-18	18		80	**SAND, silty (SM)** - Pale yellow (2.5Y 7/3), moist to wet, dense, medium to coarse grained, contains shell fragments and 0.5-inch thick silt lens, +HCL SAA except Pale yellow (5Y 8/4), wet, medium dense, fine grained	
SS 21	13-50/3"	9	134.7 131.2	85	**SAND, silty (SM)** - Pale yellow (5Y 8/2), wet, very dense, contains cemented shell fragments in a carbonate mud matrix, +HCL	Top of Utley Limestone at a depth of 83.5 feet Water level depth at end of 02/05/07 = 3.0 feet
SS 22	10-13-19	18	126.2	90	**SILT, with sand (ML)** - Pale olive (5Y 6/3), yellowish brown (10YR 5/8), moist, hard, nonplastic to low plasticity, contains fine grained yellowish brown SAND lenses, +HCL	Water level depth at beginning of 02/06/07 = 45.0 feet Borehole caved to a depth of 80.0 feet
SS 23	13-17-23	18		95	**SILT (ML)** - Dark greenish gray (GLEY1 4/10Y), damp, hard, nonplastic to low plasticity, very thin subhorizontal laminations, contains fine grained SAND and white shell fragments, +HCL	Top of Blue Bluff Marl at a depth of 92.0 feet
SS 24	16-16-13	18		100	SAA except very stiff, contains localized partially cemented zones, not evidence of shell fragments	
UD 1		24		105	SAA except very stiff to hard Pocket Penetrometer: >4.5 TSF	Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3025**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3025

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	50/2"	1.5		110	SAA except hard, contains abundant cementation	
SS 26	50/5.5"	5	101.6	115	SAA except greenish gray (GLEY1 5/10Y), contains scattered white shell framents	Water level depth at end of 02/06/07 = 7.0 feet
SS 27	41-41-30	18		120	**SILT, with sand (ML)** - Greenish gray (GLEY1 5/10Y), damp to moist, hard, nonplastic to low plasticity, contains fine SAND and scattered white shell fragments, few thin zones partially cemented, very thin subhorizontal laminations, +HCL	Water level depth at beginning of 02/07/07 = 46.0 feet
SS 28	34-24-49	18		125	SAA, cemented layers at 123.8 to 123.9 feet, 124.2 to 124.3 feet and 124.7 to 124.8 feet, contains trace shell fragments	
SS 29	25-13-15	18	86.2	130	SAA except greenish gray (GLEY1 6/10Y), very stiff, few thin layers with cementation from 128.5 to 129 feet	
UD 2		16.5		135	***CLAY, with sand (CH)** - Greenish gray (GLEY1 6/10Y), very stiff, damp to moist, high plasticity, trace shell fragments, +HCL Pocket Penetrometer: >4.5 TSF	Pitcher
SS 30	50/1"	1		140	SAA	
SS 31	42-22-30	18		145	SAA except no evident structure, cementation or shell fragments	
SS 32	11-14-21	18	68.2	150	SAA	
					Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3025**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3026

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142290.2 E 621403.7	2/7/2007	2/13/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	4 Inches	219907	149.2

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
215.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			215.8			
SS 1	10-15-11	2	215.3		**GRAVEL, with sand (GP)** - Gray (10YR 6/1) and dark brown (10YR 3/3), damp, medium dense, fine to medium grained SAND, contains organics	Top of Fill at a depth of 0.0 feet Top of Barnwell Group at a depth of 0.5 feet
SS 2	10-11-13	15	212.5		**SAND, clayey (SC)** - Red (10R 4/8), moist, medium dense, fine grained	
SS 3	8-11-11	13		5	SAA	
SS 4	10-11-9	18	208.6		**SAND, with clay (SP-SC)** - Red (10R 4/8), moist, medium dense, fine grained	
			207.8		**SAND (SP)** - Red (10R 4/8), moist, medium dense, fine grained	
SS 5	5-8-8	13		10	**SAND, with clay (SP-SC)** - Red (10R 4/8), moist, medium dense, fine grained	
SS 6	6-8-10	13			SAA	
SS 7	5-6-6	13		15	SAA except fine to medium grained, contains faint subhorizontal structure	
			198.8			
SS 8	5-8-6	13	196.6	20	**SAND, clayey (SC)** - Red (10R 5/6), moist, medium dense, fine to medium grained, slightly micaceous, contains faint subhorizontal structure	
			193.8		**SAND (SP)** - Reddish yellow (5YR 6/6) to (7.5YR 6/8), moist, medium dense, fine grained, contains faint subhorizontal structure	
SS 9	6-10-10	12	191.6	25	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), moist, medium dense, fine to medium grained, contains faint subhorizontal structure	
			188.8		**SAND (SP)** - Yellow (10YR 7/8), moist, medium dense, medium grained	
UD 1		18		30	**SAND, clayey (SC)** - Yellowish brown (10YR 5/8), moist, medium dense, fine to medium grained Pocket Penetrometer: 4.5 TSF	Direct Push
UD 2		24		35	SAA except fine grained Pocket Penetrometer: 1.25 TSF	Direct Push
UD 3		24	176.2	40	SAA except red (2.5YR 5/6), fine to medium grained Pocket Penetrometer: 2.25 TSF	Direct Push
			173.8		**SAND (SP)** - Strong brown (7.5YR 5/8), moist, medium dense, fine to medium grained	
SS 10	6-5-5	17		45	**SAND, silty (SM)** - Yellow (2.5Y 7/6), moist, loose to medium dense, fine grained	
			168.8			
SS	5-5-7	18			**SAND, clayey (SC)** - Light yellowish brown (2.5Y 6/4), moist, medium dense, fine grained.	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3026

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3026

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11					contains thin CLAY lenses, -HCL	
			163.8			
SS 12	1-2-4	13		55	**SAND, silty (SM)** - Olive yellow (2.5Y 6/6), moist, loose, medium to coarse grained, -HCL	Loss of circulation at a depth of 52.0 feet
			158.8			
SS 13	10-17-11	14		60	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8) to yellow (10YR 7/6), moist to wet, medium dense, medium to coarse grained, contains trace black manganese staining, -HCL	Regained circulation at a depth of 60.0 feet
			153.8			
SS 14	3-1-2	18		65	**SAND, silty (SM)** - Pale yellow (5Y 8/3), moist to wet, very loose, fine to medium grained, -HCL	
SS 15	15-16-14	18		70	SAA except white (5Y 8/1), wet, medium dense to dense, coarse grained, contains shell fragments and cementation, +HCL	
SS 16	8-11-16	18		75	SAA except pale yellow (5Y 8/2), medium dense	
			137.3			
SS 17	27-34-19	18		80	**SAND, silty (SM)** - Pale yellow (5Y 8/2), wet, very dense, fine to medium grained, +HCL	Top of Utley Limestone at a depth of 78.5 feet
SS 18	50/1.5"	1		85	SAA except coarse to very coarse grained	
			130.3			Top of Blue Bluff Marl at a depth of 85.5 feet
SS 19	10-21-33	18		90	**SILT (ML)** - Dark greenish gray (GLEY1 4/10Y), damp, hard, nonplastic to low plasticity, contains very fine and coarse grained shell fragments, +HCL	
SS 20	38-50/4"	10		95	SAA except contains less shell fragments	
SS 21	50/5.5"	5.5		100	SAA except contains more shell fragments and cementation	Water level depth at end of 2/8/07 = Ground surface
SS 22	12-17-20	18		105	SAA except no cementation	Water level depth at beginning of 2/9/07 = 47.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3026**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 3 OF 3	HOLE NO. B-3026

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 23	12-22-32	18		110	SAA except greenish gray (GLEY1 5/10Y)	
			103.8			
SS 24	23-20-24	18		115	**SILT, with sand (ML)** - Greenish gray (GLEY1 5/10Y), damp, hard, nonplastic to low plasticity, contains shell fragments	
SS 25	28-41-40	18		120	SAA except contains cementation	
SS 26	10-28-50/2"	14		125	SAA except less shell fragments and cementation	Water level depth at end of 2/9/07 = Ground surface
SS 27	9-30-50/3"	15		130	SAA except contains thin cemented zones	Water level depth at beginning of 2/12/07 = 56.0 feet
SS 28	50/5.5"	4		135	SAA except greenish gray (GLEY1 6/10Y), nonplastic, partially cemented	Water level depth at end of 2/12/07 = 3.0 feet
SS 29	14-34-50/1"	13		140	SAA except nonplastic to low plasticity	Water level depth at beginning of 2/13/07 = 57.0 feet
SS 30	18-21-24	18		145	SAA	
SS 31	13-50/2"	8	66.6		SAA Boring terminated at 149.17 feet	

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-3026

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3027

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Brooks	N 1142058.7 E 621423.3	1/30/2007	2/6/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Geisecke-Gregg	CME-55	4 Inches	311025	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.8			
SS 1	7-8-7	9			**SAND, with silt (SP-SM)** - Red (2.5YR 4/8), damp, medium dense, fine to medium grained, non plastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	6-5-13	18			SAA except red (2.5YR 5/8)	
SS 3	10-11-13	14		5	SAA except light red (10R 6/8)	
SS 4	4-11-13	11			SAA except red (2.5YR 5/8)	
SS 5	3-4-5	8		10	SAA except red (10R 4/8), wet, loose, medium grained	
SS 6	4-4-5	9			SAA	
			205.8			
SS 7	4-6-7	10		15	**GRAVEL, with silt and sand (GP-GM)** - Wet, medium dense, fine to medium grained SAND	
			201.8			
SS 8	3-5-7	12		20	**SAND, with silt (SP-SM)** - Red (10R 5/8), wet, medium dense, fine to medium grained, non plastic	
SS 9	6-11-14	10		25	SAA except reddish yellow (7.5YR 6/8), fine grained	Water level depth at end of 1/30/2007 = Ground surface
			191.8			
SS 10	3-4-8	16		30	**CLAY, with sand (CH)** - Brownish yellow (10YR 6/6), damp, stiff, fine grained SAND, high plasticity, +HCL	Water level depth at beginning of 1/31/2007 = 4.25 feet
			186.8			
SS 11	2-3-5	18		35	**CLAY, sandy (CL)** - Brownish yellow (10YR 6/8), damp, medium stiff, fine grained, low plasticity, -HCL	
SS 12	2-4-6	18		40	SAA except stiff, fine to medium grained	
			176.8			
SS 13	6-6-8	18		45	**SAND, with clay (SP-SC)** - Yellow (10YR 7/6), damp, medium dense, medium grained, low plasticity, -HCL	
SS	5-6-8	18			SAA except medium to coarse grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3027

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3027

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			166.8			
SS 15	4-7-13	15		55	**SAND, with silt (SP-SM)** - Very pale brown (10YR 8/2), damp, medium dense, medium to coarse grained, nonplastic, -HCL	
SS 16	3-2-10	17	156.8	60	SAA except very pale brown (10YR 8/3), wet, coarse grained	
SS 17	2-11-11	18	151.8	65	**SAND, with clay and gravel (SP-SC)** - Very pale brown (10YR 8/4), damp, medium dense, medium grained, low plasticity, GRAVEL consists of shell hash, +HCL	
SS 18	10-16-13	18	146.8	70	**CLAY, silty, sandy with gravel (CL-ML)** - Very pale brown (10YR 8/2), damp, very stiff, fine grained, GRAVEL consists of shell hash, low plasticity, +HCL	
SS 19	9-10-11	18	141.8	75	**SAND, clayey with gravel (SC)** - Very pale brown (10YR 8/2), damp, medium dense, medium to coarse grained, GRAVEL consists of shell hash, low plasticity, +HCL	
SS 20	10-26-32	11	136.8	80	**SAND, with silt (SP-SM)** - Very pale brown (10YR 8/2), wet, very dense, coarse grained, nonplastic, +HCL	
SS 21	50/1"	0	132.8	85	**NO RECOVERY**	Top of Utley Limestone at a depth of 82.0 feet.
SS 22	6-6-11	18	126.8	90	**CLAY, silty (CL-ML)** - Light greenish grey (GLEY1 8/10Y), damp, very stiff, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 86.0 feet.
SS 23	24-22-31	18		95	**SILT (ML)** - Greenish grey (GLEY1 5/5GY), damp, hard, nonplastic, +HCL	Water level depth at end of 1/31/2007 = 100.0 feet
SS 24	26-24-34	18		100	SAA	Water level depth at beginning of 2/5/2007 = 58.5 feet
SS 25	31-30-33	18		105	SAA except greenish grey (GLEY1 5/10Y)	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3027**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3027

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	13-15-19	18		110	SAA	
SS 27	11-12-16	18		115	SAA	
SS 28	17-32-50/4"	16		120	SAA	Water level depth at end of 2/5/2007 = Ground Surface
			96.8			
SS 29	25-29-49	18		125	**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 5/10Y), damp, hard, low plasticity, +HCL	Water level depth at beginning of 2/6/2007 = 61.25 feet
SS 30	50/3"	3		130	SAA except light greenish grey (GLEY1 7/10Y)	
			86.8			
SS 31	50/2"	0		135	**NO RECOVERY**	
			81.8			
SS 32	17-18-33	18		140	SAA except greenish grey (GLEY1 5/5GY), damp, hard, low plasticity, +HCL	
SS 33	19-19-23	18		145	SAA	
SS 34	21-23-21	18		150	SAA	
			68.8		Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3027**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3028

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Brooks	N 1141867.3 E 621408.8	2/7/2007	2/12/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Giesecke-Gregg Drilling	CME-55	4 Inches	311025	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.1			
SS 1	1-4-3	12			**SAND, with clay (SP-SC)** - Red (2.5YR 4/8), damp, loose, fine grained, low plasticity	Top of Barnwell Group at a depth of 0.0 feet
SS 2	4-5-9	11			SAA except medium dense	
SS 3	3-6-7	14			SAA	
			214.6	5		
SS 4	7-10-11	13			**CLAY, sandy (CL)** - Red (2.5YR 4/6), damp, very stiff, medium plasticity, fine grained SAND	
SS 5	6-8-9	15			SAA	
			209.6	10		
SS 6	8-10-12	14			**SAND, with clay (SP-SC)** - Red (10R 5/8), damp, medium dense, fine grained, low plasticity	
			207.1			
SS 7	5-7-10	15		15	**CLAY, sandy (CL)** - Yellowish red (5YR 5/8), damp, very stiff, low plasticity, fine to medium grained SAND	
			203.1			
SS 8	6-5-8	13		20	**SAND, with silt (SP-SM)** - Red (10R 4/8), wet, medium dense, medium grained, nonplastic	
SS 9	5-7-9	14		25	SAA except mottled red (10R 4/8) and pink (10R 8/3)	
SS 10	6-7-10	15		30	SAA except yellowish red (5YR 5/8)	
SS 11	5-10-13	12		35	SAA except reddish yellow (7.5YR 6/8), -HCL	
SS 12	7-10-8	10		40	SAA	
			178.1			
SS 13	1-3-6	18		45	**CLAY, sandy (CL)** - Brownish yellow (10YR 6/8), damp, stiff, low plasticity, fine grained SAND, -HCL	
			173.1			
SS	3-6-5	15			**SAND, with silty clay (SP-SC)** - Brownish yellow (10YR 6/8), damp, medium dense, fine	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3028

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3028

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					to medium grained, nonplastic, -HCL	
SS 15	5-6-8	16		55	SAA except medium to coarse grained	
SS 16	6-10-11	15		60	SAA except yellow (10YR 7/6), low plasticity	
			158.1			
SS 17	6-10-17	14		65	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), wet, medium dense, medium to coarse grained, nonplastic, -HCL	
			153.1			
SS 18	7-9-9	18		70	**GRAVEL, silty, clayey with sand (GC-GM)** - Very pale brown (10YR 8/2), damp, medium dense, fine to medium grained SAND, +HCL	
SS 19	9-13-14	16		75	SAA	
			143.1			
SS 20	8-11-14	17		80	**SAND, with silt (SP-SM)** - Pale yellow (5Y 8/2), wet, medium dense, medium to coarse grained, nonplastic, -HCL	Water level depth at end of 2/7/07 = Ground surface
SS 21	5-8-12	15		85	SAA	Water level depth at beginning of 2/8/07 = 51.33 feet
			133.1			
SS 22	50/1"	0		90	**NO RECOVERY**	Top of Utley Limestone at a depth of 87.0 feet
			128.1			
SS 23	3-5-8	18		95	**CLAY, silty (CL-ML)** - Very pale brown (10YR 7/4), damp, stiff, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 92.0 feet. Loss of circulation.
			123.1			
SS 24	21-29-41	18		100	**SILT (ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, nonplastic, +HCL	Installed 4" steel casing to a depth of 100.0 feet Water level depth at end of 2/8/07 = Ground surface
SS 25	8-12-37	18		105	SAA	Water level depth at beginning of 2/9/07 = 52.2 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3028**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3028

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	X	11-14-17	18		110		SAA except greenish gray (GLEY1 5/10Y)	
SS 27	X	9-12-16	18		115		SAA except very stiff	
SS 28	X	9-10-15	18		120		SAA	
				98.1				
SS 29	X	19-24-26	18		125		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10Y), damp, hard, low plasticity, +HCL	
SS 30	X	19-48-45	18		130		SAA	Water level depth at end of 2/9/07 = Ground surface
SS 31	X	12-29-22	18		135		SAA	Water level depth at beginning of 2/12/07 = 3 feet
SS 32	X	26-50/3"	9		140		SAA	
SS 33	X	36-37-50/1"	13		145		SAA	
				73.1				
SS 34	X	10-11-20	18	70.1	150		**SILT (ML)** - Greenish gray (GLEY1 5/10Y), damp, hard, nonplastic, +HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3028**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3029

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1141881.5 E 621803.9	1/29/2007	1/30/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Melvin-MACTEC	CME-55	3 Inches	219505	149.9

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.1			
SS 1	13-18-11	12			**SAND, silty (SM)** - Red (10YR 5/6), damp, medium dense, low plasticity, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	6-6-14	14			SAA	
			216.9			
SS 3	12-15-15	18	215.6		**CLAY, silty, sandy, with gravel (CL-ML)** - Red (10R 5/6), moist, very stiff, low plasticity, -HCL	
				5		
SS 4	9-13-13	15			**SAND, silty (SM)** - Dark red (2.5YR 3/2), damp, dense, fine grained, nonplastic, -HCL SAA except red (10R 4/6), medium dense	
SS 5	5-7-8	10			SAA	
				10		
SS 6	5-8-10	12			SAA except weak red (10R 4/4)	
SS 7	6-6-7	14			SAA except red (10R 5/8), moist	
				15		
SS 8	5-6-8	15			SAA except light red (10YR 6/8)	
				20		
SS 9	5-7-7	14			SAA except light red (2.5YR 7/8), nonplastic to low plasticity	
				25		
SS 10	8-8-12	9			SAA except light red (2.5YR 6/8)	
				30		
SS 11	15-21-27	11			SAA except reddish yellow (7.5YR 6/6), dense	
				35		
SS 12	20-28-32	11			SAA except damp, very dense, medium to coarse grained	
				40		
			178.1			
SS 13	3-5-5	18			**CLAY, silty, sandy (CL-ML)** - Reddish yellow (7.5YR 6/6), moist, stiff, low plasticity, fine grained SAND, -HCL	
				45		
SS	5-8-10	18			SAA except reddish yellow (7.5YR 7/6), very stiff	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3029

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3029

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14				168.1			
SS 15		16-16-18	15	163.1	55	**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 7/8), moist, dense, medium grained, nonplastic, -HCL	Water level depth at beginning of 1/30/07 = 27.0 feet
SS 16		5-9-10	17	158.1	60	**SAND, silty, clayey (SC-SM)** - Reddish yellow (7.5YR 7/8), moist, medium dense, low plasticity, -HCL	
SS 17		8-7-5	18	153.1	65	**SAND, silty (SM)** - Yellow (10YR 7/8), moist, medium dense, medium grained, nonplastic, -HCL	
SPT 18		7-8-10		148.1	70	**CLAY, silty, sandy (CL-ML)** - Pale yellow (5Y 7/4), moist, very stiff, low plasticity, -HCL	
SS 19		6-10-16	18	143.1	75	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/3), damp, medium dense, nonplastic, -HCL	
SS 20		8-8-12	18	137.1	80	**CLAY, silty, sandy (CL-ML)** - Yellow (2.5Y 6/6), moist, very stiff, low plasticity, -HCL	
SS 21		50/6"	4	133.1	85	**GRAVEL, silty, clayey with sand (GC-GM)** - Yellow (10YR 8/6), moist, very dense, nonplastic to low plasticity, contains shell fragments, +HCL	Top of Utley Limestone at a depth of 83.0 feet
SS 22		10-12-17	18	128.1	90	**CLAY, silty, sandy (CL-ML)** - Yellow (10YR 7/8), moist, very stiff, medium plasticity, +HCL	
SS 23		20-23-26	18		95	**CLAY (CL)** - Greenish gray (GLEY2 5/10Y), damp, hard, nonplastic to low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 92.0 feet
SS 24		50/2"	2	118.1	100	SAA	
SS 25		17-23-41	16	113.1	105	**CLAY, silty with gravel (CL-ML)** - Greenish gray (GLEY1 5/10Y), damp, hard, nonplastic, contains shell fragments, +HCL	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3029**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3029

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		50/2"	1.5		110		SAA except greenish gray (GLEY1 6/5GY)	
SS 27		23-50/5"	11	103.1	115		SAA except greenish gray (GLEY1 5/10Y)	
SS 28		49-50/3"	9	98.1	120		**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 5/10Y), damp, hard, low plasticity, +HCL	
SS 29		42-50/5"	11	93.1	125		**CLAY, with sand (CL)** - Greenish gray (GLEY1 6/10Y), moist, hard, medium plasticity, +HCL	
SS 30		50/5"	3	88.1	130		**CLAY, silty, sandy (CL-ML)** - Greenish gray (GLEY1 6/5GY), damp, hard, nonplastic, +HCL	
SS 31		13-30-50/5"	17	83.1	135		**CLAY, silty, sandy, with gravel (CL-ML)** - Greenish gray (GLEY1 6/10Y), moist, hard, nonplastic to low plasticity, +HCL	
SS 32		50/5"	4		140		**CLAY, silty with sand (CL-ML)** - Light greenish gray, damp, hard, nonplastic to low plasticity, +HCL	
SS 33		17-25-27	18		145		SAA	
SS 34		47-35-50/5"	17	70.2			SAA Boring terminated at 149.9 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3029**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3030

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Bruce	N 1141699.9 E 621799.7	1/19/2007	1/29/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Giesecke-Gregg Drilling	CME-55	4 Inches	311025	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.0	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.0			
SS 1	7-8-8	8	220.5		**SAND, silty (SM)** - Red (2.5YR 5/8), dry, medium dense, fine grained	Top of Fill at a depth of 0.0 feet
SS 2	5-6-6	15	218.7		**GRAVEL, with sand (GP)** - Red (2.5YR 5/8) to strong brown (7.5YR 5/8), wet, medium dense	
SS 3	3-3-2	7	216.5	5	**SAND, clayey (SC)** - Red (2.5YR 5/8), moist, loose	
SS 4	12-10-10	13			***SAND, with silt (SP-SM)** - Red (2.5YR 5/8), dry, medium dense, fine grained	Top of Barnwell Group at a depth of 5.5 feet
SS 5	10-9-8	16		10	SAA except moist	
SS 6	3-5-7	8			SAA except fine to medium grained	
SS 7	4-6-7	9		15	SAA except red (2.5YR 5/8) to strong brown (5YR 5/8), wet	
SS 8	4-6-10	9		20	SAA except red (10YR 4/8) to pinkish gray (7.5YR 7/2), fine to coarse grained	
SS 9	6-7-8	12		25	SAA except strong brown (7.5YR 5/8), fine to medium grained	
SS 10	7-9-13	9		30	SAA except brownish yellow (10YR 6/8), moist, fine to coarse grained	
UD 1		13.5			SAA Pocket Penetrometer: 0.5 TSF, 0.75 TSF, 1.0 TSF	Direct Push
SS 11	18-19-21	8		35	SAA except dense, fine to medium grained	
UD 2		12			SAA Pocket Penetrometer: 0.75 TSF, 0.75 TSF, 0.5 TSF	Direct Push
SS 12	7-14-21	10	182.0	40	SAA except wet	
UD 3		13			**SAND, clayey (SC)** - Yellowish brown (10YR 7/8), wet, fine to medium grained Pocket Penetrometer: 0.5 TSF, 0.5 TSF, 0.5 TSF	Direct Push
SS 13	3-3-6	18		45	SAA except loose, fine grained, contains 1 to 2" CLAY seams	
SS	7-11-8	18			SAA except yellowish brown (10YR 5/6), medium dense, fine to coarse grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3030

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3030

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			170.0			
SS 15	10-12-17	11	165.0	55	**SAND (SP)** - Yellowish brown (10YR 5/6), wet, medium dense, fine to coarse grained	
SS 16	4-4-7	18	160.0	60	**SAND, clayey (SC)** - Yellowish brown (10YR 5/6), moist, medium dense, fine to medium grained	
SS 17	7-8-13	15	155.0	65	**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/8), moist, medium dense, fine to medium grained	
SS 18	4-4-12	18	150.0	70	**SAND, silty, clayey (SC-SM)** - Light gray (10YR 7/2), moist, medium dense, fine grained, -HCL	
SS 19	10-12-14	18	145.0	75	**SAND, silty (SM)** - Light greenish gray (GLEY1 7/10Y), wet, medium dense, fine to medium grained, contains CLAY lenses, -HCL	Water level depth at end of 1/23/07 = 3.0 feet
SS 20	50/3"	3	140.0	80	**SAND, with clay and gravel (SP-SC)** - Light greenish gray (GLEY1 8/5GY), wet, very dense, contains shell hash, +HCL	Water level depth at beginning of 1/24/07 = 35.0 feet
SS 21	9-11-16	18	135.0	85	**SAND, clayey (SC)** - Light greenish grey (GLEY1 8/5GY), moist, medium dense, contains several 1 to 2" CLAY seams	
SS 22	50/5"	4	130.0	90	**GRAVEL, with clay and sand (GP-GC)** - White (GLEY1 8/N), wet, very dense, contains shell hash, +HCL	Top of Utley Limestone at a depth of 87.0 feet Loss of circulation at a depth of 91.0 feet
SS 23	4-9-16	13		95	**SILT (ML)** - Pale olive (5Y 6/4), moist, very stiff, low plasticity, +HCL	
SS 24	19-19-19	18	123.0	100	SAA except hard **SILT (ML)** - Dark greenish gray (GLEY1 4/10GY), moist, hard, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 99.0 feet Water level depth at end of 1/24/07 = 92.0 feet
SS 25	50/5"	5		105	SAA except damp	Water level depth at end of 1/25/07 = 15.0

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3030**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 3 OF 3	HOLE NO. B-3030

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	X	13-18-19	18		110		SAA except contains trace shell fragments	feet Water level depth at beginning of 1/26/07 = 92.0 feet
SS 27	X	13-18-24	18		115		SAA	
SS 28	X	11-16-45	18		120		SAA	
SS 29	X	11-56-35	18		125		SAA except greenish gray (GLEY1 5/10GY), moist	
SS 30	X	12-50/6"-50/3"	15		130		SAA	
SS 31	X	12-50/3"	8		135		SAA except wet	
SS 32		50/2"	2		140		SAA	
SS 33		50/3"	2.5		145		SAA	
SS 34	X	14-16-24	18	72.0	150		SAA except moist, contains trace shell fragments Boring terminated at 150 feet	

SITE	Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-3030

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3031

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1141398.7 E 622042.0	1/23/2007	1/26/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Melvin-MACTEC	CME-55	4 Inches	219505	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.7			
AU 1					**SAND, with silt (SP-SM)** - Weak red (10R 4/3), damp, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
			217.7	5		
SS 2	4-7-6	13			**SAND, with silt and gravel (SP-SM)** - Weak red (10R 5/3), damp, medium dense, nonplastic, contains GRAVEL from previous construction	
SS 3	4-5-6	11		10	SAA except weak red (10R 5/4)	
SS 4	4-6-6	12			SAA except weak red (10R 4/3)	
SS 5	7-8-8	13		15	SAA except red (10R 5/6)	
SS 6	7-6-5	10		20	SAA except weak red (10R 5/4)	
			200.7			
SS 7	4-6-9	11		25	**SAND, with silt (SP-SM)** - Weak red (10R 4/4), damp, medium dense, nonplastic	
SS 8	7-9-9	13			SAA except light red (10R 6/8)	
			192.7	30		
UD 1		24			***SAND (SP)** - Light red (10R 7/8) to yellow (10YR 7/6), damp, medium dense Pocket Penetrometer: 1.2 TSF	Direct Push
			189.2			
UD 2		11.5		35	***SAND, silty (SM)** - Brownish yellow (10YR 6/6), damp, medium dense Pocket Penetrometer: 1.75 TSF	Direct Push
UD 3		11.5		40	SAA Pocket Penetrometer: 1.2 TSF	Direct Push
SS 10	8-12-14	10		45	SAA except brownish yellow (10R 6/8), -HCL	
SS	10-9-10	11			SAA except damp to moist	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3031

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3031

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11			170.7			
SS 12	7-8-9	14		55	**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/8), moist, medium dense, nonplastic to low plasticity, -HCL	
SS 13	8-8-14	12		60	SAA except brownish yellow (10YR 6/6), low plasticity	
SS 14	5-6-4	18	155.7	65	SAA except yellowish brown (10YR 5/6), nonplastic to low plasticity	
SS 15	6-6-8	18		70	**SAND, silty (SM)** - Yellow (10YR 7/8), moist, medium dense, nonplastic, -HCL	
SS 16	12-11-15	15	145.7	75	SAA except yellow (10YR 7/6)	Water level depth at end of 1/24/07 = Ground surface
SS 17	5-5-7	18	140.7	80	**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/6), moist, medium dense, low plasticity, -HCL	Water level depth at beginning of 1/25/07 = 34.0 feet
SS 18	4-8-12	18	135.7	85	**SAND, with silt (SP-SM)** - Very pale brown (10YR 8/3), moist, medium dense, nonplastic, -HCL	
SS 19	4-5-8	18		90	**SAND, silty (SM)** - Very pale brown (10YR 8/3), moist, medium dense, nonplastic, -HCL	
SS 20	8-22-18	15	127.7	95	SAA except very pale brown (10YR 8/2)	
			125.7		**GRAVEL, silty with sand (GM)** - Yellow (10YR 8/6), moist, medium dense to dense, nonplastic, contains shell hash, +HCL	Top of Utley Limestone at a depth of 95.0 feet
SS 21	7-9-12	18		100	**SILT (ML)** - Pale yellow (10YR 8/3), damp, very stiff, nonplastic, +HCL	
SS 22	28-31-36	18	118.7	105	SAA except pale yellow (2.5YR 7/4) to greenish gray (5/5GY), moist **SILT, sandy (ML)** - Greenish gray (5/5GY), damp, hard, nonplastic, +HCL	Top of Blue Bluff Marl at a depth of 104.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3031**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3031

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 23	☒	22-50/3"	9		110		SAA except greenish gray (GLEY2 6/5GY)	
SS 24		50/1"	1		115		SAA except greenish gray (GLEY1 5/5GY)	
				105.7				
SS 25		50/1"	1		120		**CLAY, silty with gravel (CL-ML)** - Greenish gray (GLEY1 7/5GY), moist, hard, low plasticity, +HCL	
				100.7				
SS 26	☒	14-17-50	18		125		**SILT, with sand (ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, nonplastic, fine grained SAND, +HCL	
SS 27	☒	50/5"	5		130		SAA except contains compacted SILT	
				90.7				
SS 28	☒	50/6"	6		135		**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 6/10Y), moist, hard, nonplastic, +HCL	
SS 29	☒	18-22-28	18		140		SAA except low to medium plasticity	
				80.7				
SS 30		50/1"	1		145		**CLAY, silty, sandy with gravel (CL-ML)** - Greenish gray (GLEY1 7/10Y), moist, hard, low plasticity, +HCL	
				75.7				
SS 31	☒	20-33-50	18	72.7	150		**SILT, sandy (ML)** - Greenish gray (GLEY1 6/10Y), moist, hard, low plasticity, +HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3031**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3032

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Gandy	N 1141158.2 E 621709.5	1/11/2007	1/17/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Melvin-MACTEC	CME-75	3 Inches	219505	149.5

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.1			
SS 1	4-4-6	18			**SAND, with silt (SP-SM)** - Red (10R 4/6), damp, loose, fine to medium grained, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	7-7-8	16			SAA except red (10R 5/6), medium dense	
SS 3	5-7-8	10		5	SAA except red (10R 5/8), moist	
SS 4	5-6-9	9.5	212.1		SAA except damp	
SS 5	5-7-7	11		10	**SAND, silty (SM)** - Red (10R 5/6), damp, medium dense, fine to medium grained, nonplastic	
SS 6	5-6-8	11	208.3		SAA	
			207.1		**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), damp, medium dense, fine grained, nonplastic	
SS 7	5-8-9	9.5		15	**SAND, silty (SM)** - Brownish yellow (10YR 6/6), damp, medium dense, fine grained, nonplastic	
SS 8	5-5-7	15		20	SAA except yellow (10YR 7/6), moist	
SS 9	5-7-7	10.5		25	SAA except brownish yellow (10YR 6/6), fine to medium grained	
			193.1			
SS 10	7-8-9	16		30	**SAND, clayey (SC)** - Yellow (10YR 7/6), damp, medium dense, fine grained, low plasticity	Water level depth at end of 1/11/07 = Top of casing
			188.1			
SS 11	5-7-10	10		35	**SAND, silty (SM)** - Yellow (10YR 7/6), moist, medium dense, fine grained, nonplastic to low plasticity	Water level depth at beginning of 1/12/07 = 15.7 feet
SS 12	7-10-14	14		40	SAA except moist to wet, fine to medium grained, nonplastic, contains minor lignite	
SS 13	6-9-9	14		45	SAA except no lignite	
SS	5-9-7	15.5			SAA except moist, fine grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3032

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3032

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			168.1			
SS 15	3-4-9	18	166.1	55	**CLAY (CH)** - Yellow (10YR 7/6), damp, stiff, high plasticity **SAND, clayey (SC)** - Brownish yellow (10YR 6/6), moist to wet, medium dense, fine grained, contains shell hash and lignite, -HCL	
SS 16	4-7-9	14	163.1	60	**SAND, silty (SM)** - Yellow (10YR 7/6), moist, medium dense, fine grained, nonplastic, -HCL	
SS 17	4-6-6	18	158.1	65	**SAND, with clay (SP-SC)** - Yellow (10YR 7/8), moist, medium dense, medium grained, nonplastic to low plasticity, lignitic, -HCL	
SS 18	4-6-11	16	153.1	70	**SAND, silty (SM)** - Yellow (10YR 7/8), wet, medium dense, fine to medium grained, nonplastic, -HCL	
SS 19	4-8-11	17.5		75	SAA except fine grained, contains minor lignite	Water level depth at end of 1/12/07 = Top of casing
SS 20	6-10-14	18	143.6	80	**SAND, clayey (SC)** - Light gray (10YR 7/2), moist, dense, fine grained, low plasticity, -HCL	Top of Utley Limestone at a depth of 76.5 feet
SS 21	4-5-8	18		85	SAA except very pale brown (10YR 8/2), medium dense	
SS 22	12-15-17	10.5	133.1	90	**SAND, silty (SM)** - Very pale brown (10YR 8/3), wet, dense, fine to medium grained, nonplastic, -HCL	
SS 23	6-6-7	13		95	SAA except medium dense, coarse grained	End logging by C. Gandy.
SS 24	5-8-11	18	123.1	100	**SILT, sandy (ML)** - Very pale brown (10YR 8/3), moist, very stiff, low plasticity, fine grained SAND, +HCL	Begin logging by L. Davis.
SS 25	11-29-27	18	115.1	105	SAA except very pale brown (10YR 8/4), hard	Top of Blue Bluff Marl at a depth of

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3032**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3032

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
								105.0 feet
SS 26	☒	16-50/5"	11		110		**SILT, with sand (ML)** - Greenish gray (GLEY1 5/1), damp, hard, nonplastic, fine grained SAND, +HCL	
SS 27	☒	19-22-47	18		115		SAA except contains minor shell hash and lignite	
SS 28	☒	13-29-34	18		120		SAA except greenish gray (GLEY1 6/1), low plasticity	
SS 29	☒	16-16-19	18		125		SAA except greenish gray (GLEY1 5/1)	
				93.1				
SS 30	☒	50/1"	1	91.1	130		**SAND, with silt (SP-SM)** - Greenish gray (GLEY1 6/1), wet, hard, medium grained, nonplastic, +HCL	
				88.1			**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 5/1), wet, hard, medium plasticity, fine grained SAND, +HCL	
SS 31	☒	16-35-50/4"	16		135		**SILT, with sand (ML)** - Greenish gray (GLEY1 6/1), moist, hard, medium plasticity, fine to medium grained SAND, +HCL	
SS 32	☒	18-28-50/2"	14		140		SAA except fine grained SAND	Water level depth at end of 1/16/07 = Ground surface
SS 33	☒	9-10-20	18		145		SAA except greenish gray (GLEY1 6/5GY), very stiff, low plasticity	
SS 34	☒	48-50/6"	12	70.6			SAA except light greenish gray (GLEY1 7/10Y), medium plasticity	
							Boring terminated at 149.5 feet	Water level depth at end of 1/17/07 = Ground surface

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3032**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3033

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1141405.3 E 621715.2	1/17/2007	1/23/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Melvin-MACTEC	CME-75	4 Inches	219505	149.3

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.3	∇ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.3			
SS 1	2-3-5	15			**SAND, with silt (SP-SM)** - Reddish gray (10R 5/1), damp, loose, nonplastic, fine to medium grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	5-7-7	17			SAA except weak red (10R 4/3), medium dense	
SS 3	5-4-5	11		5	SAA except weak red (10R 4/2), loose	
SS 4	4-5-5	13			SAA except weak red (10R 4/3), medium dense	
SS 5	2-3-3	12		10	SAA except loose	
SS 6	4-5-5	11			SAA	
UD 1		14		15	SAA except red (10R 4/6) Pocket Penetrometer: 0.5 TSF	Direct Push
SS 7	5-5-7	10		20	SAA except weak red (10R 4/3), damp to moist, medium dense	
SS 8	5-8-6	11		25	SAA except weak red (10R 4/3) and reddish yellow (5YR 6/6)	
			195.3			
UD 2		24		30	***SAND, silty (SM)** - Reddish yellow (5YR 7/8), moist, medium dense, low plasticity Pocket Penetrometer: 1.1 TSF	Direct Push
			190.3			
UD 3		15		35	**SAND, with silt (SP-SM)** - Reddish yellow (5YR 7/6), moist, medium dense Pocket Penetrometer: 0.75 TSF	Direct Push
UD 4		13		40	SAA except reddish yellow (5YR 7/7), nonplastic to low plasticity Pocket Penetrometer: 0.3 TSF	Direct Push
SS 9	9-12-15	11		45	SAA except brownish yellow (5YR 6/8), nonplastic	
			175.3			
SS	5-6-6	14			**SAND, silty (SM)** - Greenish yellow (10YR 6/8), moist, medium dense, nonplastic	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3033

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3033

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
10						
SS 11	8-6-12	16		55	SAA except brownish yellow (10YR 6/8), nonplastic to low plasticity	
			165.3			
SS 12	11-14-15	8.5		60	**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/6), moist, medium dense, -HCL	
			160.3			
SS 13	5-6-7	18		65	**SAND, clayey (SC)** - Yellow (10YR 7/6), moist, medium dense, fine to medium grained, low plasticity, -HCL	
			155.3			
SS 14	11-16-19	13		70	**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), moist, medium grained, dense, nonplastic, -HCL	
SS 15	6-7-10	14		75	SAA except very pale brown (10YR 8/4), medium dense	
			145.3			
SS 16	9-9-13	13		80	**SAND, silty (SM)** - Very pale brown (10YR 8/3), moist, medium dense, medium grained, low plasticity, -HCL	
SS 17	9-9-11	18		85	SAA except nonplastic to low plasticity	
			135.3			
SS 18	19-21-15	18		90	**SILT, with sand (ML)** - Greenish gray (GLEY2 8/5GY), moist, medium plasticity, fine grained SAND, +HCL	
			130.3			
SS 19	39-50/2"	8		95	**SAND, silty, clayey with gravel (SC-SM)** - Light greenish gray (GLEY2 8/10Y), moist, very dense, medium plasticity, +HCL	
			125.3			
SS 20	7-8-11	18		100	**SILT, sandy (ML)** - Yellow (10YR 8/6), moist, very stiff, medium plasticity, +HCL	Water level depth at end of 1/18/07 = Ground surface
			119.3			Water level depth at beginning of 1/22/07 = 46.0 feet
SS 21	55-50/3"	9		105	**SILT, with sand (ML)** - Greenish gray (GLEY1 5/10Y), damp, hard, nonplastic, +HCL	Top of Blue Bluff Marl at a depth of 103.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3033**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3033

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 22	☒	16-50/2"	8		110		SAA except low plasticity	Water level depth at beginning of 1/19/07 = 44.5 feet
SS 23	—	50/1"	1		115		SAA except nonplastic, contains cemented layers	
SS 24	—	50/2"			120		SAA	
SS 25	☒	17-22-27	18		125		SAA except greenish gray (GLEY1 6/10Y)	
SS 26	☒	23-50/5"	11		130		SAA except low plasticity	
SS 27	☒	40-43-50/3"	9		135		SAA except nonplastic	
				85.3				
SS 28	☒	10-26-50/3"	9		140		**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 6/10Y), moist, hard, high plasticity, contains cemented layers, +HCL	
				80.3				
SS 29	☒	20-50/3"	3		145		**SILT (ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, +HCL	
SS 30	☒	49-50/3"	9.6	73.5			SAA except moist Boring terminated at 149.3 feet	Water level depth at end of 1/22/07 = Ground surface

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3033**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3034

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1141399.8 E 621914.7	12/18/2006	12/21/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	4 Inches	219907	149.2

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
224.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			224.7			
SS 1	5-6-9	2	223.2		**SAND, silty with gravel (SM)** - Weak red (10R 4/4) and red (10R 4/6), moist, medium dense, fine to coarse grained, -HCL	Top of Fill at a depth of 0.0 feet
SS 2	6-7-6	16	222.2		**SAND (SP)** - Dark red (10R 3/6), moist, medium dense, fine grained	Top of Barnwell Group at a depth of 1.5 feet
SS 3	6-10-10	12.5	221.4	5	**SAND, with silt (SP-SM)** - Dark red (10R 3/6), moist, medium dense, fine grained	
SS 4	5-8-10	11			**SAND (SP)** - Light red (10R 6/6) and dark red (10R 3/6), moist, medium dense, very fine to fine grained	Water level depth at end of 12/18/06 = Borehole dry
SS 5	5-7-9	9			SAA except light red (10R 6/6) to pale red (10R 6/4)	
			214.2	10	SAA	
SS 6	3-5-6	9			**SAND, with silt (SP-SM)** - Dark red (10R 3/6), moist, medium dense, very fine to fine grained, -HCL	
SS 7	3-5-5	11	211.7	15	**SAND, silty (SM)** - Dark red (10R 3/6), moist, loose to medium dense, very fine to fine grained, -HCL	
			207.7			
SS 8	3-5-7	12		20	**SAND, with silt (SP-SM)** - Red (10R 5/8), moist, medium dense, very fine to fine grained, -HCL	
SS 9	5-9-8	6		25	SAA	
			197.7			
UD 1		14		30	SAA except fine to medium grained Pocket Penetrometer: 2.25 TSF	Direct Push
UD 2		15		35	**SAND, silty (SM)** - Red (10R 5/8) to yellowish brown (10YR 5/8), moist, medium dense, fine to medium grained Pocket Penetrometer: 1.0 TSF	Direct Push
UD 3		16.5		40	SAA except yellowish brown (10YR 5/8) Pocket Penetrometer: 0.25 TSF	Direct Push
			182.7			
SS 10	9-11-11	12.5		45	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), moist, medium dense, fine to medium grained, contains black manganese staining, -HCL	
			177.7			
SS	7-12-10	8.5			**SAND, silty (SM)** - Brownish yellow (10YR 6/8), moist, medium dense, fine to medium	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-3034

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3034

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11					grained, contains CLAY lenses and black manganese staining, -HCL	
			172.7			
SS 12	3-4-5	18		55	**CLAY, sandy (CL)** - Yellowish brown (10YR 5/8), moist, stiff, fine grained SAND, low plasticity, contains trace black manganese staining, -HCL	
			167.7			
SS 13	5-8-7	13	165.2	60	**SAND, silty (SM)** - Reddish yellow (7.5YR 6/6), moist, medium dense, fine to medium grained, -HCL	
			162.7		**SAND, clayey (SC)** - Reddish yellow (7.5YR 6/6), moist, medium dense, fine to medium grained, nonplastic, -HCL	
SS 14	4-3-5	18		65	**CLAY, sandy (CL)** - Yellowish brown (10YR 5/8), moist, medium stiff to stiff, low plasticity, fine to medium grained SAND, -HCL	
			157.7			
SS 15	4-9-11	18		70	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), moist, medium dense, fine to medium grained, -HCL	
			152.7			Top of Utley Limestone at a depth of 72.0 feet
SS 16	8-12-13	18		75	**SAND, silty (SM)** - Yellow (10YR 7/6), moist, medium dense, fine to medium grained, -HCL	
			147.7			
SS 17	WOH/12"-5	18		80	**SILT, sandy (ML)** - Pale yellow (2.5Y 8/4), moist, medium stiff, fine to medium grained, -HCL	
			142.7			
SS 18	10-18-17	18		85	**SAND, silty (SM)** - Pale yellow (2.5Y 8/3), moist, dense, fine to medium grained, contains trace shell fragments, -HCL	
			137.7			
SS 19	8-10-12	16		90	**SAND (SP)** - Pale yellow (2.5Y 8/3), moist, medium dense, fine to medium grained, contains trace shell fragments, -HCL	
			132.7			
SS 20	WOR/30"	18		95	**SILT, sandy (ML)** - Pinkish gray (7.5YR 7/2), wet, very soft, nonplastic, fine to medium grained SAND, contains trace shell fragments, -HCL	Loss of 90 gallons of drilling fluid from depths of 93.5 to 97.0 feet
			127.7			
SS 21	5-9-10	18		100	**SILT, with sand (ML)** - Pale olive (5Y 6/3), moist, very stiff, very fine grained SAND, nonplastic, +HCL	Loss of 100 gallons of drilling fluid from depths of 98.5 to 103.5 feet
			122.7			Water level depth at end of 12/19/06 = Ground surface
SS 22	7-10-19	18		105	**SILT (ML)** - Pale olive (5Y 6/3), moist, very stiff, nonplastic to low plasticity, contains SAND lenses, +HCL	Water level depth at beginning of 12/20/06 = 27.0 feet
			118.7			Boring collapsed to 73.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3034**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3034

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 23		10-15-26	18		110		***SILT, sandy (MH)** - Dark greenish gray (5GY 4/1), moist, hard, very fine to fine grained SAND, contains cemented shell fragments, +HCL	Top of Blue Bluff Marl at a depth of 106.0 feet
SS 24		17-27-29	18		115		SAA except contains abundant shell fragments	
UD 4			24		120		SAA Pocket Penetrometer: >4.75 TSF	Pitcher
SS 25		15-19-22	18		125		SAA	
SS 26		15-22-39			130		SAA	
SS 27		19-19-33	18		135		SAA	
				87.7				Water level depth at end of 12/20/06 = Ground surface
UD 5			13		140		***SAND, clayey (SC)** - Dark greenish gray (5GY 4/1), moist, very dense, very fine to fine grained, contains cemented shell fragments, +HCL Pocket Penetrometer: >4.75 TSF	Water level depth at beginning of 12/21/06 = 47.0 feet Boring collapsed to 105.0 feet Pitcher Changed to a 2 7/8" drill bit
SS 28		45-50/2"	7		145		SAA except greenish gray (5GY 5/1), contains abundant cemented shell fragments	
SS 29		18-50/2"	1	75.5			SAA Boring terminated at 149.2 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3034**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3035

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1142729.2 E 621675.4	2/9/2007	3/14/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	150.5

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.3	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.3			
SS 1	2-3-9	12	217.8		**SAND, clayey (SC)** - Red (2.5YR 5/8), damp, medium dense, fine to medium grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	5-7-12	12	216.1		**CLAY, with sand (CL)** - Red (2.5YR 5/8) and white (2.5YR 8/1), damp, very stiff	
SS 3	9-12-16	18		5	**SAND, silty (SM)** - Light red (2.5YR 7/8), moist, medium dense, fine to medium grained, subrounded	
SS 4	14-16-20	18			SAA except dense	
SS 5	12-16-16	18		10	SAA except brownish yellow (10YR 6/8), dry	
SS 6	12-14-16	15			SAA except red (2.5YR 5/8), medium dense to dense	
SS 7	12-12-15	18		15	SAA	
			202.3			
SS 8	8-8-9	12		20	**SAND, with silt (SP-SM)** - Brownish yellow (2.5YR 6/8), dry, medium dense, fine to medium grained, subrounded to subangular	
SS 9	5-6-8	15		25	SAA	
SS 10	3-5-6	12		30	SAA	
			187.3			
SS 11	3-4-6	18		35	**SILT, with sand (ML)** - Yellow (10YR 7/6), moist, stiff, low plasticity, fine grained SAND	
			182.3			
SS 12	4-6-8	18		40	**SAND, silty (SM)** - Brownish yellow (2.5YR 6/6), moist, medium dense, fine to medium grained, contains trace shell hash and manganese staining	
			177.3			
SS 13	2-2-3	18		45	**SAND, clayey (SC)** - Yellow (2.5YR 8/8), moist, medium stiff, contains 4" CLAY seam	
SS	3-2-4	18			SAA except contains some manganese staining	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3035

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3035

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			167.3			
SS 15	8-8-7	18		55	**SAND, silty (SM)** - Brownish yellow (2.5YR 6/6), moist, medium dense, medium to coarse grained, subrounded to subangular, contains trace manganese staining	
SS 16	10-15-7	12	157.3	60	SAA	
SS 17	7-11-14	6		65	**SAND (SP)** - Yellow (10YR 8/6), wet, medium dense, medium to coarse grained, subrounded to subangular	
SS 18	6-9-12	7	147.3	70	SAA	
SS 19	5-6-7	12	141.3	75	**SAND, with silt (SP-SM)** - Light greenish gray (GLEY2 8/10Y), wet, medium dense, medium to coarse grained	
SS 20	45-50/3"	6	137.3	80	**SAND, clayey with gravel (SC)** - White (GLEY1 8/N), moist, very dense, contains cemented shell fragments, +HCL	Top of Utley Limestone at a depth of 78.0 feet Loss of circulation
SS 21	50/3"	0		85	**NO RECOVERY**	
			129.3	90		Top of Blue Bluff Marl at a depth of 90.0 feet End logging by M. Cooke. Begin logging by L. Davis. Installed 6" steel casing to a depth of 95.0 feet Pitcher
UD 1		12	121.3	95	***SILT(MH)** - Greenish gray (GLEY1 5/10Y), damp, high plasticity, +HCL Pocket Penetrometer: >4.5 TSF	
SS 22	14-50/5"	11		100	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, low plasticity, contains shell hash and organics, +HCL	
UD 2		22	112.3	105	SAA except greenish gray (GLEY1 6/10Y), no shells or organics Pocket Penetrometer: >4.5 TSF	Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3035**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3035

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 23	50/5"	5		110	**CLAY (CL)** - Greenish gray (GLEY1 6/10Y), moist, hard, nonplastic to medium plasticity, contains some organics and compacted zones, +HCL	
			107.3			
SS 24	21-22-35	18		115	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, contains shell hash, +HCL	
			102.3			
SS 25	50/5"	5		120	**CLAY (CL)** - Light greenish gray (GLEY1 7/10Y), moist, hard, nonplastic to medium plasticity, contains some compacted zones, +HCL	Water level depth at end of 3/13/07 = Top of casing
			97.3			
SS 26	12-41-35	18		125	**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 7/5GY), damp, hard, low plasticity, contains some compacted zones, +HCL	Water level depth at beginning of 3/14/07 = 42.0 feet
SS 27	50/1"	1		130	SAA except light greenish gray (GLEY1 8/10Y), damp to moist, nonplastic to low plasticity	
UD 3		24		135	SAA except light greenish gray (GLEY1 7/10Y), damp, low plasticity, contains organics Pocket Penetrometer: 4.0 TSF	Pitcher
			82.3			
SS 28	21-22-22	18		140	**CLAY (CL)** - Light greenish gray (GLEY1 7/10Y), damp, hard, low plasticity, +HCL	
			77.3			
SS 29	22-36-30	18		145	**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 7/10Y), damp, hard, low plasticity, +HCL	
UD 4		24		150	SAA Pocket Penetrometer: 3.0 TSF	Pitcher
			69.3 / 68.8		**SAND, silty, clayey (SC-SM)** - Reddish brown (2.5YR 4/4), moist, low plasticity, -HCL	Top of Still Branch Formation at a depth of 150.0 feet
					Boring terminated at 150.5 feet	Water level depth at end of 3/14/07 = Top of casing

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3035**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3036

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1142441.6 E 621676.0	11/8/2006	11/14/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	4 Inches	211797	155.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
217.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			217.9			
SS 1	14-16-16	16	217.5		**GRAVEL (GP)** - Parking lot	Top of Fill at a depth of 0.0 feet
SS 2	17-22-24				***SAND, silty (SM)** - Red (2.5YR 4/6), dry, dense	Top of Barnwell Group at a depth of 0.4 feet
SS 3	7-10-15	11		5	SAA except yellowish red (5YR 5/8), fine grained SAA except medium dense, fine to medium grained	
SS 4	7-12-14	8			SAA except yellowish red (5YR 5/8) and red (2.5YR 4/6), fine grained	
SS 5	7-10-13	12		10	SAA except red (10R 4/6)	
SS 6	11-13-16	5			SAA except red (2.5YR 4/8), fine to medium grained	
SS 7	9-11-11	11		15	SAA	
SS 8	11-11-17	9		20	SAA except reddish yellow (7.5YR 7/8) and yellowish red (5YR 5/8)	
SS 9	11-12-9	9		25	SAA except reddish yellow (7.5YR 7/8)	
SS 10	8-6-10	10		30	SAA	
			185.9			
SS 11	22-14-14	18	183.6	35	**SAND, clayey (SC)** - Yellow (10YR 7/6), medium dense **SAND (SP)** - Very pale brown (10YR 7/4), medium dense	
			180.9			
SS 12	7-8-7	18		40	**SAND, clayey (SC)** - Yellow (2.5Y 7/6), damp, medium dense	
			175.9			
SS 13	3-4-6	18		45	***SAND, silty (SM)** - Yellow (2.5Y 7/6), damp, medium dense, fine grained	
SS	7-12-14	7			SAA except yellow (10YR 8/8), fine to medium grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3036

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3036

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	9-11-13	8		55	SAA except yellow (10YR 7/6)	
SS 16	7-8-5	8		60	SAA except pale yellowish brown (10YR 7/4), moist	
			155.9			Water level depth at end of 11/8/07 = Ground surface
SS 17	5-7-8	3		65	**SAND, clayey (SC)** - Light greenish gray (GLEY1 8/1/10Y), damp, medium dense, fine grained	Loss of circulation at a depth of 62.5 feet
SS 18	4-3-4	14		70	SAA except light greenish gray (GLEY1 8/1), loose	
			144.4			
SS 19	17-22-50/2"	10		75	**CLAY, with sand (CL)** - Light greenish gray (GLEY1 8/1), moist, very dense, fine grained SAND, contains shell fragments	Top of Utley Limestone at a depth of 73.5 feet
			140.9			Installed casing to a depth of 77.0 feet
SS 20	50/1"	1		80	**GRAVEL, clayey (GC)** - Pale yellow (2.5Y 8/2), moist, very dense, contains shell fragments	
			135.9			
SS 21	5-7-9	18		85	***SILT, sandy (ML)** - Light yellowish brown (2.5Y 6/3), dry to damp, very stiff, low plasticity	
			129.9			
SS 22	50/4"	4		90	***SAND, silty (SM)** - Greenish gray (GLEY1 5/1/5GY), damp, very dense	Top of Blue Bluff Marl at a depth of 88.0 feet
SS 23	50/1"	1		95	SAA except wet, contains shell fragments	
			120.9			
SS 24	15-19-25	18		100	***SILT (MH)** - Greenish gray (GLEY1 5/1/10Y), damp, hard	
			115.9			
SS 25	50/1"	0		105	**NO RECOVERY**	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3036**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3036

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	50/1"	0		110	**NO RECOVERY**	
			105.9			
SS 27	50/2"	2		115	***CLAY (CH)** - Gray (GLEY1 5/1/10Y), damp, hard, contains shell hash	
SS 28	50/2"	2		120	SAA	
SS 29	42-33-50/2"	12		125	SAA	
SS 30	27-50/4"	10		130	SAA	
SS 31	13-14-32	12		135	SAA	
SS 32	15-14-30	12		140	SAA	
SS 33	12-15-24	12		145	SAA	
SS 34	18-17-31	12		150	SAA	Water level depth at beginning of 11/14/07 = 62.33 feet
SS 35	10-15-25	12	64.4 62.9	155	***SAND, with clay (SP-SC)** - Dark gray (GLEY1 4/N), wet, dense Boring terminated at 155 feet	Top of Still Branch Formation at a depth of 153.5 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3036**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3037

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1143057.4 E 621768.9	2/14/2007	2/16/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Bilbrey-Miller Drilling	CME-85	4 Inches	270256	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.9			
SS 1	2-7-11	12	221.4		**SAND (SP)** - Red (2.5YR 5/8), damp, medium dense, fine grained, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	8-10-13	14	219.7		**SAND, with silt (SP-SM)** - Red (2.5YR 5/6), damp, medium dense, fine grained, nonplastic, -HCL	
SS 3	7-12-15	15	217.4	5	**SAND, with silty clay (SP-SC)** - Yellowish red (10YR 5/6), damp, medium dense, fine grained, low plasticity, -HCL	
SS 4	10-24-24	15	214.9		**SAND, with silt (SP-SM)** - Light red (2.5YR 6/8), damp, dense, fine grained, nonplastic, -HCL	
SS 5	3-6-5	14		10	**SAND, silty, clayey (SC-SM)** - Red (2.5YR 5/8), damp, medium dense, fine grained, low plasticity, -HCL	
SS 6	8-11-13	14	209.9		SAA except yellowish red (5YR 5/6)	
SS 7	11-10-12	14	206.2	15	**SAND, with silty clay (SP-SC)** - Red (2.5YR 6/8), damp, medium dense, fine grained, nonplastic to low plasticity, -HCL	
SS 8	8-15-15	12	201.2	20	**SAND, silty, clayey (SC-SM)** - Yellowish red (5YR 5/6), moist, medium dense to dense, fine grained, with clayey silt,low plasticity, -HCL	
SS 9	10-9-16	13	196.2	25	**SAND, silty (SM)** - Reddish yellow (7.5YR 7/8), moist, medium dense, fine grained, nonplastic, -HCL	
SS 10	11-15-12	14		30	**SAND, silty, clayey (SC-SM)** - Red (2.5YR 4/8), moist, medium dense, fine grained, low plasticity, -HCL	
SS 11	8-8-8	17	186.2	35	SAA except light red (2.5YR 6/8)	
SS 12	3-6-7	18	181.2	40	**CLAY, silty, sandy (CL-ML)** - Brownish yellow (10YR 6/6), moist, stiff, medium plasticity, -HCL	Water level depth at end of 2/14/2007 = Ground surface
SS 13	3-8-10	18		45	**SAND, silty, clayey (SC-SM)** - Reddish yellow (7.5YR 6/8), moist, medium dense, fine grained, with silty clay matrix, low plasticity, -HCL	Water level depth at beginning of 2/15/2007 = 39.0 feet
SS	3-5-6	18			SAA	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3037

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3037

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			171.2			
SS 15	6-5-5	14		55	**SAND, silty (SM)** - Reddish yellow (7.5YR 7/8), moist, loose to medium dense, fine grained, nonplastic, -HCL	
			166.2			
SS 16	8-13-13	12		60	**SAND, with silt (SP-SM)** - Yellow (10YR 7/8), moist, medium dense, fine to medium grained, nonplastic, -HCL	
SS 17	8-11-11	12		65	SAA	
			156.2			
SS 18	1-2-4	18		70	**SAND, clayey (SC)** - Reddish yellow (7.5YR 8/6), moist, loose, fine grained with clayey matrix, low to medium plasticity, -HCL	
			151.2			
SS 19	7-13-11	13		75	**SAND, silty, clayey (SC-SM)** - Yellow (2.5Y 8/6), moist, medium dense, fine to medium grained, low plasticity, -HCL	
			146.2			
SS 20	2-2-2	11		80	**SAND, with silty clay (SP-SC)** - Yellow (10YR 8/6), moist, very loose to loose, fine to medium grained, nonplastic, -HCL	Loss of circulation at a depth of 79.0 feet
			139.9			
SS 21	50/1"	1		85	**CLAY, silty, gravelly with sand (CL-ML)** - Pale yellow (2.5Y 8/4), moist, hard, mostly clay with gravel composed of "lithified" clay material, nonplastic to low plasticity, +HCL	Top of Utley Limestone at a depth of 83.0 feet
			135.9			Top of Blue Bluff Marl at a depth of 87.0 feet
SS 22	11-13-21	18		90	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10Y), damp, hard, low plasticity, +HCL	Regained circulation at a depth of 90.0 feet
SS 23	12-13-18	18		95	SAA except greenish gray (GLEY1 5/GY)	
SS 24	50/5"	5		100	SAA except greenish gray (GLEY1 6/10Y)	
SS 25	10-12-21	18		105	SAA except greenish gray (GLEY1 5/10Y)	
			116.2			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3037**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3037

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	11-14-31	18		110	**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, +HCL	
			111.2			
SS 27	15-17-23	18		115	**CLAY, sandy (CL)** - Greenish gray (GLEY1 6/10Y), damp to moist, hard, low plasticity, contains shell hash, +HCL	
			106.2			
SS 28	6-12-26	18		120	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, +HCL	
SS 29	50/1"	1		125	SAA except, moist, low to medium plasticity, -HCL	
SS 30	50/3"	3		130	SAA except greenish gray (GLEY1 7/10Y)	
SS 31	17-20-24	18		135	SAA except greenish gray (GLEY1 6/10Y), damp, low plasticity, +HCL	
SS 32	17-26-24	18		140	SAA except greenish gray (GLEY1 7/5GY), nonplastic	Water level depth at beginning of 2/16/2007 = 38.0 feet
			81.2			
SS 33	18-33-37	18		145	**CLAY (CL)** - Greenish gray (GLEY1 7/10Y), moist, hard, medium plasticity, +HCL	
SS 34	14-15-21	18	73.9		SAA except low plasticity	
			72.9	150	**SAND, silty, clayey with gravel (SC-SM)** - Very dark greenish gray (GLEY1 3/5GY), moist, dense, low plasticity, -HCL	Top of Still Branch Formation at a depth of 149.0 feet
					Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3037**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-3038

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1141883.0 E 621543.2	12/14/2006	12/15/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	98.9

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.8			
SS 1	17-15-8	10	219.3		**GRAVEL (GP)** - Dark grey (GLEY 1 4/N), dry, medium dense	Top of Fill at a depth of 0.0 feet
SS 2	7-5-6	12			**SAND (SP)** - Red (2.5YR 4/6), dry, medium dense	Top of Barnwell Group at a depth of 1.5 feet
SS 3	3-5-12	12		5	SAA except red (10R 4/8)	
SS 4	6-10-12	8			SAA	
SS 5	6-10-10	12		10	SAA	
SS 6	8-7-12	12			SAA except red (10R 4/6 and 10R 5/6)	
SS 7	13-14-16	12		15	SAA except red (10R 5/3 and 10R 4/8)	
SS 8	5-8-6	9		20	SAA except red (10R 4/6)	
SS 9	8-8-10	7		25	SAA	
SS 10	9-7-9	11		30	SAA except reddish yellow (7.5YR 6/8)	
SS 11	18-19-10	9		35	SAA except yellow (10YR 6.5/8), damp to moist	
SS 12	2-3-5	16		40	SAA except yellow (10YR 6.5/8), moist, loose, contains traces of CLAY	
			178.8			
SS 13	6-5-10	18		45	**SAND, clayey (SC)** - Yellow (10YR 7/6), moist, medium dense	
			173.8			
SS	12-12-12	16			**SAND (SP)** - Brownish yellow (10YR 6/8), dry, medium dense	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3038

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-3038

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			168.8			
SS 15	6-5-5	18		55	**SAND, clayey (SC)** - Very pale brown (10YR 8/2) to brownish yellow (10YR 6/8), damp, medium dense	
			163.8			
SS 16	8-10-12	8		60	**SAND (SP)** - Yellow (10YR 7/8), damp, medium dense	Water level depth at end of 12/14/2006 = Ground surface
			158.8			
SS 17	5-8-7	18		65	**CLAY, sandy (SC)** - Pale brown (10YR 8/3), moist, very stiff, -HCL	
			154.3		**CLAY, gravelly (CL)** - Light greenish grey, moist, very stiff, contains shell hash, +HCL	
SS 18	7-13-10	18		70		
			148.8			
SS 19	15-15-10	18		75	**SAND, clayey (SC)** - Pale yellow (2.5Y 8/2), moist, medium dense, contains shell hash, +HCL	
			143.8			
SS 20	12-10-12	15		80	**SAND (SP)** - Light grey (10YR 7/2) moist, medium dense, contains shell hash, +HCL	
			138.8			
SS 21	50/1"	1		85	**SAND, clayey (SC)** - Pale yellow (5Y 8/3), moist, very dense	
			133.8			Top of Uttley at a depth of 87.0 feet
SS 22	50/2"	2		90	**GRAVEL, clayey with sand (GC)** - Pale yellow (5Y 8/2), moist, very dense, contains shells	
			128.8			Loss of circulation at a depth of 92.0 feet
SS 23	5-6-8	18		95	**CLAY (CL)** - Pale yellow (5Y 7/3), damp, stiff, +HCL	
			122.3			
SS 24	50/5"	5	121.8		**CLAY (CL)** - Dark greenish grey (GLEY1 4/5GY), hard, +HCL Boring terminated at 98.92 feet	Top of Blue Bluff Marl at a depth of 98.5 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3038**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-3039

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1142917.7 E 621753.5	3/8/2007	3/12/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	219505	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.2			
SS 1	2-4-9	13			**SAND, with silt (SP-SM)** - Red (2.5YR 4/8), damp, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	8-11-13	12			SAA except yellowish red (5YR 5/6)	
			215.9			
SS 3	9-4-10	13		5	**SAND, clayey (SC)** - Red (10R 4/8), moist, medium dense, fine grained, medium plasticity	Water level depth at end of 3/8/07 = Top of casing
SS 4	4-10-12	12			SAA	Water level depth at beginning of 3/9/07 = Top of casing
SS 5	5-10-10	14			SAA except light red (10R 6/8)	
			208.7	10		
SS 6	6-10-11	13			**SAND, with clay (SP-SC)** - Red (10R 5/8), moist, medium dense, fine to medium grained, nonplastic to low plasticity	
			206.2			
SS 7	6-9-8	14		15	**SAND, with silt (SP-SM)** - Red (10R 4/8), moist, medium dense, fine to medium grained, nonplastic	
			202.2			
SS 8	6-7-9	14		20	**CLAY (CL)** - Pink (5YR 7/4), moist, very stiff, high plasticity	
			197.2			
SS 9	3-3-6	12		25	**SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/6), wet, loose, fine grained	
			192.2			
SS 10	2-2-5	13		30	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), wet, loose, fine grained, medium to high plasticity	
			187.2			
SS 11	2-2-3	15		35	**CLAY, sandy (CL)** - Yellow (10YR 7/6), wet, medium stiff, high plasticity	
			182.2			
SS 12	2-3-4	9		40	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), wet, loose, fine grained, -HCL	
			177.2			
SS 13	1-2-3	16		45	**CLAY (CH)** - Yellow (10YR 8/6), wet, medium stiff, high plasticity, -HCL	
			172.2			
SS	1-1-2	13			**SAND, with clay (SP-SC)** - Reddish yellow (7.5YR 6/8), wet, very loose, fine grained,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-3039

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-3039

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					nonplastic, +HCL	
			167.2			
SS 15	1-2-2	8		55	**SAND (SP)** - Very pale brown (10YR 7/4), wet, very loose, fine grained, -HCL	
			162.7			Top of Utley Limestone at a depth of 56.5 feet
SS 16	1-1-WOH/6"	10		60	**SAND, with clay (SP-SC)** - Yellow (10YR 7/8), wet, very loose, fine grained, -HCL	
			157.2			
SS 17	1-1-3	3		65	**CLAY, silty (CL-ML)** - Yellow (5Y 8/6), wet, soft, medium plasticity, +HCL	
			152.2			
SS 18	3-4-6	8		70	**SAND (SP)** - Yellow (2.5Y 8/6), wet, loose, fine grained, -HCL	
SS 19	2-2-2	10		75	SAA except pale yellow (2.5Y 8/4), very loose	
			142.2			
SS 20	WOH/6"-1-1	7		80	**SILT, with sand (ML)** - Olive brown (2.5Y 4/4), wet, very soft, fine grained SAND, +HCL	
			137.7			Top of Blue Bluff Marl at a depth of 81.5 feet
SS 21	19-20-21	18		85	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10GY), wet, hard, high plasticity, +HCL	Water level depth at end of 3/9/07 = Top of casing End logging by D. Atkinson. Begin logging by S. Woodham.
SS 22	8-18-22	18		90	SAA except greenish gray (GLEY1 10/10Y), damp, low plasticity, contains shell fragments	
			127.2			
SS 23	50/4"	3		95	**CLAY (CL)** - Greenish gray (GLEY1 5/5GY), damp, hard, low plasticity, contains shell fragments, +HCL	Installed 3" steel casing to a depth of 93.5 feet
SS 24	50/3"	3		100	SAA	
SS 25	8-17-50/5"	16		105	SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3039**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-3039

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	11-26-26	18		110	SAA except greenish gray (GLEY1 6/10Y)	
SS 27	8-50/5"	10		115	SAA	
SS 28	10-18-22	18		120	SAA	
SS 29	17-50/5"	10		125	SAA except light greenish gray (GLEY1 7/10Y), no shell fragments	
SS 30	14-15-22	18		130	SAA	
SS 31	4-10-31	18		135	SAA	
SS 32	10-10-50/5"	17		140	SAA except low to medium plasticity, contains cemented layer at bottom	
SS 33	8-13-25	18		145	SAA except contains shell fragments	
			72.2			Top of Still Branch Formation at a depth of 147.0 feet
SS 34	12-38-50/5"	15	69.3	150	**SAND, with silt (SP-SM)** - Very dark grayish green (GLEY1 3/5G), moist, hard, fine grained Boring terminated at 149.92 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-3039**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 8	B-4001(DH)

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142599.5 E 621000.2	11/29/2006	1/8/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	10 Inches	219907	399.9

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.9			
SS 1	12-16-17	16	218.3		**GRAVEL, with sand (GP)** - Brown (10YR 4/3), dry to damp, dense, fine to medium grained SAND	Top of Fill at a depth of 0.0 feet
SS 2	18-18-14	16	215.6		***SAND, silty (SM)** - Reddish yellow (5YR 5/6), moist, dense, fine grained	Top of Barnwell Group at a depth of 0.6 feet
SS 3	5-5-5	15	213.4	5	SAA; **SAND, with silt (SP-SM)** - Yellowish red (5YR 5/6), moist, loose, very fine to fine grained	Begin drilling with a 3 7/8" drill bit.
SS 4	6-8-7	8			**SAND, clayey (SC)** - Yellowish red (5YR 5/6), moist, medium dense, fine to medium grained	
SS 5	5-8-8	12	208.4	10	SAA	
SS 6	8-9-10	12	205.9		**SAND, silty (SM)** - Yellowish red (5YR 5/6), moist, medium dense	
SS 7	7-9-10	11.5	201.9	15	**SAND, with silt (SP-SM)** - Brown (7.5YR 5/6) and brownish yellow (10YR 6/6), moist, medium dense	
SS 8	6-8-11	15.5	196.9	20	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), moist, medium dense, fine to medium grained	
SS 9	3-4-6	18	191.9	25	***CLAY, silty with sand (CL-ML)** - Yellow (2.5Y 7/6) and brownish yellow (10YR 6/8), moist, stiff, fine grained, low plasticity	
SS 10	3-4-5	18	186.9	30	**CLAY, sandy (CL)** - Yellow (2.5Y 7/6), moist, medium stiff, very fine to fine grained, low plasticity	
SS 11	4-5-3	10		35	**SAND, clayey (SC)** - Yellow (2.5Y 7/6) and light yellowish brown (2.5Y 6/4), moist, loose, fine to coarse grained, contains shell fragments	
SS 12	3-3-4	18	176.9	40	SAA except pale yellow (5Y 7/4), very fine to fine grained, no shells	
SS 13	6-9-11	18		45	***SAND, silty (SM)** - Pale yellow (5Y 7/4), moist, medium dense, very fine to fine grained	
SS	9-12-6	18			SAA except pale yellow (5Y 8/3), fine to very coarse grained, contains cemented shell	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4001(DH)

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 8	B-4001(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14							fragments, +HCL	
SS 15		10-13-16	17.5		55		SAA except fine to medium grained, no cementation	
SS 16		15-16-22	18		60		SAA except pale yellow (5Y 8/2), dense, fine to very coarse grained	
				156.9				
SS 17		8-9-34	18		65		**SILT, sandy (ML)** - Pale yellow (2.5Y 8/3 and 8/2), moist, hard, fine to very coarse grained, contains cemented shell fragments, +HCL	
				151.9				
SS 18		19-16-15	16		70		**SAND, silty (SM)** - Pale yellow (5Y 8/4), moist, dense, fine to medium grained, contains shell fragments and cementation, +HCL	
SS 19		42-26-35	18		75		SAA except very dense, less shell fragments	
				141.9				
SS 20		27-32-39	17		80		**SAND (SP)** - Pale yellow (5Y 8/2), moist, very dense, medium grained, contains trace shell fragments, +HCL	Water level depth at end of 11/29/06 = Ground surface Changed to a 9 7/8" drill bit
				136.9				
SS 21		39-13-18	17		85		**SAND, silty (SM)** - Pale yellow (2.5Y 7/4), moist, dense, medium to coarse grained, contains shell fragments and cementation, +HCL	Water level depth at beginning of 11/30/06 = 39.0 feet
				131.9				Water level depth at end of 11/30/06 = Ground surface
SS 22		7-10-15	18	129.2	90		**SILT, sandy (ML)** - Light yellowish brown (2.5Y 6/3) and brownish yellow (10YR 5/8), moist, very stiff, low plasticity, very fine to fine grained SAND ***SILT, with sand (MH)** - Dark greenish gray (10Y 4/1), moist, very stiff, low plasticity, +HCL	Water level depth at beginning of 12/1/06 = 27.0 feet Top of Blue Bluff Marl at a depth of 89.7 feet
SS 23	○ + ▲ □ 101	17-26-47	18 18		95		SAA except hard, contains cemented zones	Water level depth at end of 12/1/06 = Ground surface Water level depth at beginning of 12/4/06 = 63.0 feet
				121.9				
UD 1			21		100		***SILT, sandy (MH)** - Dark greenish gray (GLEY2 4/10G), damp, +HCL Pocket Penetrometer: >4.5 TSF	Reamed hole with 9 7/8" cone roller bit Installed 6" steel casing to a depth of 97.5 feet End logging by B. Sharp. Begin logging by A. Taylor.
SS 24		50/1"	1		105		SAA except hard	End drilling by Oglesby-MACTEC. Begin drilling by

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4001(DH)**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 8	B-4001(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	14-50/5.5"	11.8		110	SAA	Melvin-MACTEC with a CME-55, hammer serial #219505. Water level depth at beginning of 12/11/06 = 20.2 feet
			106.9			Installed 6" casing to a depth of 97.5 feet
UD 2		0		115	**NO RECOVERY**	Pitcher Pitcher
			101.9			
UD 3		7.5		120	***SAND, silty (SM)** - Dark greenish gray (GLEY2 4/10G), damp, +HCL Pocket Penetrometer: >4.5 TSF	Pitcher
UD 4		18.5			SAA Pocket Penetrometer: >4.5 TSF	Water level depth at end of 12/11/06 = 12.75 feet Pitcher
SS 26	13-20-50/4"	16		125	SAA except dry	Water level depth at beginning of 12/12/06 = 9.33 feet
SS 27	20-50/5"	11		130	SAA	
			86.9			
UD 5		15		135	***SILT (ML)** - Dark greenish gray (GLEY2 4/10G), damp, +HCL Pocket Penetrometer: >4.5 TSF	Pitcher
			81.9			
SS 28	50/3"	3		140	***SILT, with sand (ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, +HCL	
			76.9			
SS 29	15-20-22	18		145	***CLAY, with sand (CH)** - Greenish gray (GLEY1 6/10Y), damp, hard, +HCL	
SS 30	21-31-32	18		150	SAA	Water level depth at end of 12/12/06 = 11.4 feet
			66.9			
SS 31	15-19-21	18		155	***CLAY, with sand (CL)** - Greenish gray (GLEY2 4/10G), damp, hard, +HCL	Water level depth at beginning of 12/13/06 = 31.33 feet
UD 6		14		160	SAA Pocket Penetrometer: >4.5 TSF	Pitcher
SS	50/2"				SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4001(DH)**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 8	B-4001(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
32			52.3	165		
						Top of Still Branch Formation at a depth of 166.6 feet
SS 33	8-14-25	18		170	***SAND, silty (SM)** - Very dark greenish gray (GLEY1 3/10Y), damp, dense, fine to medium grained, -HCL	
				175		
UD 7		12		180	SAA Pocket Penetrometer: 0.5 TSF	Pitcher
				185		
SS 34	18-21-37	13		190	SAA except very dense	
				195		
UD 8		7		200	SAA Pocket Penetrometer: 1.75 TSF	Pitcher
				205		
SS 35	18-17-20	18	9.9	210	SAA **SILT (ML)** - Very dark greenish gray (GLEY1 3/5G), damp, hard, -HCL	Water level depth at end of 12/13/06 = 25.8 feet Water level depth at beginning of 12/14/06 = 77.0 feet
				215		
SS 36	32-50/3"	9	-0.1	220	SAA **SAND (SP)** - Dark greenish gray (GLEY2 4/5BG), very dense, medium to coarse grained,	Top of Congaree Formation at a depth of 219.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4001(DH)**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	5 OF 8	B-4001(DH)

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					subangular, -HCL	
			-6.1	225		
SS 37	8-11-19	18	-10.6	230	**SILT, with sand (ML)** - Dark greenish gray (GLEY1 4/5G), damp, very stiff, -HCL **SILT (ML)** - White (2.5Y 8/1), damp, very stiff, -HCL	
			-16.1	235		
UD 9		10		240	**SILT, sandy (ML)** - Light greenish gray (GLEY2 7/10BG), damp, -HCL Pocket Penetrometer: 1.75 TSF	Pitcher
			-26.1	245		
UD 10		6		250	**SAND (SP)** - Light gray (2.5Y 7/1), damp, +HCL Pocket Penetrometer: 1.5 TSF	Pitcher
			-36.1	255		
UD 11		0		260	**NO RECOVERY**	Pitcher
SS 38	WOH/18"	0	-43.1		**NO RECOVERY**	
SS 39	47-50/5"	9		265	**SAND, with silty clay (SP-SC)** - White (2.5Y 8/1), damp, very dense, medium to coarse grained, -HCL	Water level depth at beginning of 12/15/06 = 78.0 feet
SS 40	47-50/5"	8		270	SAA	Water level depth at beginning of 12/18/06 = 78.5 feet
				275		

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4001(DH)**

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	6 OF 8	B-4001(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 41	50/5.25"	2		280	SAA	Water level depth at end of 12/18/06 = 44.0 feet End logging by A. Taylor. Begin logging by M. Harvey. Water level depth at beginning of 12/19/06 = 84.0 feet
			-66.1	285		
SS 42	50/5"	5		290	**SAND, silty (SM)** - Dark gray (GLEY1 4/N), wet, very dense, fine grained, +HCL	
				295		
UD 12		8.5		300	SAA except gray (2.5Y 6/1), wet, medium grained	Pitcher
			-84.1			
				305		
UD 13		12		310	**CLAY (CL)** - Light greenish gray (GLEY1 7/1/10Y), moist, -HCL Pocket Penetrometer: >4.5 TSF	Pitcher Water level depth at end of 12/19/06 = Ground surface
			-96.1	315		Water level depth at beginning of 12/20/06 = 79.5 feet
SS 43	37-42-47	18		320	**CLAY (CH)** - Light yellowish olive brown (2.5Y 5.5/4) and light bluish gray (GLEY2 8/1/5PB), moist, hard, high plasticity	Water level depth at end of 12/20/06 = Ground surface End logging by M. Harvey. Begin logging by A. Taylor. Water level depth at beginning of 1/2/07 = 78.0 feet
			-106.1	325		
SS 44	17-20-31	18	-110.6	330	**SAND, clayey (SC)** - White (2.5Y 8/1), moist, very dense, coarse grained, -HCL **CLAY (CH)** - Olive (5Y 4/3), moist, very dense, -HCL	
			-116.1	335		

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4001(DH)**

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	7 OF 8	B-4001(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
								Top of Snapp Formation at a depth of 335.0 feet
SS 45		17-28-42	18		340		**CLAY, silty (CL-ML)** - Mottled reddish brown (2.5YR 4/4), yellowish brown (10YR 5/6), and white (2.5Y 8/1), damp, hard, -HCL	Water level depth at end of 1/2/07 = 42.0 feet
				-126.1	345			Water level depth at beginning of 1/3/07 = 58.0 feet
UD 14			12		350		**CLAY, sandy (CH)** - Light gray (7.5YR 7/1), damp, -HCL Pocket Penetrometer: >4.5 TSF	Pitcher
				-136.1	355			
SS 46		50/5"	5		360		**SAND, with clay (SP-SC)** - White (2.5Y 8/1), moist, very dense, medium to very coarse grained, subangular, -HCL	
				-146.1	365			Water level depth at beginning of 1/4/07 = 62.5 feet
SS 47		22-50/5"	11		370		**CLAY (CH)** - Light bluish gray (GLEY2 7/10B), weak red (10R 4/2), and yellowish brown (10YR 5/8), damp, hard, -HCL	
				-156.1	375			
SS 48		19-50/5.5"	10		380		**SAND, with clay (SP-SC)** - White (7.5YR 8/1), damp, very dense, medium grained, -HCL	
					385			
SS 49		50/5.25"			390		SAA except medium to coarse grained	Water level depth at beginning of 1/5/07 = 71.0 feet Water level depth at end of 1/5/07 = 47.5

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4001(DH)**

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GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 8 OF 8	HOLE NO. B-4001(DH)

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
						395			feet Water level depth at beginning of 1/8/07 = 71.0 feet
SS 50	☒		▲9-31-50/5"	16	-181.0			SAA Boring terminated at 399.92 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-4001(DH)

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GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 5	B-4002(DH)

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142600.2 E 621072.2	1/2/2007	1/24/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	6 Inches	219907	250.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.1			
SS 1	11-16-16	13	218.3		**SAND, with gravel (SP)** - Brown (10YR 4/3), damp, dense	Top of Fill at a depth of 0.0 feet
SS 2	16-20-17	15			***SAND, with silt (SP-SM)** - Yellowish red (5YR 4/6) and red (10R 4/6), damp, dense, fine grained	Top of Barnwell Group at a depth of 0.8 feet
SS 3	10-7-8	13		5	SAA except yellowish red (5YR 5/6) SAA except medium dense, very fine to fine grained	
SS 4	3-3-4	11.5			SAA except strong brown (7.5YR 5/8), damp to moist, loose	
SS 5	3-3-5	10.5		10	SAA	
SS 6	5-6-10	13	207.1		SAA except medium dense	
SS 7	8-11-15	16		15	**SAND, clayey (SC)** - Mottled red (2.5YR 4/8), yellow (2.5Y 5/8), and strong brown (7.5YR 5/8), moist, medium dense, fine grained SAA	
SS 8	8-10-23	15.5		20	SAA except dense	
			197.1			
SS 9	10-12-13	13		25	**SAND, silty (SM)** - Brownish yellow (10YR 6/8), moist, medium dense, fine to medium grained, contains CLAY lenses and trace black manganese staining	
SS 10	6-11-15	18		30	SAA except contains pale yellow (2.5Y 8/4) CLAY lenses 2" thick	
			187.1			
SS 11	5-7-9	16.5		35	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), moist, medium dense, fine to coarse grained, contains CLAY lenses and black manganese staining	
			182.1			
SS 12	3-4-4	18		40	**SILT, sandy (ML)** - Yellow (2.5Y 7/6), moist, medium stiff to stiff, very fine to fine grained SAND, contains trace black manganese staining	
SS 13	3-5-6	18		45	SAA except pale yellow (2.5Y 7/4) to light yellowish brown (2.5Y 6/4), stiff, fine to medium grained, contains shell fragments, -HCL	
SS	3-5-6	18			SAA except pale yellow (2.5Y 7/4) and pink (7.5 YR 7/4), fine grained SAND	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-4002(DH)

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 5	B-4002(DH)

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			167.1			Water level depth at end of 1/2/07 = 6.0 feet
SS 15	5-5-7	18		55	***SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/4), moist, medium dense, fine grained, contains trace shell fragments and manganese staining, -HCL	Water level depth at beginning of 1/3/07 = 25.0 feet
SS 16	6-6-7	14.5		60	SAA except fine to medium grained, no shells or staining	
SS 17	8-12-13	14	152.1	65	SAA	
SS 18	WOH/6"-4-5	18	147.1	70	**SILT, sandy (ML)** - Pale yellow (5Y 7/4) to light olive gray (5Y 6/2), moist, stiff, low plasticity, fine to medium grained SAND, contains trace black manganese staining, -HCL	
SS 19	6-9-15	14.5	142.1	75	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/3), wet, medium dense, fine to medium grained, -HCL	
SS 20	7-12-12	10.5	137.1	80	**SAND (SP)** - Pale yellow (2.5Y 7/5), wet, medium dense, fine to medium grained, contains shell fragments, -HCL	
SS 21	14-1/12"	9.5	132.3	85	**SAND, silty (SM)** - Pale olive (5Y 6/3), wet, very loose, very fine to fine grained, contains cemented limestone fragments, -HCL	Loss of circulation at a depth of 85.0 feet
SS 22	5-8-15	18	127.1	90	**SILT (ML)** - Pale olive (5Y 6/4), moist to wet, very stiff, low plasticity, contains yellowish brown (10YR 5/8) SAND lenses and some shell fragments, +HCL	
				95		Top of Blue Bluff Marl at a depth of 92.0 feet Water level depth at end of 1/11/07 = Ground surface
UD 1		22		100	***SILT, with sand (MH)** - Pale olive (5Y 6/4), moist to wet, very stiff, contains shell fragments, +HCL Pocket Penetrometer: >4.5 TSF	Installed 6" steel casing to a depth of 97.0 feet Pitcher
SS 23	14-19-24	18		105	SAA except dark greenish gray (10Y 4/1), damp, hard, contains shell fragments	Water level depth at beginning of 1/15/07 = 20.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4002(DH)**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 5	B-4002(DH)

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 24	50/0.5"	0.5		110	SAA except contains abundant cementation	
SS 25	17-50/2"	8	102.1	115	SAA	Water level depth at end of 1/15/07 = 10.0 feet
SS 26	10-19-20	18		120	***CLAY (CH)** - Pale olive (5Y 6/4), damp, hard, contains shell fragments, +HCL	Water level depth at beginning of 1/16/07 = 12.0 feet
UD 2		15		125	SAA Pocket Penetrometer: >4.75 TSF	Pitcher
SS 27	50/2"	2		130	SAA	
SS 28	10-37-33	18		135	SAA except no cementation	
SS 29	50/5.5"	5.5	77.1	140	SAA except no shell fragments, abundant cementation	
SS 30	19-19-26	18		145	***CLAY, sandy (CL)** - Greenish gray (10Y 5/1), damp, hard, contains shell fragments, +HCL	Water level depth at end of 1/16/07 = 3.0 feet
SS 31	24-18-23	18		150	SAA	Water level depth at beginning of 1/17/07 = 14.0 feet
SS 32	12-15-36	18		155	SAA except some cementation	
SS 33	14-19-24	18	57.4	160	SAA except greenish gray (GLEY1 6/10Y), contains shell fragments and cementation	
SS	37-50/5"	11			**SAND, with silt (SP-SM)** - Dark greenish gray	Top of Still Branch Formation at a depth of 161.7 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4002(DH)**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 5	B-4002(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
34				165	(GLEY1 4/10GY), wet, very dense, fine grained, +HCL	
				170		
UD 3		14		175	SAA except very dark greenish gray (GLEY1 3/10Y), medium dense Pocket Penetrometer: 0.35 TSF	Pitcher
				180		
SS 35	5-13-28	18		185	SAA except dense, contains brownish yellow (10YR 6/6) CLAY lense, -HCL	
				190		
SS 36	22-50/5"	11		195	SAA except very dense	Water level depth at beginning of 1/18/07 = 48.0 feet
				200		
SS 37	WOH/6"-7-32	18		205	SAA except dark gray (GLEY1 4/N), dense, very fine grained	Water level depth at end of 1/18/07 = 19.0 feet
			10.6			Water level depth at beginning of 1/19/07 = 42.0 feet
				210		
SS 38	7-13-19	18		215	**CLAY (CL)** - Dark greenish gray (GLEY1 4/10GY), moist, hard, low plasticity, contains SAND lenses up to 0.5" thick, -HCL	
			0.1			
				220		

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4002(DH)**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	5 OF 5	B-4002(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 39	15-18-35	18	-5.7	225	**SAND, with clay (SP-SC)** - Dark greenish gray (GLEY1 4/5GY), wet, very dense, medium grained, contains CLAY lenses, -HCL	Top of Congaree Formation at a depth of 224.8 feet
				230	**SAND (SP)** - Dark greenish gray (GLEY1 4/5GY), wet, very dense, medium grained, contains CLAY lenses, -HCL	
			-12.9			
UD 4		13		235	**CLAY (CL)** - Red (10R 4/6) and pinkish white (10R 8/2), moist, stiff to very stiff, low to medium plasticity, -HCL	Pitcher Water level depth at end of 1/19/07 = 15.0 feet Water level depth at beginning of 1/23/07 = 78.0 feet Changed to 3 7/8" drill bit
			-20.9	240		
SS 40	13-19-22	18		245	**SILT, with sand (ML)** - Light gray (GLEY1 7/N), moist, hard, nonplastic to low plasticity, very fine grained SAND, micaceous, -HCL	Water level depth at end of 1/23/07 = 20.0 feet
			-26.9			
SS 41	27-45-50	17	-30.9	250	**SAND, silty (SM)** - Light gray (10YR 7/1), wet, very dense, fine to medium grained, micaceous Boring terminated at 250 feet	Water level depth at beginning of 1/24/07 = 33.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	B-4002(DH)

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 5	B-4003(DH)

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142599.9 E 620927.1	11/16/2006	12/12/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	6 Inches	219907	249.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.0			
SS 1	15-13-15	16	218.4		**GRAVEL, with sand (GP)** - Brown (2.5YR 4/2), damp, medium dense	Top of Fill at a depth of 0.0 feet
SS 2	17-16-17	14			**SAND, with silt (SP-SM)** - Red (2.5YR 4/6), damp to moist, medium dense, very fine to fine grained	Top of Barnwell Group at a depth of 0.6 feet
SS 3	12-4-6	16			SAA except yellowish red (5YR 5/6), dense	Begin drilling with a 3 7/8" drill bit
			213.5	5	SAA except medium dense, contains CLAY lenses	
SS 4	6-13-16	17			**SAND, clayey (SC)** - Yellowish red (5YR 5/6) and reddish yellow (7.5YR 6/8), moist, medium dense, fine grained	
SS 5	9-11-15	16		10	SAA	
SS 6	10-12-17	16.5			SAA except yellowish red (5YR 5/6), reddish yellow (7.5YR 6/8), red (2.5YR 4/6), and white (7.5YR 8/1), fine to medium grained	
			206.0			
SS 7	5-20-19	16	205.2	15	**CLAY, with sand (CH)** - Strong brown (7.5YR 5/8), moist, very stiff, medium to high plasticity, very fine grained SAND	
			202.0		**SAND (SP)** - Reddish yellow (7.5YR 6/8), yellowish red (5YR 5/8), moist, dense, fine to medium grained	
SS 8	8-14-21	12		20	**SAND, silty (SM)** - Yellowish red (5YR) and pinkish white (5YR 8/2), moist, dense, fine to medium grained, contains trace black manganese staining	
SS 9	6-8-10	16		25	SAA except strong brown (7.5YR 5/8), medium dense	
			192.0			
SS 10	3-3-4	16		30	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), moist, loose, fine to medium grained	
			187.0			
SS 11	4-5-5	18		35	**CLAY, sandy (CL)** - Yellow (2.5Y 7/6), moist, stiff, fine grained SAND	
SS 12	4-4-4	18		40	SAA	
			177.0			
SS 13	1-2-4	18		45	**SAND, clayey (SC)** - Strong brown (7.5YR 5/8), moist, loose, fine grained	
SS	3-4-4	18			SAA except yellow (10YR 7/6)	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4003(DH)

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 5	B-4003(DH)

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	5-9-11	18		55	SAA except medium dense	
SS 16	6-10-11	18		60	SAA except yellow (10YR 7/6) and pale yellow (2.5Y 7/4)	Water level depth at end of 11/16/06 = 10.0 feet
			157.3			
SS 17	4-5-5	16.5		65	**SAND, silty (SM)** - Pale yellow (2.5Y 7/3), moist, medium dense, medium grained, contains some cementation	Water level depth at beginning of 11/17/06 = 32.7 feet
			152.0			
SS 18	5-5-6	16.5		70	**SAND, clayey (SC)** - Pale yellow (2.5Y 7/3), wet, medium dense, fine to coarse grained, contains some shell fragments	
			147.0			
SS 19	12-15-20	15.5		75	**SAND, silty (SM)** - Pale yellow (2.5Y 7/3), wet, dense, fine to coarse grained	
SS 20	12-18-19	4		80	SAA except very pale brown (10YR 7/4), very fine to fine grained	
SS 21	29-50/1"	2		85	SAA except pale yellow (2.5Y 7/4), very dense, fine to very coarse grained, contains cemented shell fragments	
			132.0			
SS 22	8-8-8	18		90	**CLAY, silty with sand (CL-ML)** - Greenish gray (10Y 6/1), moist, very stiff, very fine to fine grained SAND, contains brownish yellow SAND lenses	
			127.0			
SS 23	23-21-50/4"	16		95	**CLAY, silty with sand (CL-ML)** - Dark greenish gray (10Y 4/1), moist, hard, very fine to fine grained SAND, contains brownish yellow SAND lenses	Top of Blue Bluff Marl at a depth of 92.0 feet Water level depth at end of 11/17/06 = 28.0 feet
			122.0			
SS 24	11-16-28	18		100	***SILT (MH)** - Dark greenish gray (10Y 4/1), moist, hard, +HCL	Water level depth at beginning of 11/27/06 = Borehole dry (Borehole collapsed to 55.0 feet) Reamed hole to a depth of 100.0 feet using a 9 7/8" drill bit. Installed 6" steel casing to a depth of 100.0 feet Water level depth at
SS 25	50/2.5"	2.5		105	SAA except contains cementation	
			112.0			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4003(DH)**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 5	B-4003(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
						end of 11/27/06 = Ground surface
SS 26	9-50/4"	10		110	***SILT, sandy (MH)** - Dark greenish gray (10Y 4/1), moist, hard, contains trace shell fragments +HCL	Water level depth at beginning of 11/28/06 = 33.0 feet
SS 27	10-14-50/4"			115	SAA	
UD 1		9.5			SAA Pocket Penetrometer: >4.75 TSF	Pitcher
				120		Water level depth at end of 12/5/06 = 8.0 feet
						Water level depth at beginning of 12/6/06 = 14.0 feet
SS 28	20-35-42	18		125	SAA	
SS 29	31-30-50/2"	14		130	SAA except greenish gray (10Y 5/1)	
SS 30	23-50/5"	11		135	SAA except no shell fragments	
UD 2		20			SAA Pocket Penetrometer: >4.75 TSF	Pitcher
				140		
SS 31	15-20-50/5"	17		145	SAA	
			72.0			
SS 32	17-26-34	18		150	***CLAY, with sand (CL)** - Greenish gray (10Y 5/1), dry, hard, fine grained, +HCL	
			67.0			
SS 33	13-41-38	18		155	**CLAY, silty with sand (CL-ML)** - Greenish gray (10Y 5/1), dry, hard, fine grained SAND, +HCL	
UD 3		23.5			SAA Pocket Penetrometer: >4.75 TSF	Pitcher
				160		Water level depth at end of 12/6/06 = 19.0 feet
						Water level depth at beginning of 12/7/06 = 32.0 feet
SS	50/2"	2			SAA except greenish gray (10GY 6/1), moist,	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4003(DH)**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 5	B-4003(DH)

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
34			53.0	165	fine to coarse grained, contains large shell fragments	
						Top of Still Branch Formation at a depth of 166.0 feet
SS 35	6-16-23	18		170	**SAND, silty (SM)** - Dark greenish gray (5GY 4/1), wet, dense, fine grained, -HCL	
				175		
SS 36	5-9-14	18		180	SAA except medium dense, contains shell fragments, +HCL	
				185		
SS 37	50/4"	4		190	SAA except greenish gray (10Y 5/1), very dense, fine to very coarse grained, contains large shell fragments	
				195		
UD 4		6		200	SAA except dark greenish gray (5GY 4/1) Pocket Penetrometer: 3.5 TSF	Pitcher
UD 5		16				Direct Push
						Water level depth at end of 12/7/06 = 17.0 feet
				205		Water level depth at beginning of 12/8/06 = 49.0 feet
SS 38	10-13-50/5"	12		210	SAA except very dense, fine to medium grained	
				215		
SS 39	4-13-25	18	-0.8	220	SAA except greenish gray (10GY 5/1), dense, -HCL	
					CLAY (CL) - Greenish gray (5G 5/1), moist,	Water level depth at

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4003(DH)**

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GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 5 OF 5	HOLE NO. B-4003(DH)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					225		hard, low to medium plasticity, contains trace very fine grained SAND	end of 12/8/06 = 13.0 feet Water level depth at beginning of 12/11/06 = 84.0 feet
				-9.0				
SS 40		▲10-28-50/2"	14		230		**CLAY (CL)** - Greenish gray (5G 5/1), moist, hard, low to medium plasticity, contains SAND seams up to 1" thick	Top of Congaree Formation at a depth of 228 feet.
				-15.0				
					235			
SS 41		▲17-23-50/4"	16	-20.5	240		**CLAY, silty (CL-ML)** - Dark greenish gray (10Y 4/1), moist, hard, contains trace very fine grained SAND **SAND, silty (SM)** - Greenish gray (10GY 5/1), moist to wet, very dense, fine to medium grained, -HCL	Water level depth at end of 12/11/06 = 16.0 feet Water level depth at beginning of 12/12/06 = 48.0 feet
					245			
UD 6	■	□	15.5	-30.8			SAA except dark greenish gray (10Y 4/1), wet, fine grained Pocket Penetrometer: 0.70 TSF SAA except light gray (7/N) Boring terminated at 249.79 feet	Pitcher

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-4003(DH)

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4004

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142459.7 E 621046.6	11/8/2006	11/10/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	5 Inches	219907	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.5			
SS 1	10-21-10	17	217.5		**GRAVEL, with sand (GP)** - Brown (7.5YR 5/2), moist, dense, fine to medium grained	Top of Fill at a depth of 0.0 feet
SS 2	9-12-12	17	216.7		SAND	Top of Barnwell Group at a depth of 1.0 feet
SS 3	5-7-8	4	215.2		**SAND, silty (SM)** - Red (10R 4/6), moist, dense, fine grained	
				5	SAA	
SS 4	12-13-13	18			**SAND, with silt (SP-SM)** - Red (10R 4/6), moist, medium dense, fine grained	
SS 5	8-11-12	12			**SAND, silty (SM)** - Red (10R 4/6), moist, medium dense, fine to medium grained	
					SAA	
				10	SAA	
SS 6	11-12-14	14			SAA except dark red (10R 3/6), contains some coarse grained	
SS 7	6-14-12	13			SAA except strong brown (7.5YR 5/8)	
				15		
			201.5			
SS 8	16-24-34	13		20	***SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/6), moist, very dense, fine to medium grained	
			196.5			
SS 9	7-9-9	16		25	**SAND, silty (SM)** - Strong brown (7.5YR 5/6), moist, medium dense, fine to medium grained, contains CLAY lenses	
			191.5			
SS 10	7-10-9	14		30	**SAND, with clay (SP-SC)** - Yellowish brown (10YR 5/6), moist, medium dense, fine to medium grained	
			186.5			
SS 11	5-7-8	18		35	***CLAY, sandy (CL)** - Very pale brown (10YR 7/3), moist, stiff, fine grained, contains some black manganese staining	
SS 12	5-6-9	16		40	SAA	
SS 13	2-3-3	18		45	SAA	
			171.5			
SS	5-5-5	18			***SAND, clayey (SC)** - Brownish yellow (10YR 6/8), moist, loose	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4004

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4004

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	3-3-3	18		55	SAA except light yellowish brown (10YR 6/4), fine to medium grained, contains CLAY lenses	
			161.5			
SS 16	12-11-15	13		60	**SAND, with clay (SP-SC)** - Pale brown (10YR 6/3), moist, medium dense, fine grained	
			156.5			
SS 17	3-8-4	18	154.0	65	**SAND, clayey (SC)** - Pale brown (10YR 6/3), moist, medium dense, fine to medium grained	
					SAND, silty (SM) - Light gray (10YR 7/2), moist, medium dense, fine to coarse grained, contains shell fragments	
SS 18	7-9-13	18		70	SAA	Loss of circulation at a depth of 65.0 feet
SS 19	12-13-10	18		75	SAA except white (10YR 8/1), medium to coarse grained	
			141.5			
SS 20	13-17-22	18	139.0	80	**SAND (SP)** - Light gray (10YR 7/2), moist, dense, fine to medium grained, contains some CLAY lenses	
			136.5		**SAND, clayey (SC)** - Light gray (10YR 7/2), moist, dense, fine to medium grained	
SS 21	10-12-15	18		85	***SAND, with silt (SW-SM)** - Light gray (10YR 7/2), moist, medium dense, fine to medium grained	
			131.0			
SS 22	50/2"			90	***SAND, with silt (SW-SM)** - White (10YR 8/1), moist, very dense, fine to coarse grained, contains cemented shell fragments	Top of Utley Limestone at a depth of 87.5 feet
			127.5			Top of Blue Bluff Marl at a depth of 91.0 feet
SS 23	8-13-13	18		95	***SILT, with sand (MH)** - Greenish gray (5G 4/1), moist, very stiff, very fine to fine grained SAND	
SS 24	29-34-50/1"	13		100	SAA except hard	
			116.5			
SS 25	14-16-33	18		105	***SILT (MH)** - Greenish gray (5G 4/1), moist, hard, high plasticity SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4004**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4004

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	20-19-24	18		110	SAA except dark greenish gray (5GY 4/1), contains shell fragments	
SS 27	11-13-50/5"	17		115	SAA except greenish gray (10Y 5/1)	
			101.5			
SS 28	40-50/2"			120	***SILT, with sand (MH)** - Greenish gray (10Y 5/1), moist, hard, very fine to fine grained SAND, contains lithified zones	
SS 29	50/5"	5		125	SAA except contains cemented shell fragments	
SS 30	25-31-50/5"	17		130	SAA except no shell fragments	Water level depth at end of 11/9/06 = 62.0 feet Changed to a 2 7/8" drill bit
SS 31	50/6"-33-50/5"	15.5		135	SAA except contains cemented shell fragments	Water level depth at beginning of 11/10/06 = 62.0 feet
SS 32	50/0.5"	0.5		140	SAA except light greenish gray (5GY 7/1), dry to damp	
SS 33	26-41-50/4"	16		145	SAA except greenish gray (10Y 6/1), moist	
			71.5			
SS 34	20-20-20	18	68.5	150	***CLAY, with sand (CL)** - Greenish gray (10Y 6/1), moist, hard, nonplastic to low plasticity Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4004**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-4005

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142715.0 E 620948.7	2/13/2007	3/20/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	6 Inches	219907	164.9

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.1			
SS 1	9-10-7	15	220.1		**GRAVEL, with sand (GP)** - Gray (7.5YR 5/1), damp to moist, medium dense, medium to coarse grained SAND	Top of Fill at a depth of 0.0 feet
SS 2	7-10-13	13			**SAND (SP)** - Strong brown (7.5YR 5/8), damp to moist, medium dense, fine to medium grained	Top of Barnwell Group at a depth of 1.0 feet
SS 3	14-13-13	8.5	215.6	5	SAA except strong brown (7.5YR 5/6) and brown (7.5YR 4/3), moist	
SS 4	13-10-10	18			SAA except brown (7.5YR 4/3), fine grained; ***SAND, silty (SM)** - Strong brown (7.5YR 4/6), moist, medium dense, fine grained	
SS 5	3-4-3	10.5		10	SAA except loose	
SS 6	4-3-3	6.5			SAA except yellowish red (5YR 5/8)	
SS 7	4-4-3	9.5		15	SAA except strong brown (7.5YR 5/8), medium dense	
			204.1			
SS 8	4-4-6	10		20	**SAND, clayey (SC)** - Strong brown (7.5YR 4/6) and yellowish red (5YR 5/8), moist, loose to medium dense, medium grained	
			199.1			
SS 9	3-4-3	8		25	**SAND, with clay (SP-SC)** - Reddish yellow (5YR 6/8), moist, loose, coarse grained, contains black manganese staining	
			194.1			
SS 10	3-4-2	16		30	**SAND, clayey (SC)** - Strong brown (7.5YR 5/8), moist, loose, medium to coarse grained, contains CLAY lenses	
SS 11	3-5-4	10		35	SAA except brownish yellow (10YR 6/8) and yellowish red (5YR 5/8)	
SS 12	3-3-3	15		40	SAA except brownish yellow (10YR 6/8) and pale yellow (5Y 7/4), medium grained	
			179.1			
SS 13	2-4-3	16		45	**SILT, sandy (ML)** - Pale yellow (5Y 7/4), moist, medium stiff, low plasticity, fine to medium grained, -HCL	
SS	WOH/18"	12			SAA except very soft	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4005

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-4005

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						Loss of circulation at a depth of 50.0 feet
SS 15	WOH/12"-5	13		55	SAA except soft to medium stiff, very fine to fine grained SAND	
SS 16	WOH/14"-2/4"	14		60	SAA except very soft, contains abundant shell fragments and some black manganese staining	
SS 17	WOH/19"	15		65	SAA except no shell fragments	
SS 18	WOH/21"	16		70	SAA except wet	
SS 19	WOH/24"	7		75	SAA except no manganese staining	Water level depth at end of 2/14/07 = 19.0 feet
SS 20	WOH/24"	12		80	SAA	Water level depth at beginning of 2/15/07 = 68.0 feet
			139.1			
SS 21	WOH/19"	0	136.1	85	**NO RECOVERY**	
SS 22	8-8-11	18	131.6	90	**SILT (ML)** - Light olive brown (2.5Y 5/3), moist, very stiff, low plasticity, contains SAND lenses, +HCL ***SILT (MH)** - Dark greenish gray (GLEY1 4/10Y), damp, very stiff, high plasticity, contains SAND lenses and minor shell fragments, +HCL	Top of Blue Bluff Marl at a depth of 89.5 feet Water level depth at end of 2/15/07 = 58.0 feet
SS 23	16-50/4.5"	10.5		95	SAA except dark greenish gray (GLEY1 4/5GY), hard, no shell fragments	Water level depth at beginning of 3/15/07 = 2.5 feet Installed 6" steel casing to a depth of 95.0 feet
SS 24	12-15-26	18		100	SAA	
UD 1		27.5		105	SAA except conains abundant shell fragments Pocket Penetrometer: >4.75 TSF	Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4005**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-4005

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	WOH/6"-50/0"	6		110	SAA	
			109.1			
SS 26	16-19-22	18		115	***SILT, sandy (MH)** - Dark greenish gray (GLEY1 4/5GY), damp, hard, high plasticity, contains SAND lenses and shell fragments, +HCL	
SS 27	44-50/4"	10		120	SAA except few shell fragments and abundant cementation	
SS 28	21-26-50/2"	14		125	SAA except greenish gray (GLEY1 6/10Y)	
			94.1			
SS 29	15-28-35	18		130	***SILT, (MH)** - Greenish gray (GLEY1 6/10Y), damp, hard, high plasticity, contains shell fragments, +HCL SAA	
SS 30	14-50/6"	12		135	SAA	
SS 31	29-29-50/5.5"	17.5		140	SAA except no shells or cementation	Water level depth at end of 3/15/07 = 6.5 feet
			79.1			
SS 32	27-36-46	18		145	***CLAY, with sand (CL)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, +HCL SAA	Water level depth at beginning of 3/19/07 = 43.0 feet
UD 2		26		150	SAA Pocket Penetrometer: >4.75 TSF	Pitcher Water level depth at end of 3/19/07 = 10.0 feet
SS 33	50/4"	4		155	SAA except some cementation and shell fragments	Water level depth at beginning of 3/20/07 = 21.5 feet
SS 34	16-21-50/2"	14		160	SAA except abundant shell fragments	
			58.1			
SS	8-30-50/5"	8			**SAND, silty (SM)** - Very dark greenish gray	Top of Still Branch

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4005**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-4005

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
35	☒				56.2			(GLEY1 3/10Y), wet, very dense, fine grained, -HCL Boring terminated at 164.92 feet	Formation at a depth of 163.0 feet

	SITE	HOLE NO.
	Vogtle Units 3 & 4 COL Project **Final Log**	B-4005

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-4006

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142719.6 E 621076.4	1/4/2007	1/11/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	4 Inches	219907	165.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.0			
SS 1	2-2-3	8	219.5		**SAND (SP)** - Yellowish red (5YR 5/8), moist, loose, very fine to fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	6-9-13	16.5	217.7		**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/6), moist, medium dense, fine grained	
SS 3	7-14-15	6		5	**SAND, silty (SM)** - Reddish brown (5YR 4/6), moist, medium dense, fine grained	
SS 4	4-5-4	15.5	213.0		SAA except strong brown (7.5YR 4/6), moist, loose, very fine to fine grained	
SS 5	4-2-4	11	210.5	10	**SAND, with silt (SP-SM)** - Strong brown (7.5YR 5/6), moist, loose, very fine to fine grained	
SS 6	4-6-13	17.5	208.0		**SAND, clayey (SC)** - Yellowish red (5YR 5/6) and strong brown (7.5YR 5/8), moist, medium dense, fine grained, contains trace black manganese staining	
SS 7	11-18-19	14.5		15	**SAND, silty (SM)** - Mottled yellowish red (5YR 5/6) and strong brown (7.5YR 5/8, moist, dense, fine grained, contains black manganese staining	
			204.0			
SS 8	8-16-16	15.5	201.8	20	**SAND, clayey (SC)** - Strong brown (7.5YR 5/8), moist, dense, fine grained	
			199.0		**SAND, silty (SM)** - Yellowish red (5YR 5/8), moist, dense, fine grained	Water level depth at end of 1/4/07 = Ground surface
SS 9	10-14-15	15.5		25	**SAND, clayey (SC)** Red (2.5YR 5/8), moist, medium dense, fine to medium grained	Water level depth at beginning of 1/5/07 = Borehole dry
			194.0			
SS 10	9-13-20	12.5		30	**SAND (SP)** - Yellowish red (5YR 5/6) and pink (7.5YR 7/4), moist, dense, fine to medium grained	
			189.0			
SS 11	7-10-12	15.5		35	**SAND, silty (SM)** - Yellowish brown (10YR 5/8), moist, medium dense, fine to medium grained, contains some black manganese staining	
			184.0			
SS 12	3-4-4	18		40	**SILT, sandy (ML)** - Yellow (2.5Y 7/6), moist, medium stiff to stiff, low plasticity, very fine to fine grained SAND, contains CLAY lenses	
SS 13	4-4-6	18		45	SAA except stiff, contains some SAND lenses	
SS	4-4-5	18			SAA except pale olive (5Y 6/4), strong brown (7.5YR 5/6), and red (2.5YR 5/8), moist, stiff,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4006

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-4006

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					low plasticity, fine to medium grained SAND, contains black manganese staining, -HCL	
			169.0			
SS 15	4-4-7	18		55	**SAND, silty (SM)** - Pale yellow (5Y 7/4) and strong brown (7.5YR 5/8), moist, medium dense, very fine to fine grained, -HCL	
SS 16	6-8-12	15.5		60	SAA except yellow (10YR 7/6)	
SS 17	7-13-10	18		65	SAA except yellow (2.5Y 7/6), fine to medium grained, contains black manganese staining	
			154.0			
SS 18	3-6-11	18	151.6	70	**CLAY, sandy (CL)** - Yellow (10YR 7/6), pale yellow (2.5Y 7/3), moist, very stiff, low plasticity, contains trace shell fragments and SAND lenses, -HCL	
			149.0		**SAND, clayey (SC)** - Pale yellow (2.5Y 7/4), reddish yellow (5YR 6/6), and yellow (2.5Y 7/6), moist, medium dense, fine grained, contains trace shell fragments, -HCL	
SS 19	15-22-25	17		75	**SAND (SP)** - Pale yellow (2.5Y 7/4), moist, dense, fine to medium grained, -HCL	
SS 20	10-12-15	12.5		80	SAA except wet, medium dense, very fine to medium grained, contains CLAY lenses and black manganese staining	
			139.0			Loss of circulation at a depth of 82.0 feet
SS 21	7-7-20	18		85	**SAND, silty (SM)** - Pale yellow (5Y 8/2), wet, medium dense, fine grained, contains abundant cemented shell fragments, +HCL	
			134.0			
SS 22	3-8-16	18	131.5	90	**SILT (ML)** - Pale olive (5Y 6/4), moist, very stiff, +HCL ***SILT, with sand (MH)** - Dark greenish gray (10GY 4/1), moist, very stiff, +HCL	Top of Blue Bluff Marl at a depth of 89.5 feet Water level depth at beginning of 1/9/07 = 75.0 feet (Borehole collapsed to 85.0 feet)
SS 23	13-29-50/5"	17		95	SAA except hard, contains abundant cementation	
SS 24	50/5"	5		100	SAA except no cementation	
SS 25	12-18-50/6"	18		105	SAA except contains few shell fragments	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4006**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 3 OF 4	HOLE NO. B-4006

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	14-20-50/3"	15		110	SAA except abundant shell fragments and some cementation	
SS 27	21-30-50/2"	14		115	SAA	
SS 28	9-50/5"	11		120	SAA except some cmented shell fragments	Water level depth at end of 1/9/07 = Ground surface
SS 29	18-24-28	18		125	SAA except greenish gray (5GY 5/1), no cementation	Water level depth at beginning of 1/10/07 = 75.0 feet (Borehole collapsed to 79.0 feet)
SS 30	20-36-39	18		130	SAA except some cementation	
SS 31	31-34-50/3"	15		135	SAA except no shell fragments	
SS 32	42-50/5.5"	11.5		140	SAA	
			79.0			
SS 33	49-50/5"	11		145	***CLAY, sandy (CH)** - Greenish gray (5GY 5/1), moist, very stiff, high plasticity, +HCL	
SS 34	16-46-50/5"	17		150	SAA except trace shell fragments	Water level depth at end of 1/10/07 = 74.0 feet
SS 35	12-16-24	18		155	SAA except greenish gray (10Y 5/1), no shell fragments	Water level depth at beginning of 1/11/07 = 75.0 feet
			64.0			
SS 36	50/2"	2	61.0	160	**SILT, sandy (ML)** - Greenish gray (10Y 5/1), moist, hard, low plasticity, fine grained SAND, contains large cemented shell fragments, +HCL	Top of Still Branch Formation at a depth of 160.0 feet
SS	8-12-22	18			**SAND, silty (SM)** - Very dark greenish gray	

SITE	Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-4006

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-4006

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
37	☒				56.0	165		(10Y 3/1), moist to wet, dense, fine grained, -HCL Boring terminated at 165 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project Final Log	B-4006

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-4007

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142426.2 E 621125.3	1/24/2007	1/30/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	6 Inches	219907	170.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
217.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			217.9			
SS 1	4-5-3	8	216.9		**GRAVEL, with sand (GP)** - Dark gray (7.5YR 4/1), moist, loose, medium grained SAND	Top of Fill at a depth of 0.0 feet
			216.4		**SAND, clayey (SC)** - Red (10R 4/6), moist, loose, fine grained	Top of Barnwell Group at a depth of 1.0 feet
SS 2	3-6-9	16	214.7		**SAND, silty (SM)** - Red (10R 4/8), moist, medium dense, fine grained	
SS 3	8-5-5	13.5		5	**SAND, clayey (SC)** - Red (10R 4/8), moist, loose to medium dense, fine grained SAA except loose	
SS 4	5-4-4	18	209.9			
SS 5	6-7-9	13		10	**SAND (SP)** - Yellowish red (5YR 5/8), moist, medium dense, very fine to fine grained	
SS 6	6-8-10	12			SAA	
SS 7	8-11-11	12		15	SAA	
			200.9			
SS 8	7-9-11	14		20	**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), moist, medium dense, fine to medium grained	
			195.9			
SS 9	11-22-26	12.5		25	**SAND (SP)** - Yellow (10YR 7/8), moist, dense, medium grained, contains black manganese staining	
			190.9			
SS 10	9-11-13	12		30	**SAND, clayey (SC)** - Yellow (10YR 7/8) and strong brown (7.5YR 5/6), moist, medium dense, medium grained	
SS 11	8-6-6	15		35	SAA except brownish yellow (10YR 6/8), contains CLAY lenses	
			180.9			
SS 12	4-4-6	18		40	**CLAY, silty with sand (CL-ML)** - Olive yellow (2.5Y 6/6), moist, stiff, low plasticity, contains black manganese staining	
			175.9			
SS 13	3-4-5	18		45	**SAND, clayey (SC)** - Olive yellow (2.5Y 6/6), moist, loose, very fine to fine grained, contains black manganese staining, -HCL	
SS	3-6-9	18			SAA except medium dense, fine to medium grained, contains shell fragments	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4007

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-4007

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			165.9			
SS 15	2-4-4	18	160.9	55	**CLAY, silty with sand (CL-ML)** - Yellow (2.5Y 7/6), moist, medium stiff to stiff, low plasticity, contains black manganese staining, -HCL	
SS 16	6-10-9	16	155.9	60	**SAND, clayey (SC)** - Pale yellow (5Y 7/4), moist, medium dense, medium grained, contains shell fragments, -HCL	
SS 17	9-15-15	17	150.9	65	**SAND (SP)** - Light yellowish brown (10YR 6/4), moist, medium dense to dense, fine to medium grained, -HCL	
SS 18	4-6-6	18	145.9	70	**SAND, clayey (SC)** - Pale yellow (5Y 7/3), moist to wet, medium dense, medium grained, contains some shell fragments, -HCL	Water level depth at end of 1/24/07 = 6.0 feet
SS 19	42-18-21	18	140.9	75	**SAND, silty (SM)** - Pale yellow (5Y 8/2), wet, dense, medium to coarse grained, contains cemented shell fragments, +HCL	Water level depth at beginning of 1/25/07 = 30.0 feet
SS 20	8-12-15	18	135.9	80	**SILT, sandy (ML)** - Light greenish gray (GLEY1 7/5GY), moist to wet, stiff, low plasticity, very fine to fine grained SAND, contains trace shell fragments, -HCL	Top of Utley Limestone at a depth of 82.0 feet
SS 21	11-50/4"	10		85	**SAND, silty (SM)** - Pale yellow (5Y 8/2), wet, very dense, fine gained, contains shell fragments, +HCL	
SS 22	50/1"	0	127.9	90	SAA except contains cemented shell hash	
SS 23	8-9-11		124.1	95	**SILT, sandy (ML)** - Pale olive (5Y 6/4), moist, very stiff, nonplastic to low plasticity, very fine grained SAND, +HCL ***SILT, (MH)** - Dark greenish gray (GLEY1 4/10Y), moist, very stiff, high plasticity, +HCL	Top of Blue Bluff Marl at a depth of 93.8 feet
UD 1		26		100	SAA except very stiff to hard Pocket Penetrometer: >4.75 TSF	Pitcher
SS 24	15-22-50/3"	15	110.9	105	SAA except greenish gray (GLEY1 4/5GY), hard, contains some cementation	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4007**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-4007

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	14-18-19	18		110	***SILT, with sand (MH)** - Greenish gray (GLEY1 4/5GY), moist, hard, contains shell fragments	
SS 26	12-50/2"	8		115	SAA except abundant cementation	Water level depth at end of 1/25/07 = 10.0 feet
			100.9			
UD 2		12.5		120	***CLAY, sandy (CH)** - Greenish gray (GLEY1 4/5GY), moist, hard, contains shell fragments Pocket Penetrometer: >4.75 TSF	Water level depth at beginning of 1/26/07 = 42.0 feet Pitcher Changed to 2 7/8" drill bit
SS 27	50/5"	5		125	SAA except greenish gray (GLEY1 5/5GY), contains trace shell fragments and cementation	
			90.9			
SS 28	25-28-37	18		130	***SILT, with sand (MH)** - Greenish gray (GLEY1 5/5GY), moist, hard, contains trace shell fragments	
SS 29	48-31-50/5.5"	17.5		135	SAA except some cementation	
SS 30	36-50/1"	7		140	SAA	
SS 31	48-50/2"	8		145	SAA except greenish gray (GLEY1 6/10Y)	
SS 32	14-23-36	18		150	SAA	Water level depth at end of 1/26/07 = 14.0 feet
UD 3		30		155	SAA Pocket Penetrometer: >4.75 TSF	Water level depth at beginning of 1/29/07 = 49.5 feet Pitcher Reamed hole to a depth of 153.5 feet using a 5 7/8" drill bit
SS 33	8-22-21	18		160	SAA	Water level depth at end of 1/29/07 = 49.0 feet Water level depth at beginning of 1/30/07 = 49.0 feet
SS	11-17-18	18			SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project Final Log	B-4007

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-4007

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
34					51.9	165			Top of Still Branch Formation at a depth of 166.0 feet
SS 35		▲	9-9-14	18	47.9	170		**SAND, silty (SM)** - Very dark greenish gray (GLEY1 3/5G), wet, medium dense, fine grained, -HCL Boring terminated at 170 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4007**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-4008

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142424.2 E 620973.8	1/31/2007	2/28/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	6 Inches	219907	169.4

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.1			
SS 1	5-8-11	14	217.3		**GRAVEL, with sand (GP)** - Gray (5YR 6/1), dry to moist, medium dense	Top of Fill at a depth of 0.0 feet
SS 2	8-10-11	18			**SAND, clayey (SC)** - Red (2.5YR 4/8) and (10R 4/6), moist, medium dense, fine grained	Top of Barnwell Group at a depth of 0.8 feet
SS 3	4-8-9	12			SAA except red (2.5YR 4/8)	
				5	SAA	
SS 4	12-11-13	18			SAA	
SS 5	7-11-11	14			SAA except red (10R 4/8)	
				10		
SS 6	7-13-12	14			SAA except red (2.5YR 4/8)	
			205.1			
SS 7	7-10-9	14			**SAND, silty (SM)** - Yellowish red (5YR 5/8), moist, medium dense, fine grained	
				15		
SS 8	6-9-10	10			SAA except red (10R 4/6) and strong brown (7.5YR 5/8), fine to medium grained	
				20		
			196.1			
SS 9	9-12-12	11			**SAND (SP)** - Yellow (2.5Y 7/6), moist, medium dense, medium grained, contains black manganese staining	
				25		
			191.1			
SS 10	5-2-6	14	188.9		**SAND, clayey (SC)** - Reddish yellow (7.5YR 6/8), moist, loose, fine to medium grained	
			188.1	30	**CLAY, with sand (CL)** - Brownish yellow (10YR 6/8), moist, medium stiff to stiff, low to medium plasticity	
SS 11	5-6-8	15			**SAND, clayey (SC)** - Olive yellow (2.5Y 6/6) to yellow (2.5Y 7/6), moist, medium dense, medium grained, contains few CLAY lenses	
				35		
			181.1			
SS 12	3-5-6	18			***SAND, silty (SM)** - Olive yellow (2.5Y 6/6), moist, medium dense, nonplastic to low plasticity, very fine to fine grained SAND	
				40		
SS 13	3-4-4	18			SAA except loose	
				45		
SS	WOH/18"	18			SAA except yellow (2.5Y 7/6), very loose, micaceous, contains black manganese staining.	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4008

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-4008

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					-HCL	
SS 15	1-1-1	18		55	SAA except yellow (10YR 7/8), not micaceous	
SS 16	WOH/12"-3	18		60	SAA except abundant black manganese staining	
SS 17	4-3-6	15.5	153.9	65	SAA except reddish yellow (7.5YR 6/6), moist to wet, loose, fine to medium grained, contains abundant black manganese staining	
			151.4		**CLAY, sandy (CL)** - Olive yellow (2.5Y 6/6), moist, stiff, low plasticity, contains few shell fragments and black manganese staining, -HCL	
SS 18	5-16-50/5"	15		70	**SAND, silty (SM)** - White (5Y 8/1), moist to wet, very dense, fine to very coarse grained, contains partially cemented shell hash, +HCL	Loss of circulation at a depth of 70.0 feet
SS 19	14-16-17	18		75	SAA except wet, dense, medium grained, contains shell fragments	Changed to a 2 7/8" drill bit
			141.1			
SS 20	8-10-13	18		80	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/2), wet, medium dense, fine grained, contains trace shell fragments, -HCL	
SS 21	15-26-32	9		85	SAA except very dense, no shell fragments	
			131.1			Top of Utley Limestone at a depth of 87.0 feet
SS 22	50/1.5"	0		90	**NO RECOVERY**	Water level depth at end of 1/31/07 = 64.0 feet
			126.1			Water level depth at beginning of 2/2/07 = Borehole dry (Borehole collapsed to a depth of 75.0 feet)
SS 23	24-30-50/5"	17		95	***SILT, with sand (MH)** - Dark greenish gray (GLEY1 4/5GY), damp, hard, high plasticity, contains shell fragments, +HCL	Top of Blue Bluff Marl at a depth of 92.0 feet
UD 1		8		100	SAA except contains lithified limestone Pocket Penetrometer: >4.75 TSF	Pitcher
						Water level depth at beginning of 2/19/07 = Ground surface
UD 2		22.5		105	SAA except damp to moist, very stiff to hard Pocket Penetrometer: >4.75 TSF	Pitcher Water level depth at end of 2/19/07 = Ground surface

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4008**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-4008

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 24	11-14-15	18		110	SAA except dark greenish gray (GLEY1 4/10Y), damp, very stiff	Water level depth at beginning of 2/20/07 = Ground surface
SS 25	11-16-17	18		115	SAA except greenish gray (GLEY1 5/GY), hard, contains abundant shell fragments	
SS 26	20-21-27	18		120	SAA excpet few shell fragments	
UD 3		9		125	***CLAY (MH)** - Greenish gray (GLEY1 5/GY), hard, contains mostly cemented limestone Pocket Penetrometer: >4.75 TSF	Pitcher
UD 4		17		130	SAA Pocket Penetrometer: >4.75 TSF	Pitcher Water level depth at end of 2/20/07 = 6.0 feet
SS 27	50/6"	6		135	SAA except no cementation	Water level depth at beginning of 2/21/07 = 14.0 feet Changed to a 3 7/8" drill bit
SS 28	50/1"	1		140	SAA except greenish gray (GLEY1 6/10Y), abundant cementation	
SS 29	19-25-28	18		145	SAA except no cementation	
SS 30	16-21-21	18		150	SAA except no shell fragments	
			66.1			
SS 31	25-21-31	18		155	***CLAY, sandy (CL)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, contains trace shell fragments and cementation	Water level depth at end of 2/21/07 = 7.0 feet
SS 32	50/2"	1		160	SAA except dry, abundant cementation	Water level depth at beginning of 2/28/07 = 65.0 feet
SS	9-13-26	18			SAA except moist, contains large shell	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4008**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 4 OF 4	HOLE NO. B-4008

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
33	☒				53.1	165		fragments	Top of Still Branch Formation at a depth of 165.0 feet
SS 34	☒		▲ 34-50/5"	10	48.7			**SAND, silty (SM)** - Very dark greenish gray (GLEY1 3/10Y), wet, very dense, fine to medium grained, +HCL Boring terminated at 169.42 feet	Water level depth at end of 2/28/07 = 10.0 feet

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-4008

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-4009

LOGGED BY	COORDINATES	BEGUN	COMPLETED
A. Reimer	N 1142486.1 E 621156.9	1/29/2007	2/2/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	164.9

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
217.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			217.9			
SS 1	6-4-4	16	217.6		**SAND (SP)** - Topsoil, contains organics	Top of Fill at a depth of 0.0 feet
SS 2	7-7-7	18			**SAND, silty (SM)** - Red (10R 4/6), damp, loose, fine to medium grained, nonplastic	Top of Barnwell Group at a depth of 0.33 feet
SS 3	5-5-6	13		5	SAA except red (2.5YR 5/8), dry, medium dense, medium grained SAA except red (2.5YR 5/6), damp, fine to medium grained, low plasticity	
SS 4	4-8-7	7			SAA	
SS 5	5-7-7	11		10	SAA	
SS 6	9-11-13	13			SAA	
SS 7	8-10-15	9		15	SAA except red (2.5YR 5/6) and yellowish red (5YR 5/6), nonplastic	
			200.9			
SS 8	10-10-11	14		20	**SAND, silty, clayey (SC-SM)** - Yellowish red (5YR 5/6), damp, medium dense, fine to medium grained, low plasticity	
			195.9			
SS 9	11-12-13	11		25	**SAND, silty (SM)** - Reddish yellow (7.5YR 6/6) and yellow (10YR 7/6), damp, medium dense, fine to coarse grained, nonplastic, contains 3/4" thick CLAY seam at 24.5 feet	
			190.9			
SS 10	10-12-13	5		30	**SAND (SP)** - Yellow (10YR 7/6), moist, medium dense, fine to coarse grained, subrounded, nonplastic	
SS 11	6-8-8	9		35	SAA except yellow (10YR 7/6) and strong brown (7.5YR 5/6), moist to wet, slightly lignitic, contains CLAY seams up to 1/4" thick	
			180.9			
SS 12	2-3-2	17		40	***SAND, silty (SM)** - Mottled olive yellow (2.5Y 6/6) and brownish yellow (10YR 6/6), damp, loose, low plasticity	
SS 13	2-2-3	7		45	SAA except mottled yellow (2.5Y 7/6) and brownish yellow (10YR 6/6)	
			170.9			
SS	6-5-5	0			**NO RECOVERY**	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4009

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-4009

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			165.9			
SS 15	6-4-4	14		55	**CLAY, silty (CL-ML)** - Yellow (2.5Y 7/6) and reddish yellow (7.5YR 6/6), damp, medium stiff to stiff, low plasticity	
			160.9			
SS 16	7-9-8	16		60	**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/6), damp to moist, medium dense, fine to medium grained, subrounded, nonplastic	Water level depth at beginning of 1/30/07 = 42.0 feet
			155.9			
SS 17	3-7-11	17		65	***SAND, with silt (SP-SM)** - Very pale brown (10YR 8/2), damp, medium dense, fine to coarse grained, -HCL	
SS 18	5-10-12	16.5		70	SAA except very pale brown (10YR 8/2) and pink (2.5YR 8/3), moist	
SS 19	11-14-15	12		75	SAA	
SS 20	6-7-7	11		80	SAA except very pale brown (10YR 8/2) and pinkish white (5YR 8/2)	
			136.4			Top of Utley Limestone at a depth of 81.5 feet
SS 21	50/0"	0		85	**NO RECOVERY**	
			130.9			
SS 22	11-12-8	17.5		90	**CLAY, silty, sandy (CL-ML)** - Light yellowish brown (2.5YR 6/4), damp, very stiff, low plasticity, fine to medium grained SAND, contains shell fragments, +HCL	
			125.4			Top of Blue Bluff Marl at a depth of 92.5 feet
SS 23	12-24-25	18		95	***SILT (MH)** - Greenish gray (GLEY1 5/5GY), damp, hard, fine grained SAND, +HCL	
SS 24	9-11-14	18		100	SAA except very stiff	
SS 25	50/6"	4		105	SAA except greenish gray (GLEY1 5/5GY), hard	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4009**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-4009

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
UD 1		24		110	SAA Pocket Penetrometer: >4.5 TSF	Pitcher
			105.9			
SS 26	9-12-48	18		115	***SILT, with sand (MH)** - Greenish gray (GLEY1 5/5GY), dry to damp, hard, contains cementation, +HCL	
SS 27	50/4"	4		120	SAA except contains some shell fragments	Water level depth at beginning of 1/31/07 = 73.0 feet
SS 28	26-32-48	18		125	SAA except dry, no shells or cementation	
SS 29	50/3"	3		130	SAA except contains cementation	
			85.9			
SS 30	11-12-27	18		135	**CLAY, sandy (CH)** - Greenish gray (GLEY1 7/5GY), dry to damp, hard, contains shell fragments, +HCL	
SS 31	10-28-50/4"	16		140	SAA except dry, no shell fragments	
SS 32	16-17-19	18		145	SAA	
UD 2		23.2		150	SAA Pocket Penetrometer: >4.5 TSF	Pitcher
SS 33	13-20-22	18		155	SAA except greenish gray (GLEY1 6/10Y)	
SS 34	9-13-18	18		160	SAA	
			55.9			Top of Still Branch Formation at a depth of 162.0 feet
SS	16-32-50/5"	16			**SAND, silty, clayey (SC-SM)** - Dark greenish	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4009**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-4009

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
35	☒				53.0			gray (GLEY1 4/10GY) and greenish gray (GLEY1 6/5G), damp, very dense, fine to coarse grained, +HCL Boring terminated at 164.92 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4009**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4010

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1142667.6 E 621249.0	1/25/2007	2/22/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	6 Inches	328848	160.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.1			
SS 1	5-6-7	18			**SAND, silty (SM)** - Yellowish red (5YR 5/8), dry, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	7-5-6	18			SAA	
SS 3	2-2-3	18		5	SAA except loose	
SS 4	3-4-5	15			SAA except medium dense	
SS 5	5-7-8	17		10	SAA	
SS 6	11-15-12	18			SAA	
SS 7	13-13-15	18		15	SAA except red (2.5Y 5/8), damp	
			202.1			
SS 8	8-9-10	14		20	**SAND, silty, clayey (SC-SM)** - Red (2.5YR 5/6), damp, medium dense, fine grained, low plasticity	
			197.1			
SS 9	7-7-9			25	**SAND, silty (SM)** - Yellowish brown (10YR 5/8), damp, medium dense, fine to medium grained	
			192.1			
SS 10	5-6-9	18		30	**SAND, silty, clayey (SC-SM)** - Yellowish brown (10YR 5/8), damp, medium dense, fine to medium grained	
SS 11	4-3-5	18		35	SAA except brownish yellow (10YR 6/6), loose, fine grained	
			182.1			
SS 12	3-4-5	18		40	**CLAY, with sand (CL-ML)** - Yellow (2.5Y 6/6), damp, stiff, low plasticity, fine grained SAND	
			177.1			
SS 13	5-4-6	18		45	**SAND, clayey (SC)** - Yellow (2.5Y 7/8), damp, medium dense, fine to coarse grained	
			172.1			
SS	6-4-6	15			**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/6), damp, medium dense, fine grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4010

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4010

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			167.1			
SS 15	6-7-9	17		55	**SAND, silty (SM)** - Yellow (10YR 7/6), damp, medium dense, fine grained, -HCL	
SS 16	10-11-16	12		60	SAA except fine to medium grained	
			157.1			
SS 17	13-10-8	15		65	**SAND, with silt (SP-SM)** - Yellow (2.5Y 7/6), moist, medium dense, fine to medium grained, -HCL	
SS 18	6-8-8	18		70	SAA	
			147.1			
SS 19	9-10-16	18		75	**SAND, silty (SM)** - Pale yellow (2.5Y 8/3), damp, medium dense, fine grained, -HCL	
SS 20	8-7-12	18		80	SAA	
			137.1			Top of Utley Limestone at a depth of 82.0 feet
SS 21	50/2"	1		85	**CLAY, sandy (CL)** - Light olive brown (2.5Y 5/3), damp, hard, low plasticity, fine to coarse grained SAND, contains shell fragments, +HCL	Loss of circulation
			132.1			
SS 22	17-27-30	18	129.3	90	**CLAY (CL)** - Light yellowish brown (2.5Y 6/4), damp, hard, medium plasticity, contains cemented shell fragments, +HCL	Top of Blue Bluff Marl at a depth of 89.75 feet
				95	**CLAY, with sand (CL)** - Greenish gray (GLEY1 5/5GY), damp, hard, medium plasticity, contains SAND seams, +HCL	
			122.1			Installed 6" steel casing to a depth of 97.0 feet
SS 23	50/2"	2		100	**CLAY (CL)** - Greenish gray (6/5GY), damp, hard, low plasticity, contains cementation, +HCL	Water level depth at beginning of 2/20/07 = Ground surface
SS 24	13-23-24	18		105	SAA except greenish gray (GLEY1 5/10Y), contains shell fragments	
			112.1			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4010**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4010

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25		16-50/5"	10		110		***SILT, with sand (MH)** - Greenish gray (GLEY1 6/5GY), damp, hard, very fine grained SAND, +HCL	
				107.1				
UD 1			17.5		115		**CLAY (CL)** Pocket Penetrometer: > 4.75 TSF	Pitcher
UD 2			18.5		120		SAA Pocket Penetrometer: > 4.75 TSF	Pitcher Water level depth at end of 2/20/07 = 22.0 feet
SS 26		32-32-50/5"	17		125		SAA except greenish gray (GLEY1 6/10Y), damp, hard, low to medium plasticity	Water level depth at beginning of 2/21/07 = 22.0 feet
				92.1				End logging by S. Woodham. Begin logging by D. Brooks.
SS 27		36-50/5"	11		130		***CLAY, sandy (CH)** - Greenish gray (GLEY1 5/5GY), damp, hard, +HCL	
UD 3			19		135		SAA	Pitcher Water level depth at end of 2/21/07 = Ground surface
SS 28		22-24-26	18		140		SAA	
SS 29		10-11-23	18		145		SAA except greenish gray (GLEY1 6/10Y)	
SS 30		19-33-40	18		150		SAA	
SS 31		20-21-26	18		155		SAA except light greenish gray (GLEY1 7/10Y)	
				62.1				Top of Still Branch Formation at a depth of 157.0 feet
SS 32		20-26-32	10	59.1	160		**SAND, with silt (SP-SM)** - Dark greenish gray (GLEY1 4/10Y), damp, very dense, fine to medium grained, nonplastic, -HCL Boring terminated at 160 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4010**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4011

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1142773.1 E 621236.4	1/25/2007	2/5/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.1			
SS 1	4-3-8	18			**SAND, silty (SM)** - Red (2.5YR 4/6) and yellowish brown (10YR 5/6), dry, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	9-9-9	18			SAA except yellowish brown (10YR 5/6)	
SS 3	3-4-5	15		5	SAA except damp, loose	
SS 4	2-2-5	16			SAA except strong brown (7.5YR 5/6)	
SS 5	8-12-16	18	208.6	10	SAA except yellowish brown (10YR 5/6) and red (2.5YR 4/6), medium dense	
SS 6	10-10-13	16			**SAND, silty, clayey (SC-SM)** - Yellowish red (5YR 5/6), damp, medium dense, fine grained	
SS 7	6-12-17	18		15	SAA except fine to medium grained	
SS 8	5-7-9	18		20	SAA except yellow (10YR 7/6)	
SS 9	5-6-9	16		25	SAA	
			192.1			
SS 10	3-4-5	15		30	**CLAY, silty (CL-ML)** - Yellow (2.5Y 7/6), damp, stiff, low plasticity	
SS 11	3-4-5	15		35	SAA	
			182.1			
SS 12	5-7-11	18		40	**SAND, silty, clayey (SC-SM)** - Yellow (2.5Y 7/6), damp, medium dense, fine grained	
			177.1			
SS 13	4-3-4	18		45	**CLAY, with sand (CL)** - Yellow (2.5Y 7/6), damp, medium stiff, low plasticity, fine grained SAND	
			172.1			
SS	4-8-11	16			***SAND, with silt (SP-SM)** - Yellow (2.5Y 7/6), damp, medium dense, fine grained, -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4011

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4011

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	7-10-10	15		55	SAA	
SS 16	11-18-15	14	158.1	60	SAA except dense	
SS 17	4-7-8	18	152.1	65	**CLAY, with sand (CL)** - Pale yellow (5Y 8/4), damp, stiff, low plasticity, +HCL	
SS 18	14-14-17	18	147.1	70	**SAND, clayey (SC)** - Pale yellow (5Y 8/2), damp, dense, fine to medium grained, contains shell fragments, +HCL	Loss of circulation at a depth of 71.0 feet
SS 19	9-12-18	18	142.1	75	**SAND, silty (SM)** - Pale yellow (5Y 7/3), damp, medium dense, fine to medium grained, -HCL	
SS 20	50/3"	3	136.1	80	**CLAY (CL)** - Olive brown (2.5Y 4/3), damp, hard, low plasticity, -HCL	
SS 21	28-50/5"	7	132.1	85	**CLAY, sandy (CL)** - Greenish gray (GLEY1 5/5GY), dry, hard, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 83.0 feet
SS 22	24-25-30	18		90	***SILT, with sand (MH)** - Greenish gray (GLEY1 5/10GY), dry, hard, +HCL	End logging by S. Woodham. Begin logging by A. Reimer.
SS 23	26-32-31	16		95	SAA	
SS 24	50/3"	3		100	SAA except contains cementation	
SS 25	21-50/4"	9		105	SAA except contains shell fragments up to 1/4" in diameter	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4011**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4011

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	30-50/2.5"	8.5		110		SAA except damp	
SS 27	☒	22-41-50/4"	16		115		SAA except dry to damp, no shell fragments	
SS 28	☒	50/3"	3		120		SAA except dry	
SS 29	☒	17-17-31	18		125		SAA except dry to damp	
SS 30	☒	50/5"	5		130		SAA	
SS 31	☒	25-29-31	18		135		SAA	
SS 32	☒	18-27-28	18		140		SAA except greenish gray (GLEY1 6/10Y), dry	
SS 33	☒	18-22-34	18		145		SAA	
SS 34	☒	19-30-40	18	72.1 69.1	150		**SAND, silty, clayey (SC-SM)** - Greenish black (GLEY1 3/10Y), damp, very dense, -HCL Boring terminated at 150 feet	Top of Still Branch Formation at a depth of 147.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	B-4011

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-4013(C)

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1142842.7 E 621020.3	2/15/2007	3/5/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Towe-MACTEC	CME-550	6 Inches	337153	165.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.2			
SS 1	4-7-9	11			**SAND, silty (SM)** - Dark grayish brown (2.5Y 4/2), damp, medium dense, low plasticity, contains GRAVEL fragments	Top of Barnwell Group at a depth of 0.0 feet
SS 2	4-4-3	13			SAA except yellowish red (5YR 5/6), loose, fine grained	
SS 3	3-2-6	11			SAA except yellowish red (5YR 5/8)	
				5		
SS 4	4-4-6	10			SAA except yellowish brown (10YR 5/6)	
SS 5	2-2-2	8			SAA except strong brown (7.5YR 5/6)	
			211.7	10		
SS 6	3-4-8	12			**CLAY, silty with sand (CL-ML)** - Red (10R 4/8), pinkish white (10R 8/2), and brownish yellow (10YR 6/6), damp, stiff, low plasticity, fine grained	
			209.2			
SS 7	9-17-18	16			**SAND, clayey (SC)** - Yellowish red (5YR 5/8), damp, dense, fine grained, low plasticity	
				15		
SS 8	11-14-15	16			SAA except strong brown (7.5YR 5/8), medium dense	
SS 9	14-20-16	16			SAA except yellowish red (5YR 5/8), contains CLAY seams	
				20		
SS 10	6-9-19	18			SAA except red (2.5YR 4/8), fine to medium grained	
SS 11	16-17-12	12			SAA except yellowish red (5YR 5/8)	
				25		
SS 12	5-7-9	14			SAA	
SS 13	5-6-6	14			SAA except brown (7.5YR 5/3)	
				30		
SS 14	5-6-6	13.5			SAA except strong brown (7.5YR 5/6), fine grained, contains trace phosphate grains	
SS 15	5-6-6	10.5			SAA except yellowish brown (10YR 5/8)	
				35		
			186.2			
SS 16	4-4-5	18			***CLAY, sandy (CL)** - Brownish yellow (10YR 6/8), damp, stiff, fine grained, low plasticity	
SS 17	2-4-4	18			SAA except brownish yellow (10YR 6/6), medium stiff, contains trace phosphate grains	
				40		
SS 18	2-4-4	18			SAA	
SS 19	3-4-5	18			SAA except stiff	
			176.7	45		
SS 20	3-4-6	18			**SAND, clayey (SC)** - Very pale brown (10YR 7/6), damp, loose, fine to medium grained, low plasticity, contains CLAY seams and trace shell fragments and phosphate grains	
SS	6-8-8	10.5			SAA except yellow (10YR 7/6), medium dense	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4013(C)

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-4013(C)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 21	5-6-7	12.5			SAA	
SS 22	4-6-6	13			SAA	
SS 23	4-6-10	17.5		55	SAA except pale yellow (2.5Y 7/3)	
SS 24	7-9-11	11			SAA	
SS 25	6-6-7	10		60	SAA except pale yellow (2.5Y 7/4), fine grained, contains trace phosphate grains, -HCL	
SS 26	4-6-7	12			SAA except pale yellow (5Y 8/4)	
SS 27	6-7-10	13		65	SAA	
SS 28	7-6-3	14.5			SAA except olive yellow (2.5Y 6/6)	
SS 29	2-3-3	18	151.7	70	**CLAY, sandy (CL)** - Yellow (2.5Y 8/6), damp, medium stiff, low plasticity, fine grained, contains SAND seams and trace shell fragments and phosphate grains, -HCL	
SS 30	2-3-4	18			SAA except pale yellow (2.5Y 8/4)	
SS 31	9-11-10	10	146.7	75	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), damp, medium dense, fine grained, low plasticity, contains trace phsphate grains, -HCL	
SS 32	8-10-9	8			SAA except pale yellow (2.5Y 8/3)	
SS 33	4-5-6	9		80	SAA except yellowish brown (10YR 5/6), contains light brownish gray (10YR 6/2) SAND seam	
SS 34	5-2/12"	2			SAA except dark yellowish brown (10YR 4/6)	
SS 35	5-5-7	18	136.7	85	**CLAY, silty with sand (CL-ML)** - Pale olive (5Y 6/4), dry to damp, stiff, low plasticity, fine grained SAND, contains trace shell fragments and phosphate grains, +HCL	Loss of circulation at a depth of 85.0 feet Top of Blue Bluff Marl at a depth of 85.5 feet
SS 36	21-18-50/4"	16			SAA except greenish gray (GLEY1 5/10GY), very stiff	
SS 37				90		Water level depth at end of 2/15/07 = 37.0 feet Installed 6" steel casing to a depth of 97.0 feet (Installed by Graves Drilling)
			128.2	95		End drilling by Towe-MACTEC. Begin drilling by Banks-MACTEC using same drill. Pitcher
UD 1		0	121.7	100	**NO RECOVERY**	
UD 2		28.5			**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/5GY), damp, hard, low plasticity, contains trace shell fragments and phosphate grains, +HCL	Pitcher
SS 38	15-50/6"	12		105	Pocket Penetrometer: >4.5 TSF SAA except dark greenish gray (GLEY1 4/10GY)	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4013(C)**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-4013(C)

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 39	12-18-50/2"	14			SAA except dark greenish gray (GLEY1 4/5GY)	
				110		
SS 40	19-17-24	18			SAA except contains cementation	
SS 41	9-50/1"	7			SAA except greenish gray (GLEY1 5/5GY)	
				115		
SS 42	50/6"	6			SAA	
SS 43	15-50/3"	9			SAA	
				120		
SS 44	24-50/6"	12			SAA except no cementation	
SS 45	50/4"	4			SAA except greenish gray (GLEY1 5/10GY)	
				125		
SS 46	16-15-37	18			SAA	
UD 3		22.5			SAA except greenish gray (GLEY1 5/5GY), contains cementation Pocket Penetrometer: >4.5 TSF	Water level depth at end of 2/28/07 = Top of casing Pitcher
				130		
SS 47	50/1"	1			SAA	Water level depth at beginning of 3/1/07 = 7.0 feet
SS 48	17-20-21	18			SAA	
				135		
SS 49	16-14-24	18			SAA except dry to damp, contains no cementation	
SS 50	20-24-30	18			SAA	
				140		
SS 51	18-50/6"	12			SAA	
SS 52	50/5"	5			SAA except contains cemented SAND seams	
				145		
SS 53	18-21-24	18			SAA	
SS 54	7-9-28	18			SAA	
				150		
SS 55	24-50/3"	9			SAA	Water level depth at end of 3/1/07 = Top of casing
SS 56	14-21-23	18			SAA	Water level depth at beginning of 3/5/07 = 36.0 feet
				155		
SS 57	10-14-17	18			SAA	
			64.2			
SS 58	50/0"	0			**NO RECOVERY**	
			62.2	160		
SS 59	21-29-50/3"	15			**SAND, silty (SM)** - Very dark greenish gray (GLEY1 3/10GY), moist, very dense, medium grained, -HCL	Top of Still Branch Formation at a depth of 160.0 feet
SS	13-17-15	16			SAA except dense	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4013(C)**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 4 OF 4	HOLE NO. B-4013(C)

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
60	☒				57.2	165		Boring terminated at 165.0 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-4013(C)

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4014

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Brooks	N 1142832.0 E 620950.2	1/17/2007	1/30/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Christian-MACTEC	CME-75	3 Inches	200587	158.6

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.7			Top of Barnwell Group at a depth of 0.0 feet
SS 1	2-5-5	18			**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), damp, loose, fine grained	
SS 2	2-8-10	14			SAA except strong brown (7.5YR 5/8), medium dense	
SS 3	3-4-5	12			SAA except strong brown (7.5YR 4/6), loose	
			214.7	5		
SS 4	2-3-4	14			***SAND (SP)** - Strong brown (7.5YR 5/8), damp, loose, fine to medium grained	
SS 5	1-3-4	8			SAA	
			210.2	10		
SS 6	8-15-22	15			***SAND, clayey (SC)** - Yellowish red (5YR 5/8), damp, dense, fine to medium grained, low plasticity	
			207.7			
SS 7	9-17-24	15			**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), damp, dense, fine to medium grained, nonplastic	
				15		
			203.7			
SS 8	5-12-18	15			***SAND, silty, clayey (SC-SM)** - Yellowish red (5YR 4/6), damp, dense, fine grained, low plasticity	
				20		
			198.7			
SS 9	6-10-14	10			**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), damp, medium dense, medium grained, nonplastic	
				25		
			193.7			
SS 10	3-6-6	13			***SAND, silty, clayey (SC-SM)** - Yellowish brown (10YR 5/8), damp, medium dense, fine grained, low plasticity	
				30		
SS 11	5-8-7	14			SAA except medium to coarse grained	
				35		
			183.7			
SS 12	2-4-7	15			***SILT, sandy (MH)** - Brownish yellow (10YR 6/8), damp, stiff, fine grained, -HCL	
				40		
			178.7			
SS 13	3-5-6	18			**SAND, with silty clay (SP-SC)** - Brownish yellow (10YR 6/8), damp, medium dense, very fine to fine grained, low plasticity	
				45		
			173.7			
SS	4-5-6	14			***SAND, clayey (SC)** - Brownish yellow (10YR 6/8), damp, medium dense, fine to	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4014

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4014

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					medium grained, low plasticity, -HCL	
SS 15	3-4-9	16		55	SAA	
SS 16	6-6-9	14		60	SAA	
SS 17	7-8-10	3		65	SAA except yellow (10YR 7/8)	
			154.2			
SS 18	3-5-7	16		70	**SAND, with clay (SP-SC)** - Yellow (2.5Y 8/6), damp, medium dense, fine to medium grained, contains shell hash, +HCL	
			148.7			
SS 19	11-13-25	8		75	**SAND, with clay and gravel (SP-SC)** - White (10Y 8/1), damp, dense, low plasticity, contains shell hash, +HCL	
			143.7			Top of Utley Limestone at a depth of 77.0 feet
SS 20	50/3"	0		80	**NO RECOVERY**	Installed casing to a depth of 90.0 feet
			138.7			
SS 21	25-10-7	13		85	**GRAVEL, silty, clayey with sand (GC-GM)** - Very pale brown (10YR 8/3), wet, medium dense, contains shell fragments, +HCL	
			133.5			Top of Blue Bluff Marl at a depth of 87.2 feet
SS 22	17-50/5"	8		90	***SILT, sandy (MH)** - Greenish gray (GLEY2 5/5BG), wet, hard, +HCL	
SS 23	35-32-35	18		95	SAA except damp	
SS 24	18-50/3"	9		100	SAA	Water level depth at end of 1/18/07 = Ground surface
SS 25	8-24-40	18		105	SAA	Water level depth at beginning of 1/22/07 = 59.0 feet
			113.7			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4014**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4014

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		50/2"	0		110		**NO RECOVERY**	
				108.7				Water level depth at end of 1/22/07 = Ground surface
SS 27		24-40-34	18		115		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10GY), damp, hard, low plasticity, +HCL	Water level depth at beginning of 1/23/07 = 69.8 feet
SS 28		9-15-36	18		120		SAA	
SS 29		36-50/2"	8		125		SAA	
SS 30		50/5"	5		130		SAA	
SS 31		9-18-50/5"	17		135		SAA except greenish gray (GLEY1 6/10Y)	
				83.7				
SS 32		13-35-50/2"	14		140		**SILT (ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, nonplastic, +HCL	Water level depth at end of 1/23/07 = Ground surface End loggng by D. Brooks. Begin logging by M. Harvey.
SS 33		19-21-25	18		145		SAA	
SS 34		12-21-19	18		150		SAA except contains some shell hash	
SS 35		13-20-22	18		155		SAA	
				64.0				Top of Still Branch Formation at a depth of 156.75 feet
SS 36		50/1"	1	62.2			**SAND (SP)** - Bluish gray (GLEY2 5/10B), wet, very dense, -HCL Boring terminated at 158.58 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4014**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4015

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1142773.0 E 621115.2	1/19/2007	1/24/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	155.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.1	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.1			
SS 1	1-4-7	17			**SAND, silty (SM)** - Strong brown (7.5YR 5/6), damp, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0
SS 2	8-12-11	16			SAA	
SS 3	8-10-10	18		5	SAA	
SS 4	2-3-3	18			SAA except loose	
SS 5	2-4-5	17		10	SAA except yellowish brown (10YR 5/6)	
SS 6	4-6-8	18			SAA except red and yellow (2.5YR 4/8 and 10YR 7/6), medium dense	
SS 7	6-10-12	18		15	SAA	
			203.1			
SS 8	13-16-16	18		20	**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), damp, dense, fine to medium grained	
SS 9	7-9-10	12		25	SAA except light yellowish brown (10YR 6/4), medium dense	
			193.1			
SS 10	6-8-8	18		30	**SAND, silty (SM)** - Brownish yellow (10YR 6/6), damp, medium dense, fine to medium grained	
			188.1			
SS 11	4-5-6	18		35	**CLAY, silty with sand (CL-ML)** - Brownish yellow (10YR 6/6), damp, stiff, low plasticity	
SS 12	3-5-5	18		40	SAA	
			178.1			
SS 13	4-4-7	18		45	**SILT, sandy (ML)** - Mostly brownish yellow (10YR 6/6), damp, stiff, low plasticity	
			173.1			
SS	4-3-4	18			**SAND, silty, clayey (SC-SM)** - Yellow (2.5Y 7/8), damp, loose, fine grained, low plasticity,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4015

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GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4015

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					-HCL	
			168.1			
SS 15	0-1-2	18		55	**CLAY, sandy (CL)** - Yellowish red (5YR 5/6), damp, soft, low plasticity, -HCL	
			163.1			
SS 16	4-5-8	16		60	***SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), damp, medium dense, fine grained, -HCL	
			158.1			
SS 17	7-6-6	12		65	**SAND, silty, clayey (SC-SM)** - Red (2.5YR 5/6), damp, medium dense, fine grained, -HCL	
			153.1			
SS 18	2-3-5	18		70	**CLAY, silty (CL)** - Yellow (2.5Y 7/6), damp, medium stiff, low plasticity, -HCL	
			148.1			
SS 19	4-6-11	18	146.1	75	**SAND, clayey (SC)** - Dark grayish brown (2.5Y 4/2), damp, medium dense, fine grained, -HCL **SAND (SP)** - Pale yellow (2.5Y 8/3), damp, medium dense, fine to medium grained, -HCL	
SS 20	4-5-6	12		80	SAA except fine grained	Loss of circulation at a depth of 82.0 feet, casing installed to a depth of 85.0 feet. From there, casing advanced as needed to a depth of 99.0 feet.
			138.1			
SS 21	1-3-8	18	135.6	85	**CLAY, silty (CL-ML)** - Light yellowish brown and brownish yellow (2.5Y 6/3 and 10YR 6/8), damp, stiff, low plasticity, -HCL ***SILT (MH)** - Greenish gray (GLEY1 5/5GY), dry, stiff, +HCL	Top of Blue Bluff Marl Formation at a depth of 84.5 feet Water level depth at end of 1/19/07 = Top of casing
SS 22	26-25-32	18		90	SAA except damp, hard	Water level depth at beginning of 1/22/07 = 6 feet
SS 23	18-50/4"	10		95	SAA except contains cemented layers	Water level depth at beginning 1/23/07 = 10 feet
SS 24	13-14-21	18		100	SAA except contains shell fragments	
			118.1			
SS 25	14-16-19	18		105	***CLAY, with sand (CH)** - Greenish gray (GLEY1 5/5GY), dry, hard, +HCL	
			113.1			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4015**

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4015

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	36-50/4"	10		110	**CLAY, with sand (CL)** - Greenish gray (GLEY 1 6/5GY), damp, hard, low plasticity, very fine grained sand, some cemented areas, +HCL	
SS 27	16-20-40	18		115	SAA except contains shell fragments	Water level depth at end of 1/23/07 = 5 feet
SS 28	8-20-50/5"	17	98.1	120	SAA	Water level depth at beginning of 1/24/07 = 71 feet
SS 29	16-20-16	18		125	**CLAY (CL)** - Greenish gray (GLEY 1 6/10Y), damp, hard, low plasticity, some cemented areas, +HCL	
SS 30	21-46-50/3"	15		130	SAA	
SS 31	48-50/5.5"	11	83.1	135	SAA	
SS 32	11-15-28	18		140	**CLAY, with sand (CL)** - Light greenish gray (GLEY 1 7/5GY), damp, hard, low plasticity, fine grained sand, +HCL	
SS 33	8-18-28	18		145	SAA	
SS 34	11-14-21	18	68.1	150	SAA except contains shell fragments	
SS 35	28-26-31	18	65.1	155	**SAND, with silt (SP-SM)** - Very dark greenish gray (GLEY 1 3/10Y), moist, very dense, fine grained, contains lean clay laminations, -HCL Boring terminated at 155 feet	Top of Still Branch Formation at a depth of 152 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4015**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4016

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1142996.4 E 621112.9	1/3/2007	1/4/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	149.6

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.2			
SS 1	10-10-9	18	219.7		**GRAVEL, silty (GM)** - Dark bluish gray (GLEY2 4/10B), dry, medium dense	Top of Fill at a depth of 0.0 feet
SS 2	11-8-8	17			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/8), dry, medium dense, very fine grained, nonplastic	Top of Barnwell Group at a depth of 1.5 feet
SS 3	3-4-4	8		5	SAA except strong brown (7.5YR 5/8), moist, loose	
SS 4	2-2-2	14	213.2		SAA except yellowish red (5YR 5/6)	
SS 5	2-1-3	0	210.7	10	**NO RECOVERY**	
SS 6	7-9-11	16			**SAND, with silt (SP-SM)** - Strong brown (7.5YR 5/8), moist, medium dense, very fine grained, nonplastic	
SS 7	6-10-13	15		15	SAA except fine grained	
SS 8	9-11-10	10		20	SAA except reddish yellow (7.5YR 6/8)	
SS 9	6-6-8	13		25	SAA except yellowish red (5YR 5/8)	
			194.2			
SS 10	6-11-14	14	192.2	30	**CLAY (CL)** - Brownish yellow (10YR 6/8), moist, medium stiff, medium plasticity	
			189.2		**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/6), wet, medium grained, nonplastic	
SS 11	6-5-4	3		35	**CLAY, with sand (CL)** - Brownish yellow (10YR 6/8), moist, stiff, medium plasticity, fine grained SAND	
			184.2			
SS 12	3-3-3			40	**CLAY (CL)** - Yellow (10YR 7/6), moist, medium stiff, medium plasticity	
			179.2			
SS 13	WOH/6"-1-3	18		45	**SILT (ML)** - Yellow (10YR 7/6), moist, medium stiff, medium plasticity	
SS	3-3-4	18			SAA except brownish yellow (10YR 6/6), wet	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4016

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4016

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			169.2			
SS 15	4-5-7	15		55	**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), wet, medium dense, fine grained, nonplastic, -HCL	
SS 16	1-3-3	18		60	SAA except strong brown (7.5YR 5/6), loose, contains shell fragments	
SS 17	6-11-12	18		65	SAA except yellow (10YR 7/6), medium dense, very fine grained	End logging by R. Clark. Begin logging by D. Atkinson.
SS 18	8-8-10	16		70	SAA except yellow (10YR 7/8), fine grained	
SS 19	6-7-14	18		75	SAA except red (2.5YR 4/8)	
SS 20	14-14-16	13		80	SAA except reddish yellow (7.5YR 7/8), medium to coarse grained	
SS 21	12-14-50/1"	13	134.7	85	SAA except brownish yellow (10YR 6/8), very dense, contains 1" thick CLAY lens	Top of Blue Bluff Marl at a depth of 86.5 feet
SS 22	7-27-50/1"	13		90	***SILT, with sand (MH)** - Dark greenish gray (GLEY1 4/10GY), wet, hard, +HCL	
SS 23	10-20-26	18		95	SAA except greenish gray (GLEY1 5/10GY)	
SS 24	14-16-21	18	119.2	100	SAA	Water level depth at end of 1/3/07 = Top of casing
SS 25	20-21-22	7		105	**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 5/5GY), wet, hard, low plasticity, very fine grained SAND, +HCL	Water level depth at beginning of 1/4/07 = 47.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4016**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4016

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	⊠	50/5"	5		110		SAA except light greenish gray (GLEY1 7/5GY)	
				109.2				
SS 27	⊠	12-50/3"	9		115		**SILT (ML)** - Greenish gray (GLEY1 6/10GY), wet, hard, +HCL	
				104.2				
SS 28	⊠	15-19-33	18		120		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), wet, hard, high plasticity, contains trace shell fragments, +HCL	
SS 29	⊠	50/4"	4		125		SAA except light greenish gray (GLEY1 7/5GY), medium plasticity	
SS 30	⊠	14-20-27	18		130		SAA except greenish gray (GLEY1 6/10GY), high plasticity	
SS 31	⊠	12-33-50/1"	7		135		SAA except light greenish gray (GLEY1 7/10Y)	
SS 32	⊠	15-15-30	18		140		SAA except greenish gray (GLEY1 6/10Y), medium plasticity	
SS 33	⊠	20-23-21	16		145		SAA except greenish gray (GLEY1 5/10Y), high plasticity	
SS 34	⊠	25-20-50/1"	13	71.7			SAA except light greenish gray (GLEY1 7/10Y)	
							Boring terminated at 149.58 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4016**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4017

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1143034.8 E 620949.9	2/15/2007	3/8/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	10 Inches	219907	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.9			
SS 1	1-8-10	11	220.4		**CONCRETE**	Top of Concrete at a depth of 0.0 feet
SS 2	10-12-12	11			**SAND (SP)** - Strong brown (7.5YR 5/8) and reddish yellow (7.5YR 7/6), moist, medium dense, fine grained	Top of Barnwell Group at a depth of 0.5 feet
SS 3	3-6-8	12	216.9		SAA except light brown (7.5YR 6/4)	Begin drilling with a 3 7/8" drill bit
					SAA except reddish yellow (7.5YR 6/8)	
				5	**SAND, clayey (SC)** - Mottled yellowish red (5YR 5/8) and strong brown (7.5YR 5/8), moist, medium dense, fine grained	
SS 4	7-15-17	17			SAA except dense	
			212.9			
SS 5	11-16-18	15.5			**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), moist, dense, fine grained	
			210.4	10		
SS 6	11-15-20	11			**SAND, clayey (SC)** - Mottled yellowish red (5YR 5/8) and brownish yellow (10YR 6/8), moist, dense, fine to medium grained	
SS 7	15-12-19	14			SAA except medium to coarse grained	
				15		
			203.9			
SS 8	8-11-12	12		20	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), moist, medium dense, medium grained, contains black manganese staining	
			198.9			
SS 9	5-7-8	15		25	**SAND, clayey (SC)** - Yellowish brown (10YR 5/8), moist, medium dense, medium to coarse grained, contains CLAY lenses and trace black manganese staining	
			193.9			
SS 10	4-7-8	18		30	**SILT, with sand (ML)** - Pale yellow (2.5Y 7/4), moist, stiff to very stiff, low plasticity, very fine to fine grained SAND, contains SAND lenses and trace black manganese staining	
SS 11	3-4-5	18		35	SAA except stiff, contains no manganese staining	
SS 12	4-6-10	18		40	SAA except very stiff, fine to medium grained SAND, contains shell fragments and abundant black manganese staining	
			178.9			
SS 13	8-8-9	12		45	**SAND, silty (SM)** - Yellow (2.5Y 7/6), moist, medium dense, medium grained, contains shell fragments, -HCL	
			173.9			
SS	5-6-11	18			**SILT, sandy (ML)** - Pale yellow (5Y 7/4), moist, very stiff, nonplastic to low plasticity,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4017

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4017

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					fine grained SAND, -HCL	
SS 15	8-9-9	12		55	SAA except mottled pale yellow (5Y 7/4) and pinkish gray (5YR 7/2), fine to medium grained SAND, contains trace shell fragments	Water level depth at end of 2/15/07= 6.0 feet
			163.9			
SS 16	9-12-12	15		60	**SAND, silty (SM)** - Pinkish gray (7.5YR 7/2), moist to wet, medium dense, fine grained	Water level depth at beginning of 2/16/07= 35.0 feet
SS 17	4-3-2	9	156.7		SAA except loose, medium grained	
			154.9	65	**SILT, with sand (ML)** - Pale yellow (5Y 8/3), wet, medium stiff, nonplastic, fine to medium grained SAND, contains some shell fragments, +HCL	Top of Utley Limestone at a depth of 66.0 feet Loss of circulation at a depth of 66.0 feet
SS 18	50/3.5"	3		70	**SAND, silty (SM)** - Pinkish white (5YR 8/2), wet, very dense, very coarse grained, contains abundant cemented shell hash, +HCL	
SS 19	12-14-20	18		75	SAA except very pale brown (10YR 8/2), dense, fine to medium grained, contains shell fragments	
SS 20	15-50/4"	10		80	SAA except pale yellow (2.5Y 7/4), very dense, fine grained	
SS 21	50/1"	0.5		85	SAA except mostly cemented shell fragments and shell hash	
			133.9			
SS 22	50/6"-26-32	18	131.9	90	**CLAY, silty (CL-ML)** - Pale olive (5Y 6/3), moist, hard, nonplastic to low plasticity, contains cemented shell fragments, +HCL ***CLAY, with sand (CL)** - Dark greenish gray (GLEY1 4/10Y), moist to damp, hard, nonplastic to low plasticity, contains trace shell fragments, +HCL	Top of Blue Bluff Marl at a depth of 89.0 feet Water level depth at end of 2/16/07= 35.0 feet
				95		
UD 1		16.5			SAA Pocket Penetrometer: >4.75 TSF	Reamed hole to a depth of 90.0 feet using a 9 7/8" drill bit. Installed 6" steel casing to a depth of 95.0 feet. Resumed drilling with a 5 7/8" drill bit.
SS 23	10-14-21	18		100	SAA except damp	Pitcher Water level depth at end of 3/6/07= 4.0 feet
SS 24	16-26-50/3"	15		105	SAA	Water level depth at beginning of 3/7/07= 6.5 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4017**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4017

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 25	50/3"	1		110	SAA except greenish gray (GLEY1 5/10Y), dry to damp, contains abundant cementation	
UD 2		1.5		115	SAA Pocket Penetrometer: >4.75 TSF	Pitcher
UD 3		13.25			SAA Pocket Penetrometer: >4.75 TSF	Pitcher
SS 26	22-35-50/6"	18		120	SAA	Changed to a 3 7/8" drill bit
SS 27	WOH/6"-50/1.5	7.5		125	SAA	
SS 28	9-28-50/1"	13		130	SAA except no shell fragments and some cementation	
SS 29	50/4"	4		135	SAA except abundant cementation	Water level depth at end of 3/7/07= 6.5 feet
SS 30	13-14-48	18		140	SAA except greenish gray (GLEY1 6/10Y)	Water level depth at beginning of 3/8/07= 10.0 feet
SS 31	WOH/12"-21	18		145	SAA except no cementation	
SS 32	12-12-21	18	70.9	150	SAA except some cementation Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4017**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4018

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1142735.5 E 621315.5	2/26/2007	2/28/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Bilbrey-Miller Drilling	CME-85	6 Inches	270256	160.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.3	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ⊙ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.3			
SS 1	6-7-10	18	218.8		**SAND, with silt and gravel (SP-SM)** - Brown (10YR 5/3), damp, medium dense, very fine grained, nonplastic	Top of Fill at a depth of 0.0 feet
SS 2	10-12-12	13			**SAND, with clay (SP-SC)** - Red (2.5YR 5/6), damp, medium dense, very fine grained, nonplastic	Top of Barnwell Group at a depth of 1.5 feet
SS 3	2-2-3	16		5	SAA except loose	
SS 4	2-2-4	17			SAA	
SS 5	3-3-4	16	209.8	10	SAA	
SS 6	3-5-7	18	207.3		**CLAY, with sand (CL)** - Reddish yellow (7.5YR 6/8), damp, stiff, low plasticity, low toughness, very fine grained SAND	
SS 7	4-5-8	18		15	**SAND, with clay (SP-SC)** - Red (2.5YR 4/8), damp, medium dense, very fine grained, nonplastic	
SS 8	4-8-7	18		20	SAA except red (2.5YR 5/8)	
SS 9	6-7-8	18		25	SAA except reddish yellow (7.5YR 6/8), medium grained	
SS 10	6-8-9	17	188.3	30	SAA except reddish yellow (7.5YR 6/6), fine grained	
SS 11	2-3-5	18		35	**SILT (ML)** - Brownish yellow (10YR 6/8), damp, stiff, low plasticity, low toughness	
SS 12	1-3-5	18	178.3	40	SAA except yellow (10YR 7/6)	
SS 13	2-5-7	17		45	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/6), moist, medium dense, fine to medium grained, nonplastic	
SS	1-3-4	10			SAA except yellow (2.5Y 7/6), loose, very fine grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4018

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4018

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	5-6-11	18		55	SAA except pale yellow (2.5Y 7/4), medium dense, fine grained, contains iron staining	
			163.3			
SS 16	5-11-15	17		60	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/4), damp, medium dense, fine grained, nonplastic	
			158.3			
SS 17	6-9-11	18		65	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 7/4), moist, medium dense, fine grained, subrounded to subangular, nonplastic, contains iron staining	
SS 18	5-8-12	18		70	SAA	Water level depth at end of 2/26/07 = Ground surface
			148.3			
SS 19	5-7-12	17		75	**SAND, with silt (SP-SM)** - Pale yellow (5Y 8/3), wet, medium dense, very fine grained, nonplastic	Water level depth at beginning of 2/27/07 = 61.0 feet
SS 20	7-10-13	18		80	SAA except pale yellow (2.5Y 8/4)	
			138.3			
SS 21	50/5"	5		85	**GRAVEL, with clay (GP-GC)** - Pale yellow (2.5Y 8/2), wet, very dense, angular, contains shell hash, +HCL	Top of Utley Limestone at a depth of 82.0 feet
			133.8			Top of Blue Bluff Marl at a depth of 86.5 feet
SS 22	8-12-30	18		90	**CLAY (CL)** - Pale yellow (5Y 7/4) to greenish gray (GLEY1 5/10GY), moist, hard, low plasticity, low toughness, +HCL	
UD 1		27		95	SAA except greenish gray (GLEY1 5/10GY) Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher
UD 2		7		100	SAA Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher
UD 3		20		105	SAA Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4018**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4018

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 23		10-13-18	18		110		SAA except greenish gray (GLEY1 5/5GY)	
SS 24		11-16-50/3"	15		115		SAA	
SS 25		20-21-33	18		120		SAA	
SS 26		37-27-20	6		125		SAA except contains trace cemented shell fragments	Water level depth at end of 2/27/07 = Ground surface
UD 4			10		130		SAA except greenish gray (GLEY1 6/5GY), contains abundant cemented shell fragments Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Water level depth at beginning of 2/28/07 = Ground surface Pitcher
SS 27		9-20-22	18		135		SAA except greenish gray (GLEY1 5/5GY), no cemented shell fragments	
UD 5			21		140		SAA Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher
SS 28		11-21-21	18		145		SAA except greenish gray (GLEY1 6/5GY), no shell fragments	
SS 29		16-16-15	18		150		SAA except light olive gray (5Y 6/2), contains trace cemented shell fragments	
SS 30		17-20-15	18	64.8	155		SAA except no shell fragments	Top of Still Branch Formation at a depth of 155.5 feet
SS 31		10-19-34	18	60.3	160		**SAND, with clay (SP-SC)** - Olive gray (5Y 4/2), moist, very dense, very fine grained, nonplastic, -HCL Boring terminated at 160 feet	Water level depth at end of 2/28/07 = Ground surface

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4018**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4019

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Brooks	N 1142975.9 E 621371.4	2/22/2007	3/16/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	6 Inches	328848	160.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.8			
SS 1	2-4-6	15			**SAND, with silt (SP-SM)** - Brown (7.5YR 4/4), damp, loose to medium dense, fine grained, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	6-7-8	13			SAA except reddish yellow (7.5YR 6/8), medium dense	
SS 3	3-3-4	14			SAA except reddish yellow (7.5YR 6/6), loose, fine to medium grained	
			216.3	5		
SS 4	3-6-7	13			**SAND, with clay (SP-SC)** - Reddish yellow (7.5YR 6/8), damp, medium dense, fine grained, low plasticity	
SS 5	8-9-11	15			SAA	
				10		
SS 6	11-11-15	16			SAA except red (2.5YR 5/8)	
			208.8			
SS 7	11-13-14	17			**CLAY, silty, sandy (CL-ML)** - Yellowish red (5YR 5/8), damp, medium dense, low plasticity, fine to medium grained SAND	
				15		
			204.8			
SS 8	10-13-20	14			**CLAY, with sand (CL)** - Reddish yellow (7.5YR 6/8), damp, hard, medium plasticity, medium grained SAND	
				20		
			199.8			
SS 9	5-4-6	16			**SAND, with clay (SP-SC)** - Reddish yellow (7.5YR 6/8), damp, loose to medium dense, medium grained, low plasticity	
				25		
			194.8			
SS 10	4-6-8	14			**SAND, with silty clay (SP-SC)** - Yellow (10YR 7/6), damp, medium dense, fine grained, low plasticity	
				30		
			189.8			Loss of circulation at a depth of 31.0 feet
SS 11	4-6-8	13			**CLAY, silty (CL-ML)** - Brownish yellow (10YR 6/6), damp, stiff, medium plasticity	
				35		
			184.8			
SS 12	4-7-7	16			**SAND, silty, clayey (SC-SM)** - Yellowish brown (10YR 5/8), moist, medium dense, fine to medium grained, low plasticity, -HCL	
				40		
SS 13	3-4-4	17			SAA except brownish yellow (10YR 6/8), fine grained	
				45		
SS	3-3-3	14			SAA except yellow (10YR 7/8), damp, loose, medium grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4019

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4019

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			169.8			
SS 15	5-5-6	12		55	**SAND, with silt (SP-SM)** - Yellow (10YR 7/8), moist, medium dense, medium grained, nonplastic, -HCL	
SS 16	11-10-13	11	159.8	60	SAA	
SS 17	10-7-9	0	154.8	65	**NO RECOVERY**	
SS 18	3-3-4	18	149.8	70	**CLAY, silty (CL-ML)** - Pale yellow (2.5Y 8/2), damp, medium stiff, low plasticity, +HCL	Loss of circulation at a depth of 67.0 feet Water level depth at end of 2/22/07 = Ground surface
SS 19	8-11-28	8	144.8	75	**CLAY, silty, sandy with gravel (CL-ML)** - Pale yellow (2.5Y 8/2), moist, hard, low plasticity, medium grained SAND, contains shell hash, +HCL	
SS 20	50/1"	0	139.8	80	**NO RECOVERY**	Top of Utley Limestone at a depth of 77.0 feet
SS 21	50/4"	4	134.8	85	**GRAVEL, silty, clayey with sand (GC-GM)** - Pale yellow (2.5Y 7/2), moist, very dense, low plasticity, +HCL	
SS 22	30-50/5"	11	128.8	90	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 87.0 feet Water level depth at beginning of 3/15/07 = 41.0 feet End logging by D. Brooks. Begin logging by L. Davis. Installed 6" steel casing to a depth of 93.0 feet
SS 23	4-12-21	14	124.8	95	**CLAY (CL)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, +HCL	
SS 24	9-12-18	18		100	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/5GY), damp, hard, low plasticity, contains minor shell hash, +HCL	
SS 25	11-17-45	18	114.8	105	SAA except grayish green (GLEY2 5/5G)	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4019**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4019

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	50/4"	4	109.8	110	**CLAY (CL)** - Pale green (GLEY1 6/5G), moist, hard, nonplastic to medium plasticity, contains minor compacted shell hash, +HCL	
UD 1		8		115	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/10Y), damp, low plasticity, +HCL Pocket Penetrometer: >4.5 TSF	Pitcher
UD 1A					SAA	Pitcher
SS 27	11-23-43	18	99.8	120	SAA except greenish gray (GLEY1 6/5GY), hard contains minor shell hash and organics	
SS 28	12-20-28	18		125	**CLAY (CL)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, contains minor compacted shell hash, +HCL	
SS 29	10-12-23	18		130	SAA except contains no shell hash	
UD 2		2		135	SAA except light greenish gray (GLEY1 7/10Y), contains compacted zones Pocket Penetrometer: >4.5 TSF	Pitcher
UD 2A		24	83.8		SAA except moist Pocket Penetrometer: >4.5 TSF	Pitcher
SS 30	13-21-34	18	79.8	140	**SILT (ML)** - Light greenish gray (7/5 GY), damp, hard, low plasticity, +HCL	
SS 31	15-15-30	18		145	**CLAY (CL)** - Light greenish gray (GLEY1 7/10Y), damp, hard, low plasticity, +HCL	
SS 32	33-44-50/5"	17		150	SAA except medium plasticity	
SS 33	11-13-19	18	64.8	155	SAA except low plasticity, contains shell hash	
SS 34	21-33-34	18	61.8	160	**SAND, silty (SM)** - Dark greenish gray (GLEY1 4/10Y), moist, very dense, nonplastic, -HCL Boring terminated at 160 feet	Top of Still Branch Formation at a depth of 157.0 feet Water level depth at end of 3/15/07 = Top of casing

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4019**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-4020

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1142969.4 E 621280.0	2/14/2007	2/15/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Skogland-MACTEC	Dietrich D-50	3 Inches	100	89.4

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.8			
SS 1	10-11-18	15	221.8		**SAND, with silt and gravel (SP-SM)** - Dark reddish gray (2.5YR 4/1) and red (2.5YR 4/8), damp, medium dense, nonplastic, angular GRAVEL	Top of Fill at a depth of 0.0 feet
SS 2	13-14-16	17				Top of Barnwell Group at a depth of 1.0 feet
SS 3	12-12-12	16			**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), damp, dense, fine grained, nonplastic	
			217.3	5	SAA except dense	
SS 4	12-10-10	18			SAA except yellow (10YR 7/6), medium dense, very fine grained	
SS 5	9-10-10	15			**CLAY, with sand (CL)** - Red (2.5YR 5/6), damp, very stiff, low plasticity, very fine SAND, contains organics	
			212.3	10	SAA except red (2.5YR 4/8), moist, coarse grained SAND	
SS 6	10-11-17	18			**SAND, with clay (SP-SC)** - Red (2.5YR 4/8), moist, medium dense, very fine grained, nonplastic	
SS 7	10-11-12	18		15	SAA except contains yellow (2.5Y 7/6) CLAY lenses	
SS 8	5-5-8	18		20	SAA	
SS 9	5-5-9	17		25	SAA except yellow (2.5Y 7/6)	
			195.8			
SS 10	4-4-5	18		30	**CLAY (CL)** - Yellow (2.5Y 7/6), moist, stiff, low plasticity, low toughness, -HCL	
SS 11	4-4-7	16		35	SAA	
			185.8			
SS 12	2-5-4	18		40	**SILT (ML)** - Yellow (2.5Y 7/6), moist, stiff, low plasticity, low toughness	
SS 13	3-2-3	17		45	SAA except medium stiff	
			175.8			
SS	6-6-6	17			**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), moist, medium dense, fine grained,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4020

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-4020

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					nonplastic	
SS 15	6-7-8	15		55	SAA except light red (2.5YR 6/6), wet	Water level depth at end of 2/14/07 = Ground surface
SS 16	8-5-5	18	163.4	60	SAA except yellow (10YR 7/6), moist **CLAY, with sand (CL)** - Pale yellow (5Y 8/4), moist, stiff, low plasticity, -HCL	Water level depth at beginning of 2/15/07 = Borehole dry
			160.8			
SS 17	13-17-12	18		65	**CLAY (CL)** - Yellow (2.5Y 8/6), moist, very stiff, low plasticity, contains abundant shell hash, +HCL	
			155.8			
SS 18	16-16-22	18		70	**CLAY, with sand (CL)** - Pale yellow (2.5Y 8/3), moist, hard, low plasticity, contains shell hash, +HCL	
			150.8			Top of Utley Limestone at a depth of 72.0 feet
SS 19	50/4"	0		75	**NO RECOVERY**	
			145.8			
SS 20	26-50/5.5"	8		80	**CLAY, with gravel (CL)** - Pale yellow (2.5Y 8/3), moist, hard, low plasticity, angular cemented GRAVEL, gravel consists of shells, +HCL	Loss of circulation at a depth of 81.0 feet
SS 21	26-50/1"	4		85	SAA	
			135.8			Top of Blue Bluff Marl at a depth of 87.0 feet
SS 22	26-50/5"	11	133.4		**CLAY, with gravel (CL)** - Very dark greenish gray (GLEY1 3/5GY), moist, hard, low plasticity, angular cemented GRAVEL, +HCL Boring terminated at 89.42 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4020**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-4020A

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1142973.7 E 621280.3	2/16/2007	2/20/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Towe-MACTEC	CME-550	3 Inches	337153	165.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET (222.6)	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
						5, 10, 15, 20, 25, 30, 35, 40, 45		**SEE B-4020 FOR LITHOLOGY TO 90.0 FEET**	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4020A

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 4	HOLE NO. B-4020A

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
						55			
						60			
						65			
						70			
						75			
						80			
						85			
					132.6	90			Blue Bluff Marl
SS 1		▲	9-18-50/3"	15		95		**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/10GY), dry to damp, hard, low plasticity, contains trace phosphate grains and shell fragments, +HCL	
SS 2		▲	11-18-18	18		100		SAA	
SS 3		▲	21-17-33	18		105		SAA except greenish gray (GLEY1 5/10GY)	

SITE	Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-4020A

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-4020A

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 4	50/2"	2		110	SAA except greenish gray (GLEY1 5/5GY), dry	
SS 5	50/4"	4		115	SAA	Water level depth at end of 2/16/07 = Top of casing
SS 6	13-19-30	18		120	SAA	Water level depth at beginning of 2/19/07 = 52.0 feet
SS 7	50/2"	2		125	SAA except contains abundant shell fragments and phosphate grains	
SS 8	12-19-41	18		130	SAA except trace shell fragments	
SS 9	50/4"	3.5		135	SAA	Water level depth at end of 2/19/07 = Top of casing
SS 10	8-11-13	18		140	SAA except greenish gray (GLEY1 6/10Y), dry to damp, very stiff	Water level depth at beginning of 2/20/07 = 54.0 feet
SS 11	13-33-23	18		145	SAA except hard	
SS 12	5-8-28	18		150	SAA	
SS 13	5-7-13	18		155	SAA except greenish gray (GLEY1 6/5GY)	
SS 14	7-11-9	18	62.1	160	SAA except contains abundant shell fragments	Top of Still Branch Formation at a depth of 160.5 feet
SS	8-16-33	18			SAND, clayey (SC) - Very dark greenish gray	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4020A**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-4020A

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
15	☒				57.6	165		(GLEY1 3/5G), dry to damp, dense, low plasticity, contains trace shell fragments and phosphate grains, -HCL Boring terminated at 165 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4020A**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4021

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Brooks	N 1143092.6 E 621247.4	1/9/2007	1/11/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	200587	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
224.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			224.6			Top of Barnwell Group at a depth of 0.0 feet
SS 1	4-6-11	15			**SAND, with silt (SP-SM)** - Reddish brown (5YR 4/4), damp, medium dense, fine grained, -HCL	
SS 2	1-12-19	12	221.3		SAA except yellowish red (5YR 5/8), dense, nonplastic	
SS 3	7-10-9	13	219.1	5	**SAND (SP)** - Reddish yellow (7.5YR 6/8), damp, medium dense, fine grained, nonplastic, -HCL	
SS 4	8-11-19	16			**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), damp, dense, fine grained, low plasticity, -HCL	
SS 5	6-9-13	16	214.1	10	SAA except red (2.5YR 4/8), medium dense	
SS 6	7-19-18	15			**SAND (SP)** - Red (2.5YR 5/8), damp, dense, fine to medium grained, nonplastic, -HCL	
SS 7	9-13-16	13	207.6	15	SAA except reddish yellow (7.5YR 6/8), medium dense, medium grained	
SS 8	4-6-8	15		20	**SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/8), damp, medium dense, fine to medium grained, nonplastic, -HCL	
SS 9	3-7-10	13	197.6	25	SAA except reddish yellow (7.5YR 6/8), fine grained	
SS 10	3-4-6	16	192.6	30	**SAND, with clay (SP-SC)** - Reddish yellow (7.5YR 6/8), damp, medium dense, fine grained, low plasticity, -HCL	
SS 11	3-4-5	18	187.6	35	**CLAY, with sand (CL)** - Brownish yellow (10YR 6/8), damp, stiff, low plasticity, fine grained SAND, -HCL	
SS 12	3-4-7	17		40	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), damp, medium dense, fine grained, nonplastic, -HCL	
SS 13	2-3-5	16	177.6	45	SAA except low plasticity	
SS	3-6-8	14			**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), damp, medium dense, fine grained,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4021

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4021

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			172.6		low plasticity, -HCL	
SS 15	3-6-7	13	167.6	55	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/4), damp, medium dense, fine to medium grained, low plasticity, -HCL	
SS 16	4-6-9	12	162.8	60	**SAND (SP)** - Pale yellow (2.5Y 7/4), damp, medium dense, fine to medium grained, nonplastic, -HCL	
SS 17	5-5-12	14		65	**SAND, with clay (SP-SC)** - White (2.5Y 8/1), damp, medium dense, medium grained, low plasticity, contains abundant shell fragments, +HCL	
SS 18	26-28-43	14	152.6	70	SAA except very dense, fine grained	Top of Utley Limestone at a depth of 72.0 feet
SS 19	50/1"	0	147.6	75	**NO RECOVERY**	
SS 20	2-3-14	15	142.6	80	**CLAY, sandy (CL)** - White (2.5Y 8/1), damp, very stiff, low plasticity, fine grained SAND, contains abundant shell fragments, +HCL	Loss of circulation at a depth of 80.0 feet
SS 21	9-1-50/2"	6	138.1	85	**SAND (SP)** - White (2.5Y 8/1), damp, very dense, nonplastic, contains abundant shell fragments, +HCL	Installed 3" steel casing to a depth of 85.0 feet. Top of Blue Bluff Marl at a depth of 86.5 feet
SS 22	34-50/3"	9		90	**SILT (ML)** - Greenish gray (GLEY2 5/1), damp, hard, nonplastic, +HCL	Water level depth at beginning of 1/11/07 = 63.33 feet
SS 23	8-15-21	18		95	SAA	
SS 24	12-19-30	18		100	SAA	
SS 25	11-17-20	18	117.6	105	SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4021**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4021

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		50/2"	0		110		**NO RECOVERY**	
				112.6				
SS 27		10-21-26	18		115		**SILT (ML)** - Greenish gray (GLEY2 5/1), damp, hard, nonplastic, +HCL	
SS 28		13-21-27	18		120		SAA	
				102.6				
SS 29		50/2"	0		125		**NO RECOVERY**	
				97.6				
SS 30		24-50/3"	9		130		SAA except low plasticity	
SS 31		24-50/5"	11		135		SAA	
SS 32		15-34-36	18		140		SAA	
SS 33		15-20-23	18		145		SAA	
				77.6				
SS 34		14-14-21	18	74.6	150		**CLAY, silty (CL-ML)** - Greenish gray (GLEY2 5/1), damp, hard, low plasticity, +HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4021**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4022

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1143081.3 E 621073.5	1/7/2007	1/9/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	148.7

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.7			
SS 1	2-1-2	16			**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), damp, very loose, fine grained, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
SS 2	3-3-3	18			SAA except reddish yellow (7.5YR 6/8), loose	
SS 3	2-4-7	17	215.2	5	SAA except medium dense, fine to medium grained	
SS 4	14-17-19	12	212.7		**SAND, clayey (SC)** - Red (2.5YR 4/8), damp, dense, fine grained, nonplastic	
SS 5	14-19-21	13	210.2	10	**SAND, with silt (SP-SM)** - Red (2.5YR 5/8), damp, dense, fine grained, nonplastic	
SS 6	9-12-17	16			**SAND, clayey (SC)** - Red (2.5YR 4/8), damp, medium dense, fine grained, nonplastic	
SS 7	9-15-14	10		15	SAA except red (2.5YR 5/8)	
			203.7			
SS 8	6-7-9	12		20	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), damp, medium dense, medium grained, nonplastic	
			198.7			
SS 9	5-6-5	10		25	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), damp, medium dense, fine grained, nonplastic	
			193.7			
SS 10	3-2-4	18		30	**CLAY, sandy (CL)** - Yellow (2.5Y 7/6), moist, medium stiff, low plasticity, fine grained SAND	
			188.7			
SS 11	2-3-3	18		35	**CLAY, with sand (CH)** - Yellow (2.5Y 7/6), moist, medium stiff, high plasticity, fine grained SAND	
SS 12	2-3-3	18		40	SAA except very pale brown (10YR 7/4), medium plasticity, -HCL	
			178.7			
SS 13	3-4-5	15		45	**SAND, clayey (SC)** - Yellow (10YR 7/6), moist, loose, fine grained, medium plasticity	
			173.7			
SS	5-6-5	13			**SAND, with silt (SP-SM)** - Pale brown (10YR 6/3), wet, medium dense, medium grained,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4022

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4022

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						nonplastic, -HCL	
				168.7			
SS 15		6-6-5	11		55	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/6), wet, medium dense, medium grained, nonplastic, -HCL	Loss of circulation at a depth of 56.0 feet
SS 16		4-5-7	14		60	SAA except yellow (10YR 7/6), fine to medium grained, low plasticity	
SS 17		5-5-4	13		65	SAA except loose, medium to coarse grained, nonplastic	
				153.7			Loss of circulation at a depth of 66.0 feet
SS 18		3-2-2	18		70	**CLAY, with sand (CL)** - Pale yellow (5Y 7/4), wet, soft, medium plasticity, fine grained SAND, -HCL	Water level depth at end of 1/7/07 = 25.0 feet
				148.7			Water level depth at beginning of 1/8/07 = Borehole dry
SS 19		5-7-10	14		75	**SAND, with silt (SP-SM)** - Brown (7.5YR 5/4), wet, medium dense, fine to medium grained, -HCL	Boring caved to 25.0 feet Installed casing to a depth of 38.0 feet
				143.7			Casing advanced to a depth of 45.0 feet
SS 20		3-4-3	14		80	**SAND (SP)** - Very pale brown (10YR 7/4), wet, loose, fine to medium grained, -HCL	Casing advanced to a depth of 55.0 feet
				139.2			Top of Utley Limestone at a depth of 81.5 feet
SS 21		WOH/12"-50/1"13			85	**CLAY, silty (CL-ML)** - Dark yellowish brown (10YR 3/4), wet, very soft, low plasticity, contains shell fragments, +HCL	Water level depth at end of 1/8/07 = 48.0 feet
				133.2			Top of Blue Bluff Marl at a depth of 87.5 feet
SS 22		21-26-32	18		90	**SILT (ML)** - Greenish gray (GLEY1 6/5G), wet, hard, nonplastic, contains cementation, +HCL	Water level depth at beginning of 1/9/07 = 52.0 feet
				128.7			
SS 23		13-15-17	18		95	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/10GY), wet, hard, low plasticity, +HCL	
SS 24		21-17-25	18		100	SAA except greenish gray (GLEY1 5/5GY), medium plasticity, contains shell fragments	
SS 25		14-16-19	18		105	SAA except greenish gray (GLEY1 5/10Y)	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4022**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4022

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	12-15-50/1"	13		110		SAA except high plasticity, contains no shell fragments	
SS 27	☒	25-26-30	18		115		SAA except low plasticity, contains trace shell fragments	
SS 28	☒	39-50/1"	7		120		SAA except contains no shell fragments	
				98.7				
SS 29	☒	7-10-14	18		125		**CLAY (CH)** - Greenish gray (GLEY1 6/10Y), wet, very stiff, high plasticity, +HCL	
SS 30	☒	12-19-50/2"	14		130		SAA except hard, contains cementation	
				88.7				
SS 31	☒	42-50/4"	10		135		**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 7/10GY), wet, hard, low plasticity, +HCL	
SS 32	☒	10-12-22			140		SAA except greenish gray (GLEY1 6/10Y), low to medium plasticity	
SS 33	☒	15-19-31	18		145		SAA except greenish gray (GLEY1 5/10Y), medium to high plasticity	
SS 34	☒	50/2"	2	72.1			SAA except light greenish gray (GLEY1 7/5GY), medium plasticity Boring terminated at 148.66 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4022**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4023

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1143062.4 E 620879.8	1/10/2007	1/12/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.7			
SS 1	5-11-9	12	219.2		**GRAVEL, with sand (GP)** - Dark greenish gray (GLEY1 4/10Y), damp, medium dense, fine to medium grained SAND	Top of Fill at a depth of 0.0 feet
SS 2	7-9-9	18			**SAND, clayey (SC)** - Red (2.5YR 4/6), damp, medium dense, fine grained, low plasticity SAA except red (10R 4/6), nonplastic	
SS 3	9-10-9	10	215.2	5		
SS 4	6-10-14	10	212.7		**GRAVEL (GP)** - Medium dense	
SS 5	14-15-15	12	210.2	10	**SAND, with silt (SP-SM)** - Red (10R 4/8), damp, medium dense, fine grained	Top of Barnwell Group at a depth of 8.0 feet
SS 6	6-8-9	4	207.7		**SAND, clayey (SC)** - Red (2.5YR 5/8), moist, medium dense, fine grained, nonplastic	
SS 7	5-10-10	10	203.7	15	**SAND, with silt (SP-SM)** - Strong brown (7.5YR 5/6), moist, medium dense, fine grained, contains strong brown (7.5YR 5/6) CLAY lenses	
SS 8	4-6-7	12		20	***SAND, clayey (SC)** - Reddish yellow (7.5YR 7/8), moist, medium dense, fine grained, nonplastic	
SS 9	4-7-7	8		25	SAA except brownish yellow (10YR 6/8)	
SS 10	4-4-6	10	193.7	30	**CLAY, silty (CL-ML)** - Brownish yellow (10YR 6/8), moist, stiff, high plasticity	
SS 11	4-6-6	12	188.7	35	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), damp, medium dense, fine to medium grained, nonplastic, contains CLAY lenses	
SS 12	10-11-12	12	184.7	40	**SILT (ML)** - Light greenish gray (GLEY1 7/1), moist, very stiff, nonplastic, contains shell hash, +HCL	
SS 13	7-9-11		178.7	45	**SAND, with silty clay (SP-SC)** - Light greenish gray (GLEY1 7/10Y), wet, medium dense, fine grained, low to medium plasticity, contains trace shell fragments, +HCL	
SS	11-14-18	14	173.7		**SILT, with sand (ML)** - Light greenish gray (GLEY1 8/10Y), wet, hard, nonplastic, contains	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4023

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4023

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					shell fragments, +HCL	Water level depth at end of 1/10/07 = Top of casing
			168.7			
SS 15	10-12-14	15		55	**SAND, with silt (SP-SM)** - Pale yellow (5Y 8/4), wet, medium dense, contains shell fragments, +HCL	Water level depth at beginning of 1/11/07 = 46.0 feet
			163.7			
SS 16	10-22-25	14		60	**SILT, with sand (ML)** - Pale yellow (5Y 8/2), wet, hard, nonplastic, fine grained SAND, contains shell fragments, +HCL	
SS 17	50/4"	4		65	SAA except very fine grained SAND	
			153.7			
SS 18	15-19-20	17		70	**SAND, with clay (SP-SC)** - Pale yellow (5Y 8/3), wet, dense, fine grained, contains shell fragments, +HCL	
			148.7			
SS 19	16-20-21	15		75	**SAND (SP)** - Pale yellow (5Y 8/4), wet, dense, medium grained, -HCL	
SS 20	9-6-1	8		80	SAA except pale yellow (2.5Y 7/3), loose, fine grained	
			138.7			
SS 21	20-4-7	6		85	**SAND, with clay (SP-SC)** - Pale yellow (5Y 8/3), wet, medium dense, fine to medium grained, contains shell fragments, +HCL	Loss of circulation at a depth of 88.0 feet
			132.4			
SS 22	9-19-29	18		90	**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/10Y), wet, hard, medium plasticity, +HCL	Top of Blue Bluff Marl at a depth of 88.3 feet
SS 23	15-39-50/4"	16		95	SAA	
SS 24	11-15-26	18		100	SAA except low to medium plasticity, contains trace shell fragments	
SS 25	22-50/2"	6		105	SAA except greenish gray (GLEY1 5/10GY), medium plasticity	Water level depth at beginning of 1/12/07 = 54.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4023**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4023

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	11-11-26	18		110	SAA except greenish gray (GLEY1 5/5G), medium to high plasticity	
SS 27	37-17-27	18		115	SAA except greenish gray (GLEY1 5/5GY), medium plasticity, contains cementation and no shell fragments	
SS 28	20-26-32	18		120	SAA except greenish gray (GLEY1 6/5GY), high plasticity, contains trace shell fragments and no cementation	
SS 29	15-19-27	15		125	SAA	
			93.7			
SS 30	42-50/5"	11		130	**CLAY (CH)** - Greenish gray (GLEY1 6/10Y), wet, hard, high plasticity, +HCL	
SS 31	17-18-31	18		135	SAA except greenish gray (GLEY1 6/5GY)	
			83.7			
SS 32	20-22-26	13		140	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/5GY), wet, hard, low plasticity, +HCL	
SS 33	12-20-36	16		145	SAA except greenish gray (GLEY1 5/10Y), medium plasticity	
SS 34	13-15-15		70.7	150	SAA except light greenish gray (GLEY1 7/10Y), very stiff, medium to high plasticity Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	B-4023

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4024

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1142904.8 E 620601.8	1/15/2007	1/17/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
223.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			223.8			
SS 1	5-7-8	18	223.8		**SAND, silty, clayey (SC-SM)** - Red (2.5 YR 4/8), damp, medium dense	Top of Fill at a depth of 0.0 feet
SS 2	6-9-9	18			**GRAVEL, with silt and sand (GP-GM)** - Very dark gray (GLEY 1 3/N), damp, medium dense	Top of Barnwell Group at a depth of 1.0 feet
SS 3	6-7-7	12			**SAND, silty (SM)** - Yellow (10YR 7/8), damp, medium dense, fine grained	
				5	SAA except strong brown (7.5 YR 5/8), dry	
SS 4	1-1-2	12			SAA except damp SAA except yellow (10YR 7/6), very loose	
SS 5	1-2-6	18			SAA except yellowish red (5YR 4/6), loose	
				10		
			212.8			
SS 6	1-3-4	0			**NO RECOVERY**	
			210.8			
SS 7	8-9-9	18			**SAND, silty (SM)** - Yellowish red (5YR 4/6), damp, medium dense, fine grained	
				15		
			206.8			
SS 8	5-8-11	17			**SAND, silty, clayey (SC-SM)** - Red (2.5YR 5/8), damp, medium dense, fine to coarse grained	
				20		
			201.8			
SS 9	8-11-10	16			**SAND, silty (SM)** - Light yellowish brown (10YR 6/4), damp, medium dense, fine to coarse grained	
				25		
			196.8			
SS 10	2-4-6	18			**CLAY (CH)** - Yellow (2.5Y 7/6), damp, stiff, high plasticity, contains thin sands seams of less than .25", -HCL	
				30		
			191.8			
SS 11	4-4-4	18			**CLAY, sandy (CH)** - Yellow (2.5Y 7/6), damp, stiff, high plasticity, contains thin sands seams of less than .25", -HCL	
				35		
SS 12	2-4-5	18			SAA	
				40		
			181.8			
SS 13	2-4-5	18			**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/6) damp, loose, fine grained, contains white shell fragments, +HCL	
				45		
SS	5-7-8	16			SAA except yellow (2.5Y 7/6), medium dense, fine to medium grained, -HCL, no shell	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4024

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4024

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14				171.8			fragments	
SS 15		6-6-5	15		55		**SAND, silty (SM)** - Yellowish brown (10YR 5/6), damp, medium dense, fine to coarse grained	
SS 16		8-9-10	16		60		SAA except fine to medium grained	
SS 17		5-9-10	17	156.8	65		SAA except olive yellow (2.5Y 6/6)	Water level depth at end of 1/15/07 = Ground surface
SS 18		7-13-11	0	151.8	70		**NO RECOVERY**	Water level depth at beginning of 1/16/07 = 5.0 feet
SS 19		8-7-16	18	149.8	75		**SAND, silty, clayey (SC-SM)** - Dark grayish brown (2.5Y 4/2) damp, loose, fine to medium grained, -HCL **SAND, silty (SM)** - Light yellowish brown (2.5Y 6/3), moist, medium dense, fine to medium grained, -HCL	
SS 20		50/2"	2	145.8	80		**CLAY, sandy (CL)** - Pale yellow (5Y 8/4), damp, hard, low plasticity, +HCL	Top of Utley Limestone Formation at a depth of 78.0 feet. Loss of circulation.
SS 21		11-11-45	16	141.8	85		**SAND, clayey (SC)** - Pale yellow (2.5Y 8/2), damp, very dense, fine to medium grained, contains some shell fragments and cemented areas, +HCL	
SS 22		27-50/3"	9	136.8	90		**SAND, with silty clay (SP-SC)** - Pale yellow (2.5Y 8/2), moist, very dense, fine to coarse grained, +HCL	Water level depth at beginning of 1/17/07 = 5.0 feet
SS 23		23-39-46	18	132.8	95		**CLAY (CH)** - Greenish gray (GLEY 1 5/5GY), damp, hard, high plasticity, +HCL	Top of Blue Bluff Marl at a depth of 91.0 feet Installed casing to a depth of 91.5 feet
SS 24		15-16-19	18		100		SAA	
SS 25		19-19-26	18	116.8	105		SAA except contains white shell fragments	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4024**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4024

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	50/5"	5		110	**CLAY, with sand (CH)** Greenish gray (GLEY 1 5/5GY), dry, hard, high plasticity, contains white shell fragments, +HCL	
SS 27	50/1"	1		115	SAA except no shell fragments	
SS 28	19-22-21	18		120	SAA except contains some cemented areas	
SS 29	23-50/6"	12		125	SAA except light greenish gray (GLEY 1 7/10Y), damp, contains white shell fragments	
SS 30	50/5"	5		130	SAA	
			91.8			
SS 31	48-22-50/3"	15		135	**CLAY, with sand (CL)** - Greenish gray (GLEY 1 6/10Y), damp, hard, low plasticity, +HCL	
			86.8			
SS 32	33-23-37	18		140	**CLAY, with sand (CH)** - Greenish gray (GLEY 1 6/10Y), damp, hard, high plasticity, +HCL	
SS 33	19-23-35	18		145	SAA	
SS 34	8-8-22	18	73.8	150	SAA	
					Boring terminated at 150.0 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4024**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4025

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1142510.0 E 620625.0	2/3/2007	2/4/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.8			
SS 1	5-10-11	18	219.8		**GRAVEL**	Top of Fill at a depth of 0.0 feet
SS 2	7-10-12	18	217.6		**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), dry, medium dense, fine grained SAA	Top of Barnwell Group at a depth of 1.0 feet
SS 3	6-9-12	0	215.3	5	**NO RECOVERY**	
SS 4	8-9-10	10			**SAND, clayey (SC)** - Red (2.5YR 5/8) and reddish yellow (7.5YR 6/6), damp, medium dense	
SS 5	3-6-5	5	210.3	10	SAA	
SS 6	16-12-17	11	207.8		**SAND, silty (SM)** - Yellowish red (5YR 5/8), dry, medium dense	
SS 7	8-10-13	0	203.8	15	**NO RECOVERY**	
SS 8	7-10-9	8	198.8	20	**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), dry, medium dense	Installed 3" steel casing to a depth of 17.0 feet
SS 9	3-4-5	10		25	**SAND, clayey (SC)** - Reddish yellow (7.5YR 6/8), damp, loose, contains CLAY lenses	
SS 10	3-4-6	18		30	SAA except pale yellow (5Y 7/3), dry	
SS 11	2-2-3	18		35	SAA except fine grained	
SS 12	1-2-3	18		40	SAA except -HCL	
SS 13	8-7-10	16		45	SAA except pale yellow (5Y 8/2), medium dense, contains shell fragments, +HCL	
SS	3-3-9	14			SAA except contains SILT lenses	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4025

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4025

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			168.8			
SS 15	4-6-7	14		55	**SAND, silty (SM)** - White (5Y 8/1), damp, medium dense, +HCL	
			163.8			
SS 16	5-6-7	15		60	**SAND, clayey (SC)** - White (5Y 8/1), damp, medium dense, fine grained, +HCL	
			158.8			Loss of circulation at a depth of 62.0 feet
SS 17	8-8-6	9		65	**GRAVEL, silty (GM)** - White (5Y 8/1), dry, medium dense, contains shell hash, +HCL	
			153.8			
SS 18	2-2-5	2		70	**CLAY, with gravel (CL)** - Pale yellow (5Y 8/2), damp, medium stiff, +HCL	
			148.8			
SS 19	WOR/18"	18		75	**CLAY (CL)** - Pale yellow (5Y 8/2), very soft, contains SAND lenses	
			143.8			
SS 20	7-8-9	14		80	**SAND, with silt (SP-SM)** - White (5Y 8/1), wet, medium dense, -HCL	
SS 21	6-50/2"	8		85	SAA except white (5Y 8/1) to pale red (10R 7/2), very dense	
			133.8			Top of Utley Limestone at a depth of 87.0 feet
SS 22	50/1"	1		90	**GRAVEL, clayey (GC)** - Pale yellow (5Y 8/2), wet, very dense, +HCL	
			129.1			Top of Blue Bluff Marl at a depth of 91.75 feet
SS 23	7-13-16	18		95	**CLAY (CL)** - Greenish gray (GLEY1 5/1/10Y), damp, very stiff	
SS 24	50/1"	1		100	SAA except hard	Water level depth at end of 2/3/07 = Ground surface
SS 25		1		105	SAA	Water level depth at beginning of 2/4/07 = 56.2 feet
			113.8			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4025**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 3 OF 3	HOLE NO. B-4025

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		50/1"	0		110		**NO RECOVERY**	
				108.8				
SS 27		50/1"	1		115		SAA	
SS 28		50/1"	1		120		SAA	
				98.8				
SS 29		50/1"	0		125		**NO RECOVERY**	
				93.8				
SS 30		50/1"	1		130		SAA	
SS 31		11-11-15	18		135		SAA	
SS 32		17-26-27	15		140		SAA	
				79.8				
SS 33		17-24-39	0		145		**NO RECOVERY**	
				73.8				
SS 34		25-35-50/6"	18	70.8	150		**CLAY (CL)** - Greenish gray (GLEY1 6/1/10Y), damp, hard, medium plasticity, +HCL Boring terminated at 150 feet	Water level depth at end of 2/4/07 = Ground surface

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-4025

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4026

LOGGED BY	COORDINATES	BEGUN	COMPLETED
C. Bruce	N 1142330.2 E 620597.7	2/5/2007	2/6/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.5			
SS 1	3-5-7	18			*SAND, with silt and gravel (SP-SM) - Yellowish red (5YR 6/4), moist, medium dense, fine to medium grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	5-9-7	15			SAA except dry	
SS 3	7-10-12	14		5	SAA	
SS 4	14-16-21	15			SAA except strong brown (7.5YR 4/6), wet, dense	
SS 5	17-21-31	18	211.0	10	SAA except strong brown (7.5YR 4/6) to dark red (2.5YR 3/6), very dense	
SS 6	10-10-8	18	208.5		**SAND, with gravel (SP)** - Strong brown (7.5YR 4/6), moist to wet, medium dense, medium to coarse grained, angular GRAVEL	
SS 7	6-8-11	18		15	**SAND, silty, clayey (SC-SM)** - Dark red (10R 3/6), wet, medium dense, fine to medium grained	
			204.5			
SS 8	8-8-12	12		20	**CLAY, sandy (CL)** - Red (10R 4/6) to yellowish brown (10YR 5/6), moiust, medium dense, fine to medium grained SAND	
			199.5			Installed 3.5" steel casing to a depth of 22.0 feet
SS 9	8-12-8	15		25	**SAND, with clay and gravel (SP-SC)** - Red (2.5YR 4/8), moist, medium dense, fine to coarse grained, rounded GRAVEL	
			194.5			
SS 10	8-12-10	12		30	**SAND, silty (SM)** - Brownish yellow (10YR 6/6), wet, medium dense, fine to coarse grained	
SS 11	7-8-12	15		35	SAA except yellow (10YR 7/6)	
			184.5			
SS 12	4-5-7	12		40	**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/6), wet, medium dense, fine to medium grained	
SS 13	3-5-10	15		45	SAA	
SS	2-3-5	17			SAA except moist, loose, fine grained, contains CLAY lenses	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4026

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4026

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	4-4-8	15		55	SAA except wet, medium dense, contains no CLAY lenses	
SS 16	4-4-5	15		60	SAA except very pale brown (10YR 7/3), moist, loose	
			159.5			
SS 17	2-2-3	15		65	**SAND, silty (SM)** - Yellow (2.5Y 7/6), moist, loose, fine grained, -HCL	
			154.5			Loss of circulation at a depth of 67.0 feet
SS 18	1-1-3	18		70	**SAND, silty, clayey (SC-SM)** - Yellow (2.5Y 7/6), wet, very loose, fine to coarse grained, contains trace shell fragments, -HCL	
			149.5			
SS 19	3-3-5	18		75	**SAND, silty (SM)** - Yellow (2.5Y 7/6), wet, loose, fine to medium grained, -HCL	
SS 20	3-3-5	17		80	SAA except very pale brown (10YR 7/3)	
SS 21	3-4-3	14			SAA	
			136.5	85		Top of Utley Limestone at a depth of 85.0 feet
SS 22	50/1"	1		90	**CLAY, sandy, with gravel (CL)** - Very pale brown (10YR 8/3), wet, very dense, contains shell hash, +HCL	
			130.5			
SS 23	50/1"	1		95	**GRAVEL, clayey with sand (GC)** - Very pale brown (10YR 7/3), moist, very dense, contains shell hash, +HCL	
			124.5			Top of Blue Bluff Marl at a depth of 97.0 feet
SS 24	18-28-48	18		100	**SILT (ML)** - Dark greenish gray (GLEY1 4/10Y), dry, hard, +HCL	
SS 25	13-11-17	18		105	SAA except moist, very stiff, low plasticity	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4026**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4026

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	11-15-19	18		110	SAA	
SS 27	11-50/1"	7		115	SAA except very dark greenish gray (GLEY1 3/5G), hard	
SS 28	38-50/1"	7		120	SAA	
SS 29	11-15-28	18		125	SAA	
SS 30	20-18-43	18		130	SAA	
SS 31	27-35-42	18		135	SAA except medium plasticity	
			84.5			
SS 32	39-50/5"	11		140	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), moist, hard, +HCL	
			79.5			
SS 33	18-11-28	18		145	**SILT (ML)** - Greenish gray (GLEY1 5/5GY), moist, hard, medium plasticity, +HCL	
SS 34	31-32-50/6"				SAA except low plasticity	
			71.5	150	Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4026**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4027

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Brooks	N 1142180.1 E 620633.5	2/14/2007	2/15/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	4 Inches	328848	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
217.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT (1st 6" 2nd 6" 3rd 6")	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			217.7			
SS 1	5-3-2	10			**SAND, with silt (SP-SM)** - Strong brown (7.5YR 5/8), damp, loose, medium grained, nonplastic	Top of Barnwell Group at a depth of 0.0 feet
			216.2			
SS 2	3-4-4	11			**SAND, with silty clay (SP-SC)** - Reddish yellow (7.5YR 6/8), damp, loose, fine to medium grained, low plasticity	Begin drilling with 2 7/8" drill bit
SS 3	2-5-4	8		5	SAA	
SS 4	6-9-12	14			SAA except yellowish red (5YR 4/6), medium dense	
SS 5	8-9-10	15		10	SAA	
SS 6	4-6-6	13			SAA	
			204.7			
SS 7	6-7-8	15		15	**SAND, with clay (SP-SC)** - Strong brown (7.5YR 5/8), damp, medium dense, medium to coarse grained, low plasticity	
			200.7			
SS 8	7-8-8	11		20	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), damp, medium dense, coarse grained, nonplastic	
			195.7			
SS 9	6-7-7	13		25	**SAND, with silty clay (SP-SC)** - Yellowish brown (10YR 5/8), damp, medium dense, low plasticity	Changed to a 3 7/8" drill bit
			190.7			
SS 10	5-6-8	18		30	**CLAY, silty, sandy (CL-ML)** - Brownish yellow (10YR 6/8), damp, stiff, low plasticity, fine grained SAND	
			185.7			
SS 11	5-5-5	14		35	**CLAY, silty with sand (CL-ML)** - Yellowish brown (10YR 5/8), damp, stiff, low plasticity, medium grained SAND	
			180.7			
SS 12	4-4-5	0		40	**NO RECOVERY**	
			175.7			
SS 13	4-3-3	14		45	SAA except medium stiff, fine grained SAND, -HCL	
SS	1-3-6	16			SAA except pale yellow (2.5Y 7/4), stiff, +HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4027

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4027

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			165.7			
SS 15	15-15-14	15		55	**GRAVEL, silty, clayey with sand (GC-GM)** - Very pale brown (10YR 8/2), damp, medium dense, nonplastic, +HCL	
SS 16	13-14-13	16		60	SAA	Loss of circulation at a depth of 60.0 feet
SS 17	9-7-9	14	150.7	65	SAA	
SS 18	6-3-5	18	145.7	70	**CLAY, silty (CL-ML)** - White (10YR 8/1), damp, medium stiff to stiff, medium plasticity, +HCL	Water level depth at end of 2/14/07= Ground surface Top of Utley Limestone at a depth of 72.0 feet
SS 19	50/5"	0	140.7	75	**NO RECOVERY**	Water level depth at beginning of 2/15/07= Borehole dry End logging by D. Brooks. Begin logging by S. Woodham.
SS 20	50/3"	3	135.7	80	**GRAVEL, with clay and sand (GP-GC)** - Pale yellow (5Y 8/4), moist, very dense, contains shell fragments, +HCL	
SS 21	4-5-8	18	130.7	85	**CLAY (CL)** - Pale olive (5Y 6/3), damp, stiff, low to medium plasticity, -HCL	
SS 22	11-14-14	18		90	**CLAY (CL)** - Greenish grey (GLEY1 5/5GY), damp, very stiff, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 87.0 feet Installed 4" steel casing to a depth of 90.0 feet
SS 23	27-50/3"	9		95	SAA except hard, contains cementation	
SS 24	1-24-50/2"	14	115.7	100	SAA except contains shell fragments	
SS 25	11-50/3"	0	110.7	105	**NO RECOVERY**	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4027**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4027

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)
SS 26	50/4"	4		110	**CLAY, sandy (CL)** - Greenish gray (GLEY1 5/5G), damp, hard, low plasticity, contains shell fragments, +HCL
SS 27	14-19-24	18		115	SAA
SS 28	50/3"	3		120	SAA except contains cementation
			95.7		
SS 29	7-11-14	18		125	**CLAY, with sand (CL)** - Greenish gray (GLEY1 6/10Y), damp, very stiff, low plasticity, +HCL
SS 30	50/6"	6		130	SAA
SS 31	36-39-48	15		135	SAA
			80.7		
SS 32	11-17-21	18		140	**CLAY (CL)** - Light greenish gray (GLEY1 7/5GY), damp, hard, low plasticity, +HCL
SS 33	17-18-20	8		145	SAA
SS 34	9-10-14	18		150	SAA
			67.7		Boring terminated at 150 feet

NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4027**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4028

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1141984.2 E 620587.8	2/6/2007	2/7/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Melvin-MACTEC	CME-55	3 Inches	219505	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.6			
SS 1	14-10-7	15	218.1		**SAND, with silty clay (SP-SC)** - Red (10YR 4/6), dmap, medium dense, fine grained, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	10-12-29	18			**SAND, with silt (SP-SM)** - Light red (10R 7/8), damp, dense, fine grained, nonplastic, +HCL	
SS 3	9-17-18	13	214.1	5	SAA except pale yellow (2.5Y 8/2)	
SS 4	13-14-20	14	211.6		**SAND, silty (SM)** - Red (2.5YR 5/6), damp, dense, fine grained, nonplastic, -HCL	
SS 5	9-13-15	14		10	**SAND, with silty clay (SP-SC)** - Red (10R 5/6), damp, medium dense, fine grained, low plasticity, -HCL	
SS 6	9-14-22	16			SAA except red (10R 4/6)	
SS 7	11-13-16	16		15	SAA except red (10R 5/6)	
			202.6			
SS 8	11-9-10	15		20	**SAND, silty (SM)** - Red (2.5YR 5/6), damp, medium dense, fine grained, nonplastic, -HCL	
			197.6			
SS 9	10-14-17	16		25	**SAND, silty, clayey (SC-SM)** - Reddish yellow (5YR 6/6), damp, dense, fine grained, nonplastic, -HCL	
SS 10	8-8-12	18		30	SAA except reddish yellow (5YR 7/8), medium dense, low plasticity	
			187.6			
SS 11	7-6-8	15		35	**SAND, with silty clay (SP-SC)** - Reddish yellow (5YR 7/6), damp, medium dense, low plasticity, -HCL	
SS 12	7-7-11	18		40	SAA except reddish yellow (5YR 7/8)	
			177.6			
SS 13	10-11-12	8		45	**SAND, with silt (SP-SM)** - Reddish yellow (5YR 7/8), moist, medium dense, medium grained, nonplastic, -HCL	
			172.6			
SS	6-7-14	15			**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/6), moist, medium dense, fine grained, low	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4028

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4028

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					plasticity, -HCL	
SS 15	10-10-13	17		55	SAA except yellow (10YR 7/8)	
			162.6			
SS 16	5-8-3	14		60	**SAND, with silty clay (SP-SC)** - Very pale brown (10YR 7/4), moist, medium dense, nonplastic, -HCL	
SS 17	6-8-5	16		65	SAA except light red (10R 6/6), low plasticity	Loss of circulation at a depth of 63.0 feet
			152.6			
SS 18	4-7-12	14		70	**SAND, with silt (SP-SM)** - Very pale brown (10YR 7/4), moist, medium dense, nonplastic, -HCL	
			147.6			
SS 19	6-33-50/2"	14	145.1	75	**SAND, silty, clayey (SC-SM)** - Very pale brown (10YR 8/3), moist, very dense, nonplastic, -HCL	Top of Utley Limestone at a depth of 74.5 feet.
			142.6		**SAND, silty, clayey with gravel (SC-SM)** - White (2.5Y 8/1), moist, very dense, low plasticity, +HCL	
SS 20	14-14-17	17		80	**SAND, with silt (SP-SM)** - Very pale brown (10YR 8/3), moist, dense, nonplastic, -HCL	
			137.6			
SS 21	50/3"	3		85	**CLAY, silty, gravelly with sand (CL-ML)** - Pale yellow (2.5Y 8/2), moist, hard, low plasticity, +HCL	
			132.6			
SS 22	7-10-10	18	130.6	90	**CLAY, silty (CL-ML)** - Yellow (2.5Y 7/6), moist, very stiff, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 89.0 feet.
					CLAY, silty (CL-ML) - Greenish grey (GLEY1 5/10GY), moist, very stiff, low plasticity, +HCL	
SS 23	50/3"	3		95	SAA except greenish grey (GLEY1 5/5GY), damp, hard, nonplastic	
			122.6			
SS 24	17-50/5"	11		100	**CLAY, silty with sand (CL-ML)** - Greenish grey (GLEY1 5/5G), damp, hard, fine grained SAND, nonplastic, -HCL	
SS 25	50/3"	3		105	SAA except greenish grey (GLEY2 5/10GY)	
			112.6			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4028**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4028

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		50/1"	1		110		**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 5/10Y), moist, hard, nonplastic, +HCL	
				107.6				
SS 27		17-50/3"	9		115		**CLAY, silty with sand (CL-ML)** - Greenish grey (GLEY1 5/5G), damp, hard, nonplastic, contains shell hash, +HCL	
				102.6				
SS 28		50/2"	2		120		**CLAY, silty, gravelly (CL-ML)** - Greenish grey (GLEY1 6/5GY), moist, hard, nonplastic, +HCL	Water level depth at beginning of 2/07/2007 = 62.0 feet
				97.6				
SS 29		20-23-37	18		125		**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 6/10Y), moist, hard, low plasticity, +HCL	
SS 30		31-30-50/2"	14		130		SAA	
SS 31		29-50/2"	8		135		SAA except greenish grey (GLEY1 7/10Y)	
SS 32		50/2"	2		140		SAA except greenish grey (GLEY1 7/5GY), damp	
SS 33		16-16-22	18		145		SAA except greenish grey (GLEY1 7/10Y)	
SS 34		10-16-25	18	69.6	150		SAA except greenish grey (GLEY1 6/10Y)	
							Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4028**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4029

LOGGED BY	COORDINATES	BEGUN	COMPLETED
R. Clark	N 1141874.9 E 620700.0	2/6/2007	2/7/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.3	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.3			
SS 1	7-10-7	16	219.1		**SAND, with silt and gravel (SP-SM)** - Red (2.5YR 4/4) and white (GLEY1 8/N), dry, medium dense, fine grained	Top of Fill at a depth of 0.0 feet
SS 2	7-8-7	15	217.0		**SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/6), dry, medium dense, fine grained, nonplastic	Top of Barnwell Group at a depth of 1.2 feet
SS 3	7-11-11	14		5	**SAND, with clay (SP-SC)** - Yellowish red (5YR 5/8), damp, medium dense, fine grained, nonplastic SAA except red (2.5YR) and reddish yellow (7.5YR 6/8)	
SS 4	9-12-16	16				
SS 5	8-10-19	12		10	SAA	
SS 6	13-12-11	14			SAA except red (2.5YR 4/8)	
SS 7	5-8-10	17		15	SAA	
SS 8	6-7-10	12		20	SAA except strong brown (7.5YR 5/8)	
			198.3			
SS 9	9-15-18	12		25	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), damp, dense, medium to coarse grained, nonplastic, subrounded	
			193.3			
SS 10	5-8-10	14		30	**CLAY, with sand (CL)** - Yellow (10YR 7/8), damp, very stiff, low plasticity, very fine grained SAND	
			188.3			
SS 11	6-7-7	15		35	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/6), moist, medium dense, fine grained, nonplastic	
			183.3			
SS 12	2-3-4	18		40	**CLAY, with sand (CL)** - Brownish yellow (10YR 6/8), moist, loose, low plasticity	
			178.3			
SS 13	5-3-5	0		45	**NO RECOVERY**	
			173.3			
SS	7-8-7	18			**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), moist, medium dense, fine grained,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-4029

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4029

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			168.3		nonplastic	
SS 15	5-5-5	17		55	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), moist, medium dense, fine grained, nonplastic	
SS 16	6-10-9	18	158.3	60	SAA	
SS 17	5-5-7	18	153.3	65	**CLAY, with sand (CL)** - Very pale brown (10YR 7/4), wet, medium stiff, low plasticity	
SS 18	3-5-5	18	148.8	70	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 7/4), wet, medium dense, fine grained, nonplastic	
SS 19	8-12-16	18	143.3	75	**CLAY, with sand and gravel (CL)** - Pale yellow (2.5Y 8/2), moist, very stiff, low plasticity, contains shell hash, +HCL	
SS 20	8-9-10	18	136.8	80	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/2), wet, medium dense, fine grained, nonplastic, -HCL	
SS 21	12-50/5"	3	133.3	85	**CLAY, with gravel (CL)** - Pale yellow (2.5Y 8/2), wet, hard, low plasticity, contains cementation, +HCL	End logging by R. Clark. Begin logging by A. Reimer.
SS 22	5-9-11	18	129.3	90	**CLAY (CL)** - Pale yellow (5Y 7/4), damp, very stiff, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 91.0 feet
SS 23	18-28-36	17		95	**SILT (ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, nonplastic, +HCL	
SS 24	16-20-36	18		100	SAA	Water level depth at end of 2/6/07 = Ground surface
SS 25	12-18-19	18	113.3	105	SAA except contains abundant shell fragments	Water level depth at beginning of 2/7/07 = 60.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4029**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4029

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	⊠	22-44-50/4"	16		110		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, low plasticity, +HCL	
SS 27	⊠	11-14-16	18		115		SAA except very stiff to hard, contains no shell fragments	
SS 28	⊠	14-23-27	18		120		SAA except contains cementation	
SS 29	⊠	50/5"	5		125		SAA except hard	
SS 30	⊠	50/5"	5		130		SAA	
SS 31	⊠	11-50/4.5"	10		135		SAA greenish gray (GLEY1 6/10Y)	
SS 32	⊠	26-50/5.5"	11.5		140		SAA	
SS 33	⊠	12-20-27	18		145		SAA except low to medium plasticity	
SS 34	⊠	14-18-26	18	70.3	150		SAA Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4029**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4030

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1141676.7 E 620698.5	1/21/2007	3/13/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Melvin-MACTEC	CME-55	6 Inches	219505	150.3

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.4	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.4			
SS 1	11-10-5	14	220.9		**SAND, silty with gravel (SM)** - Red (10R 4/6), damp, medium dense, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	9-11-17	18			**SAND, silty (SM)** - Red (10R 5/6), damp, medium dense, fine grained, nonplastic to low plasticity, -HCL	
SS 3	6-12-15	15	216.9	5	SAA except low plasticity	
SS 4	6-15-22	18	214.4		**CLAY, silty, sandy with gravel (CL-ML)** - Red (10R 4/6), moist, hard, high plasticity, -HCL	
SS 5	11-13-18	16		10	**SAND, silty (SM)** - Red (10R 5/6), damp, medium dense, fine grained, low plasticity, -HCL	
SS 6	11-12-16	18	210.4		SAA except red (10R 4/6)	
UD 1		14		15	***SAND, with silt (SP-SM)** - Red (2.5YR 4/6), damp, fine grained, nonplastic, -HCL Pocket Penetrometer: 2.5 TSF	Direct Push
SS 7	8-12-17	11		20	SAA except red (2.5YR 5/6), medium dense	
SS 8	8-10-7	14		25	SAA except light red (2.5YR 6/8)	
UD 2		2		30	SAA except red (2.5YR 4/6) Pocket Penetrometer: 2.0 TSF	Direct Push
			190.4			
UD 3		13		35	**SAND, silty (SM)** - Light red (10R 6/8), damp, medium dense, fine grained, -HCL	Direct Push
			185.4			
UD 4		16		40	**SAND, sitly, clayey (SC-SM)** - Light red (10R 6/8), moist, fine grained, low plasticity, -HCL Pocket Penetrometer: 3.5 TSF	Direct Push
			180.4			
SS 9	3-5-6	18		45	**SILT, sandy (ML)** - Reddish yellow (2.5YR 7/8), moist, stiff, nonplastic, -HCL	
			175.4			
SS	2-4-7	18			**SAND, clayey (SC)** - Reddish yellow (5YR 7/8), moist, medium dense, medium plasticity,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4030

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4030

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
10			170.4		-HCL	Water level depth at beginning of 2/2/07 = 27.0 feet
SS 11	11-8-13	13	165.4	55	**SAND, silty, clayey (SC-SM)** - Reddish yellow (7.5YR 7/6), moist, dense, fine to medium grained, low plasticity, -HCL	
SS 12	6-2-8	18	160.4	60	**CLAY, silty, sandy (CL-ML)** - Reddish yellow (5YR 6/6), damp to moist, stiff, low plasticity, -HCL	
SS 13	8-6-14	18		65	**SAND, silty (SM)** - Reddish yellow (7.5YR 6/8), moist, medium dense, nonplastic, -HCL	
SS 14	2-6-7	18	149.4	70	SAA except very pale brown (10YR 7/3)	
SS 15	15-14-14	14	145.4	75	**GRAVEL, silty, clayey with sand (GC-GM)** - Pale yellow (2.5Y 8/2) damp, medium dense, low plasticity, contains large carbonate gravel clusters, +HCL	Loss of circulation.
SS 16	5-5-12	18		80	**SAND, silty (SM)** - Pale yellow (2.5R 8/2), moist, medium dense, nonplastic, +HCL	
SS 17	10-10-16	18	134.9	85	SAA except -HCL	
SS 18	50/6"-6-7	9	130.4	90	**CLAY, silty, gravelly (CL-ML)** - Pale yellow (2.5R 8/2), moist, stiff, low plasticity, +HCL	
SS 19	8-10-10	18	125.4	95	**CLAY, silty with sand (CL-ML)** - Pale yellow (2.5YR 7/4), moist, very stiff, medium plasticity	
SS 20	50/3"	3	120.4	100	**CLAY, silty (CL-ML)** - Greenish gray (GLEY 1 5/10Y), damp, hard, nonplastic, +HCL	Top of Blue Bluff Marl at a depth of 97.0 feet End logging by L. Davis. Begin logging by R. Clark.
UD 5		9		105	**CLAY (CL)** - Greenish gray (GLEY 1 5/5GY), moist, hard, low plasticity, contains some cemented layers, +HCL Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher Installed 6" steel casing to a depth of 103.0 feet
UD 6		29				Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4030**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4030

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					SAA	
SS 21	20-33-50/2"	14		110	Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF SAA	
SS 22	13-20-35	18		115	SAA	
SS 23	15-29-50/4"	16		120	SAA	
			100.4			
UD 7		10		125	**CLAY, silty with gravel (CL-ML)** - Greenish gray (GLEY 1 5/5GY), moist, hard, low plasticity, contains some cemented areas, +HCL Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF	Pitcher Water level depth at end of 3/12/07 = Ground surface
UD 8		24			SAA	Pitcher
SS 24	20-50/3"	9	93.9	130	Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF **CLAY, silty (CL-ML)** - Greenish gray (GLEY 1 6/5GY), moist, hard, low plasticity, contains some cemented areas, +HCL	Water level depth at beginning of 3/13/07 = 16.0 feet
SS 25	9-35-32	18		135	SAA except light olive gray (5Y 6/2)	
SS 26	50/3"	3		140	SAA	
SS 27	10-20-40	18		145	SAA	
UD 9		28	72.1	150	SAA Pocket Penetrometer: >4.5 TSF, >4.5 TSF, >4.5 TSF Boring terminated at 150.3 feet	Pitcher

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4030**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4031

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1141399.8 E 620975.0	2/18/2007	2/20/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.1			
SS 1	5-10-12	6			**SAND, silty (SM)** - Red (10R 4/8), dry, medium dense	Top of Barnwell Group at a depth of 0.0 feet
SS 2	7-15-20	18			SAA except dense	
SS 3	8-8-14	10		5	SAA except medium dense	
SS 4	10-12-11	10			SAA	
SS 5	6-12-15	8		10	SAA	
SS 6	3-7-6	6			SAA	
SS 7	8-11-12	6		15	SAA	
			205.1			
SS 8	8-9-12	0		20	**NO RECOVERY**	
			200.1			
SS 9	4-7-10	8		25	SAA except red (10R 4/6), damp	
UD 1		15		30	SAA Pocket Penetrometer: 4.5 TSF	Direct Push Water level depth at end of 2/18/07 = Ground surface
UD 2		20.5		35	SAA, except red (2.5YR 4/6) Pocket Penetrometer: 2.25 TSF	Water level depth at beginning of 2/19/07 = 25.0 feet Direct Push
UD 3		21.5		40	SAA except red (2.5YR 4/6) and reddish yellow (7.5YR 6/8) Pocket Penetrometer: 2.0 TSF	Direct Push
			180.1			
SS 10	8-12-15	10		45	**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), moist, medium dense	
			175.1			
SS	5-5-7	12			**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), moist to wet, medium dense, contains clay	Installed 4" steel casing to a depth of 47.0 feet

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4031

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4031

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11					in lenses	
			170.1			
SS 12	8-12-12	10		55	**SAND, silty (SM)** - Reddish yellow (7.5YR 6/8), damp, medium dense	
			165.1			
SS 13	3-3-8	17		60	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), damp, medium dense	
			160.1			
SS 14	7-8-9	14	158.1	65	**CLAY, sandy (CL)** - Brownish yellow (10YR 6/6), damp, very stiff **SAND, silty (SM)** - Yellow (10YR 7/8), damp, medium dense	
			155.1			
SS 15	7-15-17	10		70	**SAND, with silt (SP-SM)** - Yellow (10YR 8/6), wet, medium dense	
SS 16	11-22-26	10		75	SAA except pale yellow (2.5Y 8/3), dense	
			145.1			
SS 17	5-5-6	14		80	**SAND, clayey** - Brownish yellow (10YR 6/8), wet, medium dense	
			140.1			
SS 18	7-11-12	13		85	**SAND, silty (SM)** - Yellow (10YR 6/8), wet, medium dense	
			134.6			
SS 19	6-5-6	0		90	**NO RECOVERY**	
			130.1			
SS 20	6-8-10	18		95	**CLAY, silty (CL-ML)** - Pale yellow (5Y 7/4), damp, very stiff, -HCL	
			125.4			Top of Blue Bluff Marl at a depth of 96.75 feet
SS 21	27-31-35	18		100	**CLAY (CL)** - Greenish gray (GLEY1 5/5GY), damp, hard, contains cementation, +HCL	
			119.1			
SS 22	16-24-26	18		105	**SILT (ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, contains cementation, +HCL	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4031**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4031

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
				114.1				
SS 23		50/0"	0		110		**NO RECOVERY**	
				109.1				
SS 24		15-19-21	18		115		**CLAY (CL)** - Greenish gray (GLEY1 5/5GY), damp, hard, contains cementation, +HCL	
SS 25		13-22-42	18		120		SAA	Water level depth at end of 2/19/07 = Ground surface
SS 26		50/3"	3		125		SAA	Water level depth at beginning of 2/20/07 = 51.0 feet
SS 27		50/1"	1		130		SAA	
				90.1				
SS 28		50/0"	0		135		**NO RECOVERY**	
				85.1				
SS 29		50/2"	2		140		**GRAVEL, clayey (GC)** - Greenish gray (GLEY1 5/5GY), wet, very dense, contains cementation, +HCL	
SS 30		50/1"	1		145		SAA	
				75.1				
SS 31		13-24-27	18	72.1	150		**CLAY (CL)** - Greenish gray (GLEY1 5/5GY), damp, hard, +HCL Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4031**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	B-4032

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1141118.5 E 620794.6	2/13/2007	2/14/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	3 Inches	211797	38.5

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.2			
SS 1	4-4-4	14			**SAND, clayey (SC)** - Red (10R 4/4), dry, loose	Top of Barnwell Group at a depth of 0.0 feet
SS 2	4-3-4	8			SAA except red (10R 5/6)	
SS 3	3-5-8	13	214.7	5	SAA except red (10R 4/4), damp, medium dense, fine grained	
SS 4	3-5-8	0	212.2		**NO RECOVERY**	
SS 5	6-8-10	13		10	SAA except pale red to red (10R 6/3 to 10R 4/8)	
SS 6	1-3-5	5	207.2		SAA except red (10R 5/6), loose	
SS 7	14-15-18	11		15	**SAND (SP)** - Red (10R 4/8), dry, dense	
SS 8	5-5-10	8	198.2	20	SAA except medium dense	
SS 9	8-9-15	8		25	**SAND, silty (SM)** - Red (10R 4/6), damp, medium dense	
UD 1		24		30	SAA except damp to moist	Direct Push
UD 2		21		35	SAA except reddish yellow (7.5YR 7/8)	Direct Push
			181.7		Boring terminated at 38.5 feet due to mechanical malfunction	Water level depth at end of 2/13/2007 = Ground surface

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4032

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4032A

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1141123.7 E 620794.7	2/14/2007	2/15/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	6 Inches	211797	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					220.2			**SEE B-4032 FOR LITHOLOGY TO 38.5 FEET**	
						5			
						10			
						15			
						20			
						25			
						30			
						35			
UD 1		□ ○		9	181.7	40		***SAND (SP)** - Orange, damp, loose	
SS 1		▲	14-16-19	14		45		SAA reddish yellow (7.5YR 6.5/8), dry, dense	Casing installed to a depth of 42.0 feet
SS		▲	5-12-17	14	173.2			**SAND, clayey (SC)** - Reddish yellow (7.5YR 7/8), medium dense, damp	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4032A

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4032A

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
2			168.2			
SS 3	6-8-10	15		55	**SAND, silty (SM)** - Brownish yellow (10YR 6/6), medium dense, damp	
			163.2			
SS 4	9-10-10	12		60	**SAND, clayey (SC)** - Yellow (10YR 7/6), moist, medium dense	
			158.2			
SS 5	7-12-13	14		65	**SAND, silty (SM)** - Reddish yellow (7.5YR 6/8), wet, medium dense	
SS 6	16-19-20	12		70	SAA	
SS 7	6-8-10	17		75	SAA pale red (10R 6/4)	
SS 8	7-10-12	12		80	SAA except yellow (10YR 7/6), medium dense, -HCL	
SS 9	2-17-27	18		85	SAA except yelow (7.5YR 7/4) and pink (2.5Y 8/6), dense	
			133.2			
SS 10	2-7-16	17		90	**CLAY (CL)** - Pale yellow (5Y 8/4), and olive yellow (5Y 6/6), damp, very stiff	
			126.7			
SS 11	4-6-10	0		95	**NO RECOVERY**	Top of Utley Limestone at a depth of 93.5 feet
			123.2			Water level depth at end of 2/14/2007 = Ground surface
SS 12	5-6-8	16		100	SAA except pale yellow (5Y 7/4), stiff	
			119.2			Top of Blue Bluff Marl at a depth of 101.0 feet
SS 13	14-18-20	13		105	**CLAY (CL)**- Greenish grey (GLEY1 5/1/10Y), damp, hard	
			113.2			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4032A**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4032A

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 14	11-13-19	18		110	**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 5/1/10Y), damp, hard, +HCL	
SS 15	14-19-21	18		115	SAA	
SS 16	14-16-19	18		120	SAA	
			98.2			
SS 17	50/1"	1		125	**CLAY (CL)** - Greenish grey (GLEY1 5/1/10Y), damp, hard, +HCL	
			93.2			
SS 18	18-37-46	18		130	**CLAY, with gravel (CL)** - Greenish grey (GLEY1 5/1/10Y), damp, hard, +HCL	
			88.2			
SS 19	50/1"	1		135	**CLAY (CL)** - Greenish grey (GLEY1 5/1/10Y), damp to wet, hard, +HCL	
SS 20	16-19-22	18		140	SAA	
			78.2			
SS 21	24-43-25	15		145	**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 6/1/10Y), hard, +HCL	
SS 22	14-16-17	18		150	SAA	
			70.2		Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4032A**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4033

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1141398.1 E 620348.8	2/7/2007	2/9/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Melvin-MACTEC	CME-55	3 Inches	219505	149.4

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.9			
SS 1	8-6-10	18			**SAND, with silty clay (SP-SC)** - Red (10R 4/8), damp, fine grained, nonplstic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2					SAA except medium dense	
SS 3	10-10-16	16			SAA except red (10R 4/6)	
			214.4	5		
SS 4	12-17-24	18			**SAND, with silt (SP-SM)** - Red (10R 4/6), damp, dense, fine grained, non plastic, -HCL	
SS 5	10-15-14	15			SAA except red (2.5YR 5/6), medium dense	
			209.4	10		
SS 6	10-15-19	16			**SAND, with silty clay (SP-SC)** - Reddish yellow (5YR 6/6), moist, medium dense, fine grained, nonplastic, -HCL	
			206.9			
SS 7	9-10-9	14		15	***SAND, with silt (SP-SM)** - Weak red (10R 4/4), moist, medium dense, fine grained, nonplastic, -HCL	
SS 8	6-6-8	14		20	SAA	
SS 9	10-15-18	9		25	SAA except light red (10R 6/8), dense	Water level depth at beginning of 2/8/2007 = 13.5 feet
UD 1		18		30	SAA except reddish yellow (7.5YR 6/6) Pocket penetrometer: 1.5 TSF	Water level depth at beginning of 2/9/2007 = 46.0 feet Direct Push
			187.9			
UD 2		13		35	**SAND, with silty clay (SP-SC)** - Reddish yellow (7.5YR 7/6) and brownish yellow (10YR 6/8), moist, low plasticity, -HCL Pocket penetrometer: 0.8 TSF	Direct Push
UD 3		22		40	SAA except yellow (10YR 7/6) and yellow (10YR 7/8) Pocket penetrometer: 1.2 TSF	Direct Push
			177.9			
SS 10	8-9-8	18		45	**SAND, silty, clayey (SC-SM)** - Brownish yellow (10YR 6/8), moist, medium dense, fine grained, low plasticity, -HCL	
SS	10-12-17	17			SAA except nonplastic to low plasticity	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4033

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4033

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11			167.9			
SS 12	8-10-9	14		55	**SAND, clayey (SC)** - Reddish yellow (5YR 7/8), moist, medium dense, fine to medium grained, low plasticity, -HCL	
			162.9			
SS 13	12-12-18	13		60	**SAND, silty (SM)** - Light red (2.5YR 7/8), moist, medium dense, fine to medium dense, nonplastic, -HCL	
			157.9			
SS 14	3-5-5	18		65	**SAND, clayey (SC)** - Light red (2.5YR 7/8), moist, medium dense, fine to medium grained, low plasticity, -HCL	
			152.9			
SS 15	4-2-3	18		70	**SAND, silty, clayey (SC-SM)** - Reddish yellow (5YR 7/6), moist, loose, fine to medium grained, low plasticity, -HCL	
			146.9			
SS 16	25-20-27	18		75	**CLAY, silty with sand (CL-ML)** - Pale yellow (2.5Y 8/2), moist, hard, fine grained SAND, medium plasticity, +HCL	
			142.9			
SS 17	50/1"	1		80	**CLAY, silty, gravelly with sand (CL-ML)** - Pale yellow (2.5Y 8/2), moist, hard, low to medium plasticity, +HCL	Top of Utley Limestone at a depth of 77.0 feet.
SS 18	49-50/2"	8		85	SAA except pale yellow (2.5Y 8/4)	
			132.9			
SS 19	27-50/5"	11		90	**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 5/10Y), moist, hard, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 87.0 feet.
SS 20	27-27-33	18		95	SAA	
SS 21	19-27-37	18		100	SAA except greenish grey (GLEY1 5/5GY), damp, nonplastic	
SS 22	17-17-23	18		105	SAA except greenish grey (5/10Y)	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4033**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4033

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 23	☒	13-17-20	18		110		SAA except greenish grey (GLEY1 6/5GY)	
SS 24	☒	27-50/2"	8		115		SAA except greenish grey (GLEY1 6/10Y), contains shell hash	
SS 25	☒	19-50/4"	10		120		SAA	
				97.9				
SS 26	☒	50/5"	5		125		**CLAY (CL)** - Greenish grey (GLEY1 6/10Y), moist, hard, low plasticity, +HCL	
				92.9				
SS 27	☒	22-32-50/2"	14		130		**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 7/10Y), moist, hard, low plasticity, +HCL	
				87.9				
SS 28	☒	50/5"	5		135		**CLAY, silty, sandy (CL-ML)** - Greenish grey (GLEY1 6/10Y), moist, hard, medium plasticity, +HCL	
				82.9				
SS 29	☒	24-32-50/2"	11		140		**CLAY, silty (CL-ML)** - Greenish grey (GLEY1 7/10Y), moist, hard, low plasticity, +HCL	
SS 30	☒	16-21-39	17		145		SAA except medium plasticity	
SS 31	☒	14-50/5"	11	70.5			SAA except greenish grey (GLEY1 6/10Y), low to medium plasticity	
							Boring terminated at 149.42 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4033**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-4034

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Harvey	N 1141375.7 E 620795.4	2/17/2007	3/20/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-MACTEC	CME-75	6 Inches	219505	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.8		
SS 1	5-7-8	14	222.3	**GRAVEL (GP)**	Top of Fill at a depth of 0.0 feet
SS 2	6-7-9	18		**SAND, silty (SM)** - Red (10R 4/6) to yellow (10YR 7/8), dry, medium dense	Top of Barnwell Group at a depth of 0.5 feet
SS 3	7-9-10	10		SAA except yellowish red (5YR 5/8)	
SS 4	10-12-11	14		SAA	
SS 5	10-11-13	11		SAA	
SS 6	12-14-17	10	212.3	**SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/6), dry, medium dense	
SS 7	2-8-12	10	209.8	**SAND, silty (SM)** - Yellowish red (5YR 5/8), wet, medium dense	
SS 8	12-14-15	11		SAA except red (2.5YR 5/6), dry	
SS 9	21-35-37	18	200.8	**SAND, with silt and gravel (SP-SM)** - Yellowish red (5YR 5/8), wet, very dense	
UD 1		13.25	195.8	**SAND, silty (SM)** - Red (2.5YR 5/6) Pocket Penetrometer: 0.25 TSF	Direct Push
UD 2		13.5	190.8	**SAND, with clay (SP-SC)** - Yellowish red (5YR 5/8) Pocket Penetrometer: 1.25 TSF	Direct Push
UD 3		11.3		SAA Pocket Penetrometer: 0.5 TSF	Direct Push
SS 10	3-5-6	10	180.8	**SAND, clayey (SC)** - Brown (7.5YR 5/8), moist, medium dense	
SS	4-5-5	18		SAA except brownish yellow (10YR 6/6)	Installed 6" casing to a depth of 47.0 feet

DEPTH IN FT: 5, 10, 15, 20, 25, 30, 35, 40, 45

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4034

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-4034

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
11						
SS 12	8-11-12	18		55	SAA except light reddish brown (5YR 6/4), damp	
			165.8			
SS 13	8-4-6	18		60	**CLAY, sandy (CL)** - Reddish brown (2.5YR 5/4), moist, stiff	
			160.8			
SS 14	18-19-24	10		65	**SAND (SP)** - Light yellowish brown (10YR 6/4), damp, dense	
			155.8			
SS 15	10-9-11	14		70	**SAND, clayey (SC)** - Light red (2.5YR 6/6), damp, medium dense	
			150.8			
SS 16	4-4-7	18		75	**CLAY, sandy (CL)** - Yellow (5Y 8/6), moist, stiff -HCL	
			146.0			
SS 17	5-11-17	10		80	**GRAVEL, clayey (GC)** - Pale yellow (2.5Y 8/3), medium dense, contains shell hash, +HCL	Water level depth at end of 2/17/07 = Ground surface
			140.8			
SS 18	18-17-24	18		85	**GRAVEL, silty (GM)** - Pale yellow (5Y 8/4), moist, dense, contains shell hash, +HCL	
			135.8			
SS 19	WOH/18"	0		90	**NO RECOVERY**	Loss of circulation at a depth of 89.5 feet
			130.8			
SS 20	7-15-17	18		95	**SAND (SP)** - Yellow (10YR 7/6), wet, dense	
			124.3			
SS 21	7-50/1"	7.5		100	**CLAY (CL)** - Greenish gray (GLEY 1 5/10Y), damp, hard	Top of Blue Bluff Marl at a depth 98.5 feet
SS 22	17-24-24	18		105		Casing advanced to a depth of 104.0 feet End logging by M. Harvey.
			115.8			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4034**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-4034

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
						Begin logging by G. Pillappa.
UD 4		9.5		110	***SILT, gravelly with sand (MH)** - Dark greenish gray (GLEY1 4/5GY), dry to damp, contains shell fragments and phosphate grains, +HCL	End drilling by Warren-MACTEC. Graves drilling advanced casing to a depth of 104.0 feet Begin drilling by Banks-MACTEC with a CME-550, hammer serial #337153. Pitcher
UD 5		30		115	SAA except damp Pocket Penetrometer: >4.5 TSF	
				120	SAA Pocket Penetrometer: >4.5 TSF	Pitcher
SS 23	9-38-50/1"	13		125	SAA except greenish gray (GLEY 5/10GY), dry to damp	Water level depth at end of 3/19/07 = Top of casing
SS 24	10-11-24	18		130	SAA	Water level depth at beginning of 3/20/07 = 10.0 feet
SS 25	24-38-50/2"	14		135	SAA	
SS 26	28-50/5"	11		140	SAA except greenish gray (GLEY1 6/5GY), dry	
			80.8			
UD 6		30		145	***CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), damp, low plasticity, contains shell fragments and phosphate grains, +HCL Pocket Penetrometer: >4.5 TSF	Pitcher
SS 27	26-37-43	18	72.8	150	SAA Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4034**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-4035

LOGGED BY	COORDINATES	BEGUN	COMPLETED
A. Reimer	N 1142729.1 E 620876.3	2/8/2007	2/27/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Warren-A.E. Drilling	CME-750	3 Inches	328848	164.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
220.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			220.5			
SS 1	5-9-6	16	219.0		**GRAVEL (GP)** - Brown (7.5YR 4/3) and dark brown (7.5YR 3/4), moist, medium dense, nonplastic, -HCL	Top of Fill at a depth of 0.0 feet
SS 2	7-7-10	18	217.3		**SAND, silty, clayey (SC-SM)** - Brown (7.5YR 4/4) and red (2.5YR 4/8), damp, medium dense, fine to medium grained, nonplastic	Top of Barnwell Group at a depth of 1.5 feet
SS 3	8-8-5	8	215.0	5	**SAND (SP)** - Yellowish red (5YR 5/8), dry, medium dense, fine to medium grained, nonplastic, -HCL	
SS 4	3-3-3	16			**SAND, silty, clayey (SC-SM)** - Yellowish red (5YR 5/8) and strong brown (7.5YR 5/8), dry to damp, loose, fine to medium grained, nonplastic, -HCL	
SS 5	3-3-5	8	210.0	10	SAA except strong brown (7.5YR 5/8), reddish brown (5YR 4/4), and brownish yellow (10YR 6/6), low plasticity	
SS 6	2-3-5	0	207.5		**NO RECOVERY**	
SS 7	7-10-8	3.5		15	**SAND, silty, clayey (SC-SM)** - Strong brown (7.5YR 5/8) and reddish brown (5YR 4/4), damp, medium dense, medium grained, nonplastic, -HCL	
SS 8	5-5-6	13		20	SAA except strong brown (7.5YR 5/8) and yellow (10YR 8/6), fine to medium grained, low plasticity	
SS 9	6-4-5	4		25	SAA	
			193.5			
SS 10	4-4-5	18		30	**CLAY, sandy (CL)** - Brownish yellow (10YR 6/6), damp, stiff, low plasticity, fine to medium grained SAND, -HCL	
SS 11	2-3-5	18		35	SAA except loose, low to medium plasticity	
			183.5			
SS 12	6-6-8	0		40	**NO RECOVERY**	
			178.5			
SS 13	2-3-3	17		45	**SAND, silty, clayey (SC-SM)** - Pale yellow (2.5Y 7/4), damp, medium dense, fine to medium grained, nonplastic to low plasticity, -HCL	
SS	4-5-6	17			SAA except yellow (2.5Y 7/4), pale yellow (2.5Y 8/3) and brownish yellow (10YR 6/6),	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4035

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-4035

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					low plasticity, contains CLAY lenses	
SS 15	5-9-11	14		55	SAA except yellow (2.5Y 7/4) and pale yellow (2.5Y 8/3), moist	
			163.5			
SS 16	19-20-26	16		60	**CLAY, with gravel and sand (CL)** - Pale yellow (2.5Y 8/2), moist, hard, low plasticity, contains shell fragments, +HCL	
SS 17	14-23-50/3"	15		65	SAA	
			153.5			Loss of circulation at a depth of 66.0 feet
SS 18	6-10-13	18		70	**SAND, clayey (SC)** - Pale yellow (5Y 8/4), damp to moist, medium dense, medium to coarse grained, low plasticity, contains shell fragments, +HCL	
SS 19	14-14-16	15		75	SAA except dense, fine to medium grained, nonplastic to low plasticity	Installed 6" steel casing to a depth of 69.0 feet
SS 20	7-8-11	18		80	SAA except damp, medium dense, nonplastic	
			138.5			Top of Utley Limestone at a depth of 82.0 feet
SS 21	50/0.5"	0		85	**NO RECOVERY**	
			134.5			Top of Blue Bluff Marl at a depth of 86.0 feet
SS 22	5-5-8	18		90	**CLAY, silty (CL-ML)** - Pale olive (5Y 6/3) and greenish gray (GLEY1 5/10Y), damp, stiff, nonplastic to low plasticity, +HCL	
				95		Water level depth at beginning of 2/26/07 = 26.0 feet Advanced casing to a depth of 95.0 feet End logging by A. Reimer. Begin logging by L. Davis.
UD 1		24		100	SAA except greenish gray (GLEY1 5/10Y) and (GLEY2 6/10GY), dry to damp, medium plasticity Pocket Penetrometer: >4.5 TSF	Pitcher
			118.5		SAA except greenish gray (GLEY2 6/10GY), low plasticity	
UD 2		23		105	***SILT (MH)** - Greenish gray (GLEY1 5/10Y), damp, low plasticity, +HCL Pocket Penetrometer: >4.5 TSF	Pitcher
			113.5			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4035**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-4035

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 23	12-50/3"	9	108.5	110	**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 5/5GY), damp, hard, low plasticity, +HCL	
SS 24	29-35-33	18	103.5	115	**CLAY, silty (CL-ML)** - Greenish gray (GLEY2 5/5GY), damp, hard, medium plasticity, +HCL	
SS 25	45-50/5"	11	98.5	120	**CLAY, silty with gravel (CL-ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, contains shell hash, +HCL	Water level depth at beginning of 2/27/07 = 13.0 feet
SS 26	33-50/5"	11		125	***CLAY, sandy (CL)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, +HCL	
SS 27	10-21-44	18		130	SAA	
SS 28	50/5"	5		135	SAA	
SS 29	13-27-50/4"	16		140	SAA except light greenish gray (GLEY1 7/10Y), moist	
SS 30	13-15-21	18		145	SAA	
UD 3		18		150	SAA except damp Pocket Penetrometer: >4.5 TSF	Pitcher
SS 31	22-50/5"	11		155	SAA except moist	
SS 32	10-12-16	18	58.5	160	SAA except light greenish gray (GLEY2 7/5GY), damp, very stiff, low to medium plasticity	
SS	12-30-50/4"	12			**SAND, silty (SP-SM)** - Dark greenish gray	Top of Still Branch Formation at a depth of 162.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4035**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 4 OF 4	HOLE NO. B-4035

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
33	☒				55.7			(GLEY1 4/5GY), moist, very dense, nonplastic, -HCL Boring terminated at 164.83 feet	

SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-4035

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-4036

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142457.2 E 620876.3	11/13/2006	11/15/2006

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Oglesby-MACTEC	CME-75	5 Inches	219907	170.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
218.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			218.1		
SS 1	6-6-8	14	217.9	**SAND, silty (SM)** - Black (N2 5/1), damp, loose, contains organics	Top of Fill at a depth of 0.0 feet
SS 2	10-9-8	18	215.3	**GRAVEL (GP)** - Dark grey (7.5YR 4/1), damp, loose, contains orgaincs	Top of Barnwell Group at a depth of 0.6 feet
SS 3	7-6-9	15	212.6	**SAND (SP)** - Red (2.5YR 5/6), moist, medium dense, very fine to fine grained SAA except reddish yellow (5YR 6/6)	
SS 4	8-9-12	18		**SAND, clayey (SC)** - Red (10R 4/8), moist, medium dense, fine grained **SAND, silty (SM)** - Red (10R 4/6), moist, medium dense, very fine to fine grained	
SS 5	9-12-17	18		SAA	
SS 6	8-10-11	16		SAA except red (10R 5/8)	
SS 7	8-8-9	16		SAA except yellowish red (5YR 5/8)	
			201.1		
SS 8	6-12-17	14	199.1	**CLAY, with sand (CL)** - Red (10R 4/6), moist, medium stiff to stiff, fine grained, low plasticity **SAND, silty (SM)** - Red (2.5YR 5/8), moist, medium dense, fine to medium grained	
SS 9	14-13-17	12		SAA red (2.5YR 5/8) and brownish yellow (10YR 6/8), except medium dense to dense	
SS 10	5-6-8	18	189.1	SAA **CLAY (CL)** - Yellowish brown (10YR 5/8), moist, stiff, contains SAND lenses 1 to 2mm thick	
			186.1		
SS 11	4-6-8	16		**SAND, silty (SM)** - Yellowish brown (10YR 5/8), moist, medium dense, fine to medium grained	
			181.1		
SS 12	3-5-5	18		**CLAY, sandy (CL)** - Light yellowish brown (2.5Y 6/4), moist, stiff, very fine to fine grained	
SS 13	3-5-5	18		SAA except contains zones of CLAY	
			171.1		
SS	2-2-5	18		**SAND, clayey (SC)** - Yellow (2.5Y 7/6), moist, loose, very fine to fine grained, contains	

DEPTH IN FT: 5, 10, 15, 20, 25, 30, 35, 40, 45

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-4036

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-4036

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					manganese staining	
SS 15	4-4-7	18		55	SAA except medium dense, contains CLAY lenses (pale yellow (5Y 7/4), low plasticity, 2mm thick)	
SS 16	5-8-10	12	156.4	60	SAA except very pale brown (10YR 7/4), moist, medium dense, fine to medium grained	
SS 17	1-2-2	17		65	**SILT, sandy (ML)** - Pale yellow (5Y 7/3), moist, soft, fine to coarse grained, contains white shell fragments	
SS 18	1-1-1	12	146.1	70	SAA except very soft, medium to coarse grained SAND	Loss of circulation at a depth of 68.0 feet Water level depth at beginning of 11/14/2006 = 62.5 feet
SS 19	4-6-4	18		75	**SAND (SP)** - Pale yellow (2.5Y 7/4), wet, medium dense, fine to coarse grained	Installed 3.25" steel casing to a depth of 74.0 feet. Changed to 2 7/8" drill bit.
SS 20	7-10-14	16	136.1	80	SAA except pale yellow (5Y 7/3), very fine to fine grained	
SS 21	13-15-22	16	131.1	85	**SAND (SP)** - Pale yellow (5Y 7/3), wet, dense, very fine to fine grained	Top of Utley Limestone at a depth of 82.0 feet Circulation returned at a depth of 82.0 feet.
SS 22	50/0.5"	0	127.1	90	**NO RECOVERY**	
SS 23	8-15-37	18		95	**SILT, sandy (ML)** - Dark greenish grey (5GY 4/1), moist, hard, very fine grained, nonplastic to low plasticity	Top of Blue Bluff Marl at a depth of 91.0 feet
SS 24	40-50/2"	8		100	SAA	
SS 25	13-50/0"			105	SAA except greenish grey (10Y 5/1)	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	B-4036

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-4036

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	12-14-17	18		110	SAA except contains white shell fragments	
SS 27	32-39-50/5.5"	17.5		115	SAA	
SS 28	12-50/5"	11		120	SAA	Water level depth at end of 11/14/2006 = 30.0 feet
SS 29	50/4"	4		125	SAA	Water level depth at beginning of 11/15/2006 = 51.0 feet
SS 30	50/4"	2		130	SAA except dry to damp	
SS 31	50/1"	1		135	SAA except damp	
			81.1			
SS 32	35-50/2"	8		140	**CLAY, silty (CL-ML)** - Greenish grey (10Y 5/1), moist, hard, very fine grained, low to medium plasticity	
SS 33	50/3"	3		145	SAA except low plasticity	
SS 34	15-27-36	18		150	SAA	
			66.1			
SS 35	21-23-35	18		155	**SILT, with sand (ML)** - Greenish grey (10Y 6/1), moist, hard, very fine grained SAND, low plasticity	
			61.1			
SS 36	18-16-20	18		160	**CLAY, with sand (CL)** - Greenish grey (10Y 6/1), moist, hard, very fine grained, low plasticity	
SS	16-11-13	18			SAA except very stiff, contains white shell	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-4036**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 4 OF 4	HOLE NO. B-4036

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
37	⊠				52.1	165		fragments	
SS 38	⊠	▲	9-16-15	18	48.1	170		**SAND, silty (SM)** - Dark greenish grey (5Y 4/1) and grey (2.5Y 5/1) and very dark grey (2.5Y 3/1), wet, dense, fine to medium grained, contains white shell fragments Boring terminated at 170 feet	Top of Still Branch Formation at a depth of 166.0 feet Water level depth at end of 11/15/2006 = 28.0 feet Water level depth at beginning of 11/16/2006 = 66.2 feet

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-4036

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-5001

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1146177.1 E 621807.7	3/16/2007	3/20/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
219.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			219.0			
SS 1	WOH/6"-1-1	5			**SAND (SP)** - Brown (7.5YR 4/4), moist, very loose, fine to medium grained, contains silt and organics	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-3-6	18	216.8		SAA except yellowish red (5YR 5/8), loose	
			215.8		**CLAY, sandy (CL)** - Yellowish red (5YR 5/8), moist, stiff, low plasticity	
SS 3	6-5-5	15		5	**SAND, with clay (SP-SC)** - Yellowish red (5YR 5/8), moist, loose to medium dense, fine to medium grained	
SS 4	3-3-3	12			SAA except yellowish brown (10YR 5/8)	
SS 5	4-4-5	11			SAA except yellow (10YR 7/8) to yellowish red (5YR 5/8), fine grained, contains clay lenses	
			208.5	10		
SS 6	4-4-5	17			**CLAY,sandy (CL)** - Pale yellow (5Y 7/4), moist, stiff, low plasticity, fine to medium grained SAND	
SS 7	3-3-4	18		15	SAA except fine grained SAND	
			202.0			End logging by B. Sharp. Begin logging by L. Davis.
SS 8	4-7-9	17		20	**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/6), moist, medium dense, low plasticity, -HCL	
			198.0			
SS 9	4-6-10			25	**SAND, clayey (SC)** - Yellow (10YR 7/6), moist, medium dense, low plasticity, +HCL	
			192.0			
SS 10	15-9-38			30	**CLAY, silty, sandy with gravel (CL-ML)** - Yellow (2.5Y 8/6), moist, hard, medium plasticity, contains shell fragments, +HCL	
			187.0			
SS 11	5-7-10			35	**SAND, with silty clay (SP-SC)** - Pale yellow (2.5Y 8/4), moist, medium dense, low plasticity, +HCL	Loss of circulaton at a depth of 33.0 feet Installed 3" steel casing to a depth of 15.0 feet
			182.0			
SS 12	5-8-8	18		40	**SAND, clayey (SC)** - Yellow (2.5Y 8/6), moist, medium dense, low plasticity, +HCL	
			177.0			
SS 13	11-18-18	17		45	**CLAY,silty, sandy with gravel (CL-ML)** - Pale yellow (5Y 8/3), moist, hard, medium plasticity, +HCL	Advanced casing to a depth of 45.0 feet
			172.0			
SS	18-21-18	18			**SAND, silty, clayey with gravel (SC-SM)** - Pale yellow (2.5Y 8/4), moist, dense, low	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-5001

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-5001

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14							plasticity, contains shell fragments, +HCL	
				167.0				
SS 15		19-17-15	13		55		**SAND, with silty clay (SP-SC)** - Pale green (GLEY1 8/2), moist, medium dense, nonplastic, +HCL	
				162.0				
SS 16		14-19-18	18		60		**CLAY, silty, sandy, gravelly (CL-ML)** - Pale yellow (2.5Y 8/2), moist, hard, medium plasticity, constains shell fragments, +HCL	
				157.0				
SS 17		9-10-22	18		65		**CLAY, silty, sandy with gravel (CL-ML)** - Pale yellow (2.5Y 8/2), moist, hard, medium plasticity, contains shell fragments, +HCL	
				152.0				
SS 18		50/2"	2		70		**SAND, with clay and gravel (SP-SC)** - Pale green (2.5Y 8/2), moist, very dense, low plasticity, contains shell fragments, +HCL	
				147.0				
SS 19		10-30-50/3"	15		75		**SAND, clayey (SC)** - Pale yellow (2.5Y 8/2), moist, very dense, medium plasticity, +HCL	
				142.0				
SS 20		10-18-17	12		80		**SAND (SP)** - Very pale yellow (10YR 8/2), moist, medium dense, nonplastic, +HCL	
				137.0				
SS 21		8-11-14	14		85		**SAND, with silt (SP-SM)** - Yellow (10YR 8/6), moist, medium dense, fine to medium grained, nonplastic, +HCL	
				132.0				
SS 22		5-8-12	15		90		**SAND, with silty clay (SP-SC)** - Yellow (10YR 8/6), moist, medium dense, fine grained, low plasticity, +HCL	
SS 23		8-10-11	14		95		SAA	
				122.0				
SS 24		18-5-6	12		100		**CLAY, silty, sandy with gravel (CL-ML)** - Reddish yellow (7.5Y 8/6), moist, stiff, medium plasticity, +HCL	Loss of circulaton at a depth of 99.0 feet
				117.0				Top of Blue Bluff Marl at a depth of 102.0 feet
SS 25		6-8-14	18		105		**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 5/10GY), damp, very stiff, low plasticity, +HCL	Advanced casing to a depth of 105.0 feet
				112.0				

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-5001**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-5001

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	17-50/4"	9		110	**SILT, with sand (ML)** - Greenish gray (GLEY1 5/5G), damp, hard, low plasticity, +HCL	Water level depth at beginning of 03/20/07 = 49.0 feet Advanced casing to a depth of 110.0 feet
			107.0			
SS 27	8-50/6"	12		115	**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 5/5G), damp, hard, medium plasticity, +HCL	
			102.0			
SS 28	8-14-19	18		120	**SILT, with sand (ML)** - Greenish gray (GLEY1 6/5G), damp, hard, low plasticity, +HCL	
			97.0			
SS 29	13-23-50/6"	18		125	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, +HCL	
SS 30	11-14-15	18		130	SAA except grayish green (GLEY1 4/2), very stiff	
SS 31	23-50/1"	7		135	SAA except greenish gray (GLEY1 6/10Y), hard	
			82.0			
SS 32	14-15-43	18		140	**CLAY (CL)** - Light greenish gray (GLEY1 7/10Y), damp, hard, low plasticity, +HCL	
SS 33	14-14-24	18		145	SAA	
SS 34	19-23-22	18	69.0	150	SAA except light greenish gray (GLEY1 7/5GY), medium plasticity Boring terminated at 150 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-5001**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-5002

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1146339.8 E 621808.3	3/13/2007	3/14/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	5 Inches	337153	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
241.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			241.5			
SS 1	1-2-1	18			**SAND, silty (SM)** - Strong brown (7.5YR 4/6), dry, very loose, fine grained, nonplastic, contains organics	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-1-1	18			SAA except yellowish red (5YR 5/8)	
SS 3	2-2-2	5		5	SAA except red (2.5YR 4/8)	
SS 4	2-2-3	11			SAA except loose	
SS 5	3-2-4	14		10	SAA	
SS 6	2-4-6	13			SAA	
SS 7	6-8-10	11		15	SAA except medium dense	
SS 8	5-6-6	14		20	SAA except yellowish red (5YR 5/8), damp, medium dense, low plasticity, contains CLAY traces	
			219.5			
SS 9	9-22-24	17		25	**SAND, clayey (SC)** - Red (2.5YR 4/8), damp, dense, fine grained, low plasticity	
SS 10	6-7-8	11		30	SAA except yellow (10YR 7/6), dry to damp, medium dense	
			209.5			
SS 11	2-3-4	18		35	**CLAY, sandy (CL)** - Yellow (2.5Y 7/6), damp, medium stiff, medium plasticity, fine grained SAND, -HCL	
SS 12	2-2-3	18		40	SAA except pale yellow (5Y 7/4)	
SS 13	4-4-5	18		45	SAA except stiff	
			194.5			
SS	5-6-12	18			**CLAY, with sand (CL)** - Pale yellow (5Y 7/4), damp, very stiff, low plasticity, contains fine	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-5002

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-5002

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					grained SAND traces, +HCL	
			189.5			
SS 15	10-12-14	11		55	**SAND, clayey (SC)** - Pale yellow (5Y 8/2), damp, medium dense, fine to medium grained, contains shell fragment, +HCL	Loss of circulation at a depth of 55.0 feet
			184.5			
SS 16	WOH/12"-1	18		60	**CLAY, silty with sand (CL-ML)** - Pale yellow (5Y 7/4), damp, medium stiff, constains shell fragments, +HCL	
SS 17	5-6-6	18		65	SAA except stiff, low plasticity	Installed 3" steel casing to a depth of 65.0 feet
			174.5			
SS 18	11-15-13	16		70	**SAND, clayey (SC)** - Pale yellow (5Y 8/2), damp, medium dense, fine grained, contains shell fragments, +HCL	
SS 19	26-37-25	15		75	SAA except very dense	
SS 20	11-17-15	18		80	SAA except dense, low plasticity	
SS 21	39-25-17	18		85	SAA	
SS 22	13-37-17	15		90	SAA except very dense	
SS 23	10-13-11	14		95	SAA except very pale brown (10YR 8/2), medium dense	
SS 24	50/4"	2		100	SAA except very dense	
			139.5			
SS 25	27-38-26	14		105	**SAND, with silt (SP-SM)** - Pale yellow (5Y 8/3), damp, very dense, fine grained, nonplastic, +HCL	
			134.5			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-5002**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-5002

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		10-15-12	18		110		**SAND, clayey (SC)** - Light gray (10YR 7/2), damp, medium dense, fine grained, low plasticity, contains shell fragments, +HCL	
SS 27		10-15-16	18		115		SAA	
				124.5				
SS 28		10-37-31	18		120		**CLAY, silty with sand (CL-ML)** - Pale yellow (2.5Y 8/3), damp, hard, contains shell fragments, +HCL	
SS 29		9-50/3"	9		125		SAA	
				114.5				Top of Blue Bluff Marl at a depth of 127.0 feet
SS 30		7-11-16	18		130		**CLAY, silty (CL-ML)** - Greenish gray (GELY1 5/5GY), dry, very stiff, low plasticity, contains shell fragments and fine sand trace, +HCL	
SS 31		9-31-33	18		135		SAA except hard	
SS 32		50/1"	1		140		SAA except damp	
SS 33		9-17-20	18		145		SAA except contains sand seams	
SS 34		13-23-34	18	91.5	150		SAA	
							Boring terminated at 150.0 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-5002**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-5003

LOGGED BY	COORDINATES	BEGUN	COMPLETED
G. Pillappa	N 1146386.6 E 621574.7	3/14/2007	3/15/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Banks-MACTEC	CME-550	6 Inches	337153	148.7

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
227.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			227.9			
SS 1	1-2-2	16			**SAND, silty (SM)** - Strong brown (7.5YR 4/6), dry, very loose, fine grained, nonplastic, contains organics	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-1-1	18			SAA except yellowish red (5YR 5/6), contains no organics	
SS 3	1-2-2	17		5	SAA except strong brown (7.5YR 5/6), damp	
SS 4	2-2-2	14			SAA except strong brown (7.5YR 5/8)	
SS 5	2-2-3	13		10	SAA except yellowish red (5YR 5/8), loose	
SS 6	2-5-7	16			SAA except medium dense	
SS 7	5-7-10	13		15	SAA except strong brown (7.5YR 5/8)	
SS 8	5-11-17	13		20	SAA except yellowish red (5YR 5/8)	
SS 9	11-15-20	11		25	SAA except dense	
SS 10	8-12-12	12		30	SAA except medium dense, contains trace phosphate grains	
			195.9			
SS 11	15-23-27	12		35	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), damp, very dense, fine grained, nonplastic, -HCL	
			190.9			
SS 12	9-10-7	17		40	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8) to pale yellow (5Y 7/3), damp, medium dense, fine grained, low plasticity	
SS 13	4-9-7	16		45	SAA	
			180.9			
SS	3-3-5	18			**CLAY, sandy (CL)** - Light yellowish brown (2.5Y 6/4), damp, medium stiff, low plasticity,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-5003

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-5003

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					fine grained SAND	
SS 15	2-3-6	18		55	SAA except brownish yellow (10YR 6/6), stiff	
SS 16	2-3-6	18		60	SAA	Loss of circulation at a depth of 57.0 feet
			165.9			
SS 17	4-5-6	11		65	**SAND, clayey (SC)** - Brownish yellow (10YR 6/6), damp, medium dense, fine grained low plasticity, contains SAND seams	
SS 18	2-2-2	15		70	SAA except very loose, contains trace phosphate grains and shell fragments, -HCL	
SS 19	2-4-4	12.5		75	SAA except light yellowish brown (10YR 6/4), loose	Installed 3" steel casing to a depth of 75.0 feet
SS 20	2-3-6	17		80	SAA except pale brown (10YR 6/3), medium plasticity	
SS 21	5-6-6	15		85	SAA except medium dense	
SS 22	5-5-7	14		90	SAA except brownish yellow (10YR 6/6)	Water level depth at end of 3/14/07 = Top of casing
			135.9			
SS 23	14-20-22	9		95	**SAND, with silt (SP-SM)** - Very pale brown (10YR 7/4), damp, dense, fine grained, nonplastic	Water level depth at beginning of 3/15/07 = 75.0 feet
			130.9			
SS 24	7-9-9	14		100	**SAND, with clay (SP-SC)** - Very pale brown (10YR 7/3), damp, medium dense, fine grained, nonplastic, -HCL	
SS 25	5-7-7	14		105	SAA	
			120.9			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-5003**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 3 OF 3	HOLE NO. B-5003

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	6-5-36	17		110	**SAND, clayey (SC)** - Pale yellow (5Y 8/3), damp, dense, fine to medium grained, low plasticity, contains shell fragments, +HCL	
SS 27	14-1-1	9		115	SAA except light gray (5Y 7/2), very loose	
			110.9			Top of Blue Bluff Marl at a depth of 117.0 feet
SS 28	7-12-16	18		120	**CLAY, silty with sand (CL-ML)** - Greenish gray (GLEY1 5/10GY), dry to damp, very stiff, low plasticity, contains trace phosphate grains and shell fragments, +HCL	
SS 29	14-24-50/1"	13		125	SAA except hard	
SS 30	13-14-50/5"	17		130	SAA	
SS 31	7-12-19	18		135	SAA	
SS 32	16-16-26	18		140	SAA except greenish gray (GLEY1 5/5GY)	
SS 33	12-16-20	18		145	SAA except greenish gray (GLEY1 5/10GY)	
SS 34	50/2"	2	79.2		SAA except greenish gray (GLEY1 6/5GY) Boring terminated at 148.7 feet	

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-5003

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-5004

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1146547.8 E 621568.4	3/14/2007	3/15/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	149.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
236.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			236.6			
SS 1	WOH/6"-1-1	16			**SAND, with silt (SP-SM)** - Light yellowish brown (2.5Y 6/4), damp, very loose, fine grained, contains organics	Top of Barnwell Group at a depth of 0.0 feet
SS 2	WOH/6"-1-1	14			SAA except contains no organics	
SS 3	2-1-2	16			SAA except strong brown (7.5YR 5/6)	
			231.1	5		
SS 4	2-3-6	15			**SAND, silty, clayey (SC-SM)** - Red (10R 4/6), damp, loose, fine grained	
SS 5	6-9-11	14			SAA except medium dense	
				10		
SS 6	6-8-8	15			SAA	
			223.6			
SS 7	8-12-13	16			**SAND, with silt (SP-SM)** - Red (2.5YR 5/8), damp, medium dense, fine grained	
				15		
			219.6			
SS 8	11-14-12	15			**SAND, silty (SM)** - Red (2.5YR 5/8), damp, medium dense, fine grained	
				20		
			214.6			
SS 9	4-10-11	13	212.1		**CLAY, with sand (CL)** - Yellow (10YR 7/6), damp, stiff, low plasticity	
				25	**SAND (SP)** - Reddish yellow (7.5YR 6/6), damp, medium dense, fine to medium grained	
SS 10	9-13-10	16			SAA	
				30		
			204.6			
SS 11	3-4-7	18			**CLAY, sandy (CL)** - Yellow (2.5Y 7/8), damp, stiff	
				35		
			199.6			
SS 12	2-3-4	18			**SAND, clayey (SC)** - Pale yellow (5Y 7/3), damp, loose, fine grained	
				40		
			194.6			
SS 13	1-3-3	18			**CLAY, sandy (CL)** - Pale yellow (5Y 7/3), damp, medium stiff, low plasticity	
				45		
			189.6			
SS	50/5"	5			**GRAVEL, with clay and sand (GP-GC)** - Pale yellow (5Y 8/2), damp, hard, fine to coarse	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-5004

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-5004

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					grained SAND, contains shell fragments, +HCL	Loss of circulation at a depth of 50.0 feet
			184.6			
SS 15	11-12-17	18		55	**SAND, clayey (SC)** - Pale yellow (5Y 8/2), damp, very stiff, fine to coarse grained, contains shell fragments, +HCL	
SS 16	5-5-8	18		60	SAA except stiff, fine grained, contains no shell fragments	Installed 4" steel casing to a depth of 58.5 feet
			174.6			
SS 17	10-10-10	14		65	**GRAVEL, sandy with clay (GP-GC)** - Pale yellow (5Y 8/3), damp, medium dense, fine to coarse grained, contains shell fragments, +HCL	
SS 18	10-15-27	18		70	SAA except pale yellow (5Y 7/3)	
SS 19	13-20-50/5"	17		75	SAA	
SS 20	8-12-6	18		80	SAA except yellow (2.5Y 8/6)	
SS 21	10-13-15	14		85	SAA except pale yellow (2.5Y 8/3)	
			149.6			
SS 22	9-11-13	18		90	**SAND, clayey (SC)** - Very pale brown (10YR 7/3), damp, medium dense, fine to coarse grained, +HCL	
SS 23	26-23-50/5"	17		95	SAA except pale yellow (2.5Y 8/2), very dense	Water level depth at end of 3/14/07 = 10.0 feet
			139.6			
SS 24	20-34-45	15		100	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/3), moist, very dense, fine to medium grained	Water level depth at beginning of 3/15/07 = 30.0 feet
			134.6			
SS 25	11-11-18	18		105	**SAND, silty, clayey (SC-SM)** - Pale yellow (2.5Y 7/4), moist, medium dense, fine grained, contains CLAY seams	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-5004**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-5004

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	11-15-14	17		110	SAA except pale yellow (2.5Y 7/3)	
			124.6			
SS 27	12-11-17	14		115	**SAND, silty (SM)** - Pale yellow (2.5Y 7/3), damp, medium dense, fine to medium grained, contains shell fragments	
			119.6			Top of Utley Limestone at a depth of 117.0 feet
SS 28	50/5"	5		120	**SAND, clayey (SC)** - Pale yellow (5Y 8/2), damp, very dense, fine to coarse grained, contains cemented shell fragments, +HCL	
			114.6			Top of Blue Bluff Marl at a depth of 122.0 feet
SS 29	10-12-18	18		125	**CLAY (CL)** - Dark greenish gray (GLEY1 4/10Y), damp, hard, low plasticity, +HCL	
			109.6			
SS 30	15-18-50/5"	17		130	**CLAY, silty, sandy (CL-ML)** - Dark greenish gray (GLEY1 4/5GY), damp, hard, low plasticity, contains cementation, +HCL	
SS 31	10-50/3"	9		135	SAA	
SS 32	6-14-22	18		140	SAA except greenish gray (GLEY1 5/10Y), contains no cementation	
			94.6			
SS 33	50/3"	3		145	**CLAY (CL)** - Greenish gray (GLEY1 6/10Y), damp, hard, low plasticity, +HCL	
SS 34	9-27-50/4"	16			SAA	
			86.8		Boring terminated at 149.83 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-5004**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-6002

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Mabie	N 1144134.1 E 619626.9	2/15/2007	2/16/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
247.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			247.9			
SS 1	WOH/6"-1-1	9			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/4), damp, very loose, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	3-4-3	12			SAA except loose, fine grained	
SS 3	2-1-2	16			SAA except brownish yellow (10YR 6/4), moist, very loose	
			242.4	5		
SS 4	2-6-8	12			**SAND, silty (SM)** - Strong brown (7.5YR 5/6), moist, medium dense, very fine grained, nonplastic, -HCL	
SS 5	7-9-9	14			SAA	
			237.4	10		
SS 6	6-12-14	16			**SILT, with sand (ML)** - Red (10R 4/8), damp, very stiff, nonplastic, -HCL	
SS 7	6-7-12	14			SAA	
				15		
SS 8	5-8-8	15			SAA except moist	
				20		Installed 3" steel casing to a depth of 20.0 feet
			225.9			
SS 9	5-7-9	7			**SAND, silty (SM)** - Red (10R 4/8), wet, medium dense, fine grained, nonplastic, -HCL	
				25		
SS 10	7-8-9	12			SAA	
				30		
			215.9			
SS 11	4-5-5	14			**CLAY, silty, sandy (CL-ML)** - Very pale brown (10YR 8/2), moist, stiff, low plasticity, -HCL	
				35		
			210.9			
SS 12	3-3-2	17			**SILT, sandy (ML)** - Very pale brown (10YR 8/2), wet, medium stiff, nonplastic, fine to medium grained SAND, -HCL	
				40		
			205.9			
SS 13	2-2-3	18			**CLAY, silty (CL-ML)** - Light yellowish brown (2.5Y 6/3), moist, medium stiff, low plasticity, contains SAND lenses, -HCL	
				45		
			200.9			
SS	3-19-14	18			**CLAY, silty with sand (CL-ML)** - Light yellowish brown (2.5Y 6/4), moist, very stiff,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6002

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-6002

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14							low plasticity, -HCL	
SS 15		5-17-5	16		55		SAA except light gray (2.5Y 7/2), contains shell fragments, +HCL	
				190.9				
SS 16		50/5"	5		60		**CLAY, silty (CL-ML)** - Light gray (2.5Y 7/2), moist, hard, low to medium plasticity, contains shell fragments, +HCL	
SS 17		14-16-27	18		65		SAA except greenish gray (GLEY1 5/10GY), low plasticity	
SS 18		7-9-12	18		70		SAA except very stiff	
				175.9				
SS 19		50/1"	0.25		75		**GRAVEL (GP)** - Cemented shell fragments	
				170.9				
SS 20		14-13-16	18		80		**SAND, with silty clay (SP-SC)** - Pale yellow (2.5Y 8/3), wet, medium dense, low plasticity, contains shell fragments, +HCL	
SS 21		13-18-27	16		85		SAA except dense	
SS 22		11-8-34	18		90		SAA	
				155.9				
SS 23		5-8-10	18		95		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10GY), moist, very stiff, low to medium plasticity, contains minor shell fragments, +HCL	
				150.9				
SS 24		18-25-29	18		100		**CLAY, silty with sand (CL-ML)** - Pale yellow (2.5Y 8/2), moist, hard, low plasticity, contains shell hash, +HCL	Water level depth at end of 2/15/07 = 21.39 feet
SS 25		16-23-19	18		105		SAA	Water level depth at beginning of 2/16/07 = 40.55 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6002**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-6002

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	X	25-34-24	18				SAA except wet	
					110			
				135.9				
SS 27	X	5-13-8	18				**SAND, silty, clayey (SC-SM)** - Very pale brown (10YR 7/3), wet, medium dense, nonplastic to low plasticity, contains shell fragments, +HCL	
					115			
				130.9				
SS 28	X	4-7-13	18				**SAND, silty (SM)** - Very pale brown (10YR 7/3), wet, medium dense, nonplastic, contains shell fragments, +HCL	
					120			
SS 29	X	9-15-21	12				SAA except dense	
					125			
				120.9				
SS 30	X	19-19-35	16				**SAND, with silty clay (SP-SC)** - Very pale brown (10YR 7/3), wet, very dense, nonplastic to low plasticity, contains shell fragments, +HCL	
					130			
				115.9				
SS 31	X	33-14-17	18				**SAND, silty (SM)** - Very pale brown (10YR 7/3), wet, dense, nonplastic, contains shell fragments, +HCL	
					135			
SS 32	X	10-12-50/4"	15				SAA except very dense, fine grained	
					140			
				105.9				
SS 33	X	12-14-50/5"	15				**CLAY, silty with sand (CL-ML)** - Very pale brown (10YR 8/2), wet, hard, low plasticity, contains shell hash, +HCL	
					145			
SS 34	X	6-8-19	18				SAA except very stiff	
				97.9	150		Boring terminated at 150.0 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6002**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-6003

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Mabie	N 1143925.0 E 619422.8	2/19/2007	2/20/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	179.4

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
229.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			229.8			
SS 1	1-1-1	17			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/4), dry, very loose, fine grained, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-1-1	14			SAA except strong brown (7.5YR 5/6)	
SS 3	2-1-2	10		5	SAA	
SS 4	3-3-4	11			SAA except yellowish red (5YR 5/6), moist, loose	
SS 5	5-6-6	12	219.3	10	SAA except red (2.5YR 4/6), medium dense	
SS 6	6-9-10	14	216.8		**SAND, silty (SM)** - Red (2.5YR 4/6), moist, medium dense, fine grained, nonplastic, -HCL	
SS 7	6-7-9	14	212.8	15	**CLAY, silty, sandy (CL-ML)** - Red (2.5YR 4/6), moist, very stiff, low plasticity, -HCL	Installed 3" steel casing to a depth of 15.0 feet
SS 8	4-7-6	14		20	**SAND, silty (SM)** - Yellowish red (5YR 5/8), moist, medium dense, fine grained, nonplastic, -HCL	
SS 9	4-5-6	12	202.8	25	SAA except brownish yellow (10YR 6/6), wet, nonplastic to low plasticity	
SS 10	4-6-6	12	197.8	30	**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), wet, medium dense, fine grained, nonplastic, -HCL	
SS 11	1-3-4	18		35	**CLAY, silty (CL-ML)** - Brownish yellow (10YR 6/6), wet, medium stiff, low plasticity, contains fine grained SAND lenses, -HCL	
SS 12	24-11-25	18		40	SAA except light gray (2.5Y 7/2), hard, contains fine shell hash, +HCL	
SS 13	7-9-18	18		45	SAA except light brownish gray (2.5Y 6/2), moist, very stiff	
SS	5-11-10	18			SAA except greenish gray (GLEY1 5/10GY)	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6003

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-6003

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	5-50/3"	9		55	SAA except light gray (2.5Y 7/2), hard, contains shell fragments	
			172.8			
SS 16	26-50/3"	6		60	**CLAY, silty with sand (CL-ML)** - Pale yellow (5Y 8/3), wet, hard, low plasticity, contains shell hash, +HCL	
			167.8			
SS 17	11-12-13	16		65	**CLAY, silty (CL-ML)** - Pale yellow (2.5Y 8/2), wet, very stiff, low plasticity, contains shell hash, +HCL	
			162.8			
SS 18	6-50/5"	7		70	**SAND, silty (SM)** - Pale yellow (2.5Y 8/2), wet, very dense, nonplastic, contains shell fragments, +HCL	
			157.8			
SS 19	4-6-6	18		75	**CLAY, silty (CL-ML)** - Pale yellow (2.5Y 8/2), moist, stiff, low plasticity, contains shell fragments, +HCL	
			152.8			
SS 20	11-16-28	18		80	**SAND, with silt (SP-SM)** - Light gray (2.5Y 7/2), wet, dense, nonplastic, contains shell hash, +HCL	
			147.8			
SS 21	5-18-20	16		85	**SAND, silty, clayey (SC-SM)** - Light gray (2.5Y 7/8), wet, dense, low plasticity, contains shell hash, +HCL	
SS 22	8-10-11	18		90	SAA except medium dense	
			137.8			
SS 23	6-7-11	18		95	**SAND, with silt (SP-SM)** - Very pale brown (10YR 7/3), wet, medium dense, nonplastic, contains shell fragments, +HCL	
SS 24	6-7-9	18		100	SAA	Water level depth at end of 2/19/07 = 28.72 feet
SS 25	8-14-19	16		105	SAA except light gray (10YR 7/2), dense	Water level depth at beginning of 2/20/07 = 32.45 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6003**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-6003

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	18-31-38	10		110	SAA except very pale brown (10YR 7/3), very dense, fine to medium grained	
SS 27	25-29-31	9		115	SAA	
SS 28	8-11-18	15		120	SAA	
			107.8			
SS 29	50/3"	0		125	**NO RECOVERY**	
			102.8			
SS 30	13-50/2"	7		130	**SILT, with sand (ML)** - Light greenish gray (GLEY1 7/10GY), wet, hard, nonplastic, contains shell hash, +HCL	
SS 31	12-50/5"	7		135	SAA	
			93.0			Top of Blue Bluff Marl at a depth of 136.75 feet
SS 32	16-19-47	18		140	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), moist, hard, low plasticity, contains minor shell fragments, +HCL	
SS 33	50/5"	4		145	SAA	
SS 34	50/3"	2		150	SAA	
SS 35	6-32-50/3"	15		155	SAA except dark greenish gray (GLEY1 4/10GY)	
SS 36	18-50/3"	8		160	SAA	
SS	11-16-38	18			SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6003**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	4 OF 4	B-6003

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
37					165			
SS 38		50/5"	5		170		SAA except greenish gray (GLEY1 6/5GY), contains cementation	
SS 39		11-21-18	18		175		SAA except contains no cementation	
SS 40		36-50/5"	11	50.3			SAA Boring terminated at 179.42 feet	Water level depth at end of 2/20/07 = 82.74 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project Final Log	B-6003

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-6004

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Mabie	N 1143718.2 E 619473.3	2/22/2007	2/23/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
231.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			231.6			
SS 1	3-2-4	12	230.1		**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/6), dry, loose, fine grained, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	3-3-3	10	228.3		**SAND, silty (SM)** - Red (10R 4/4), damp, loose, fine grained, nonplastic, -HCL	
SS 3	3-3-4	10		5	**SAND, with silty clay (SP-SC)** - Red (10R 4/4), damp, loose, fine grained, non to low plasticity, -HCL	
SS 4	3-4-4	11	223.6		SAA	
SS 5	5-6-6	12		10	**SAND, with silt (SP-SM)** - Red (10YR 4/4), medium dense, fine to medium grained, nonplastic, -HCL	
SS 6	10-6-7	9			SAA	
SS 7	3-5-6	8		15	SAA	
SS 8	5-7-10	8		20	SAA	
SS 9	4-5-7	10	204.8	25	SAA	
SS 10	4-5-6	12	199.8	30	**SAND, silty (SM)** - Yellowish brown (10YR 5/6), medium dense, nonplastic, contains shell fragments, +HCL	
SS 11	3-3-4	11		35	**CLAY, silty with sand (CL-ML)** - Light brownish gray (10YR 6/2), moist, medium stiff, low plasticity, contains fine grained SAND lenses and shell fragments, -HCL	
SS 12	2-3-3	18	189.8	40	SAA except does not contain SAND lenses	
SS 13	2-2-2	18	184.8	45	**SAND, silty, clayey (SC-SM)** - Light bownish gray (10YR 6/2), wet, very loose, low plasticity, contains shell fragments, +HCL	
SS	5-7-17	18			**CLAY, silty (CL-ML)** - Light brownish gray (10YR 6/2), moist, very stiff, low plasticity,	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6004

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-6004

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14							contains shell fragments, +HCL	
SS 15		3-4-4	18		55		SAA except medium stiff	
SS 16		2-3-3	18		60		SAA	
				169.8				
SS 17		5-7-6	9		65		**SAND, with silt (SP-SM)** - Very pale bown (10YR 7/3), wet, medium dense, nonplastic, contains shell fragments, +HCL	
SS 18		9-8-9	11		70		SAA	
				160.3				
SS 19		19-8-10	18		75		**CLAY, silty with sand (CL-ML)** - Very pale brown (10YR 7/2), wet, very stiff, low plasticity, contains shell fragments, +HCL	
				154.8				
SS 20		6-8-12	18		80		**SAND, silty (SM)** - Very pale brown (10YR 7/2), wet, medium dense, fine grained, nonplastic, contains shell fragment and CLAY traces, +HCL	
				149.8				
SS 21		17-43-12	15		85		**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/2), wet, very dense, fine to medium grained, nonplastic, contains shell fragment and cemented SAND grains, +HCL	
SS 22		8-10-26	18		90		SAA except dense	
				139.8				
SS 23		13-35-18	18		95		**CLAY, silty with sand (CL-ML)** - Very pale brown (10YR 8/2), wet, hard, low plasticity, contains shell fragments, +HCL	
				134.8				
SS 24		15-21-32	18		100		**SAND, silty, clayey (SC-SM)** - Very pale brown (10YR 8/2), wet, very dense, non to low plasticity, contains shell fragments, +HCL	
				129.8				
SS 25		14-10-10	14		105		**SAND, with silt (SP-SM)** - Very pale brown (10YR 8/2), wet, medium dense, fine to medium grained, nonplastic, contains shell fragments, +HCL	Installed 3" steel casing to a depth of

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6004**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-6004

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
								105.0 feet
SS 26		8-22-28	10		110		SAA except dense	
SS 27		18-24-26	12		115		SAA	Water level depth at end of 2/22/07 = 47.82 feet
SS 28		8-12-15	8	109.8	120		SAA except medium dense	Water level depth at beginning of 2/23/07 = 53.49 feet
SS 29		8-14-18	16		125		**SAND, silty (SM)** - Very pale brown (10YR 8/2), wet, dense, fine grained, nonplastic, contains shell fragments, +HCL	
SS 30		50/2"	0.1	99.8	130		SAA except cemented	
SS 31		18-16-50/4"	10	94.8	135		**SILT, with sand (ML)** - Greenish gray (GLEY1 6/10GY), wet, hard, nonplastic, contains shell fragments and CLAY traces, +HCL	Top of Blue Bluff Marl at a depth of 136.75 feet
SS 32		16-20-32	18		140		**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/10GY) moist, hard, low plasticity, contains shell fragments, +HCL	
SS 33		50/5"	5		145		SAA	
SS 34		9-16-27	18	81.6	150		SAA Boring terminated at 150.0 feet	Water level depth at end of 2/23/07 = 10.48 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6004**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-6005

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1143718.0 E 619873.8	2/26/2007	2/27/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	178.8

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
242.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			242.6			
SS 1	1-2-3	13			**SAND, with silt (SP-SM)** - Red (2.5YR 4/8), damp, loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	3-3-4	12			SAA	
SS 3	2-3-4	13		5	SAA except red (2.5YR 5/8)	
SS 4	3-3-5	12			SAA	
SS 5	2-3-4	14		10	SAA except strong brown (7.5YR 5/8), moist, fine to medium grained	
SS 6	5-4-5	10			SAA except yellowish red (5YR 5/8)	
SS 7	4-4-7	11		15	SAA except reddish yellow (5YR 6/8), medium dense, fine grained	Installed 3" steel casing to a depth of 13.5 feet
SS 8	4-6-8	8		20	SAA except red (2.5YR 5/6)	
			220.6			
SS 9	5-7-8	9		25	**SAND (SP)** - Reddish yellow (7.5YR 6/8), moist, medium dense, fine grained	
			215.6			
SS 10	5-6-6	8		30	**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), moist, medium dense, fine grained	
			210.6			
SS 11	5-7-9	12		35	**SAND, with clay (SP-SC)** - Brownish yellow (10YR 6/8), moist, medium dense, fine to medium grained	
			205.6			
SS 12	1-2-3	18		40	**CLAY, with sand (CL)** - Pale yellow (2.5Y 7/4), moist, medium stiff, medium to high plasticity, very fine grained SAND, -HCL	
			200.6			
SS 13	2-2-2	18		45	**SAND, clayey (SC)** - Pale yellow (2.5Y 7/4), wet, loose, fine grained, low to medium plasticity, -HCL	
			195.6			
SS	6-9-9	2			**SAND, silty (SM)** - Pale yellow (2.5Y 8/4), wet, medium dense, fine grained, nonplastic.	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6005

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-6005

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14				191.1		-HCL	
SS 15		7-6-18	18	185.6	55	**SAND, clayey (SC)** - Light greenish gray (GLEY1 8/5GY), wet, medium dense, fine grained, medium plasticity, contains trace shell fragments, +HCL	
SS 16		1-3-6	18	180.6	60	**CLAY (CH)** - Light greenish gray (GLEY1 8/5GY), wet, stiff, high plasticity, +HCL	
SS 17		6-7-9	18	175.6	65	**CLAY, sandy (CH)** - Pale yellow (5Y 8/3), wet, very stiff, medium to high plasticity, +HCL	
SS 18		50/4"	4	170.6	70	**SAND, silty (SM)** - Pale yellow (5Y 8/3), wet, very dense, fine grained, contains shell fragments	
SS 19		7-9-12	18		75	**CLAY, with sand (CH)** - Pale yellow (2.5Y 7/4), wet, very stiff, high plasticity, +HCL	
SS 20		9-13-15	18	160.6	80	SAA except pale yellow (2.5Y 7/3), medium plasticity, contains shell fragments	
SS 21		14-15-18	16	155.6	85	**SAND (SP)** - Pale yellow (2.5Y 8/2), wet, dense, fine grained, -HCL	
SS 22		4-5-8	18	150.6	90	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/3), wet, medium dense, fine to medium grained, low to medium plasticity, +HCL	Water level depth at end of 2/26/07 = Top of casing
SS 23		13-8-10	18		95	**SAND, clayey (SC)** - Light greenish gray (GLEY1 8/10Y), wet, medium dense, fine to medium grained, low to medium plasticity, contains shell fragments, +HCL	Water level depth at beginning of 2/27/07 = 33.4 feet
SS 24		6-9-10	18		100	SAA except medium to coarse grained, low plasticity, contains no shells	
SS 25		16-16-20	18		105	SAA except dense, fine to medium grained, contains shell fragments	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6005**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-6005

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	13-50/4"	8		110	SAA except pale yellow (2.5Y 8/4), very dense, nonplastic to low plasticity, contains no shells	
SS 27	10-12-12	16		115	SAA except yellow (2.5Y 8/6), medium dense, fine grained, low to medium plasticity	
			125.6			
SS 28	8-9-21	18		120	**SAND, with clay (SP-SC)** - Yellow (2.5Y 8/6), wet, dense, fine grained, nonplastic, +HCL	
SS 29	11-8-11	18		125	SAA pale yellow (2.5Y 8/4), medium dense, nonplastic to low plasticity	
			115.6			
SS 30	5-11-16	18		130	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/2), wet, medium dense, fine to medium grained, +HCL	
			110.6			
SS 31	8-16-11	18		135	**SAND, clayey (SC)** - Pale yellow (2.5Y 8/4), wet, medium dense, fine to medium grained, medium plasticity, +HCL	
SS 32	20-19-20	18		140	SAA except pale yellow (2.5Y 8/3), dense, low plasticity, contain shell fragments	
			100.6			
SS 33	9-35-22	12		145	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/2), wet, very dense, fine to medium grained, contains shell fragments	
			95.1			
SS 34	15-26-36	18		150	**CLAY (CH)** - Dark greenish gray (GLEY1 4/10GY), wet, hard, high plasticity, +HCL	Top of Blue Bluff Marl at a depth of 147.5 feet
SS 35	20-20-21	18		155	SAA	
SS 36	10-20-38	18		160	SAA except dark greenish gray (GLEY1 6/10GY), contains trace shell fragments	
SS	20-25-50/5"	17			SAA except dark greenish gray (GLEY1	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6005**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 4 OF 4	HOLE NO. B-6005

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
37						165		5/10GY), contains no shells	
					75.6				
SS 38			50/3"	2		170		**SILT (ML)** - Greenish gray (GLEY1 5/5GY), wet, hard, nonplastic, contains cementation, +HCL	
					70.6				
SS 39			16-18-50/3"	15		175		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/5GY), wet, hard, high plasticity, +HCL	
					65.6				
SS 40			50/3"	3	63.8			**SILT (ML)** - Greenish gray (GLEY1 5/10GY), wet, hard, nonplastic, contains cementation, +HCL Boring terminated at 178.75 feet	

SITE	Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. B-6005

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6006

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1143069.8 E 620301.8	3/13/2007	3/13/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
248.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			248.2			
SS 1	1-2-4	8	246.8		**SAND, clayey (SC)** - Yellowish red (5YR 5/6), damp, loose, fine grained	Top of Fill at a depth of 0.0 feet
SS 2	7-8-9	14			**SAND, silty (SM)** - Reddish brown (5YR 4/4), damp, medium dense, fine to coarse grained	
SS 3	7-6-5	16		5	SAA SAA except light yellowish brown (2.5Y 6/4), contains CLAY seams	
SS 4	6-11-13	14	240.2		SAA except strong brown (7.5YR 5/8), fine grained	
SS 5	5-6-8	15		10	**SAND, silty, clayey (SC-SM)** - Yellowish red (5YR 4/6), damp, medium dense, fine grained	
SS 6	3-5-7	14			SAA	
SS 7	3-3-2	8		15	SAA except fine and coarse grained	
SS 8	1-4-8	10	226.2	20	SAA except reddish brown (2.5YR 5/4), fine to very coarse grained	
SS 9	5-9-14	13		25	**SAND, silty (SM)** - Brownish yellow (10YR 6/6), damp, medium dense, fine grained, contains GRAVEL layer	
			221.2			Top of Barnwell Group at a depth of 27.0 feet
SS 10	3-5-6	15		30	**SAND, silty, clayey (SC-SM)** - Red (2.5YR 4/8), damp, medium dense, fine grained	Loss of circulation at a depth of 30.0 feet
			216.2			
SS 11	6-9-10	16		35	**SAND, silty (SM)** - Red (2.5YR 5/6), damp, medium dense, fine grained	
			211.2			
SS 12	3-4-6	18		40	**SAND, silty, clayey (SC-SM)** - Red (2.5YR 5/8), damp, medium dense, fine to medium grained	
			206.2			
SS 13	7-10-11	15		45	**SAND, silty (SM)** - Yellow (2.5Y 7/6), damp, medium dense, fine grained, contains CLAY seams	
			201.2			
SS	2-4-6	12	198.2		**CLAY, silty (CL-ML)** - Brownish yellow (10YR 6/6), damp, stiff, low to medium	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6006

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6006

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								plasticity, -HCL Boring terminated at 50.0 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6006

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6007

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142730.7 E 620301.8	3/1/2007	3/6/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Rosser-MACTEC	CME-75	4 Inches	219907	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
222.3	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			222.3		
SS 1	5-8-6	11	220.8	**GRAVEL, with sand (GP)** - Dark grayish brown (10YR 4/2), moist, medium dense	Top of Fill at a depth of 0.0
SS 2	7-4-7	5.5		**SAND (SP)** - Yellowish red (5YR 5/8) and red (10R 4/6), moist, medium dense, fine to medium grained.	Top of Barnwell Group at a depth of 1.5 feet
SS 3	24-11-15	4		SAA except reddish yellow (7.5YR 6/8), fine grained	
SS 4	8-6-5	15		SAA except yellowish red (5YR 5/8)	
			214.3		
SS 5	6-10-9	14		**SAND, clayey (SC)** - Yellowish red (5YR 5/8) and strong brown (7.5YR 5/8), moist, medium dense, fine to medium grained	
SS 6	16-14-14	18		SAA except mottled red (2.5YR 4/8), strong brown (7.5YR 5/8), and brownish yellow (10YR 6/8)	Water level depth at end of 3/2/07= Ground surface
SS 7	4-6-14	15		SAA except contains white (10YR 8/1) to light gray (10YR 7/1) CLAY seams	Water level depth at end of 3/5/07= Ground surface
SS 8	5-9-11	11	202.7	SAA except yellowish red (5YR 5/8), medium to coarse grained	Water level depth at beginning of 3/6/07= 1.0 feet
				SAND (SP) - Reddish yellow (7.5YR 6/8), moist, medium dense, medium to coarse grained	
SS 9	6-9-8	11		SAA except reddish yellow (7.5YR 6/6), contains black manganese staining	
			195.3		
SS 10	4-8-8	18	192.8	**CLAY, silty (CL-ML)** - Yellow (2.5Y 7/6), moist, very stiff, low to medium plasticity, contains thin reddish yellow (2.5YR 6/8) SAND lenses	
			190.3	**SAND, silty (SM)** - Brownish yellow (10YR 6/8), moist, medium dense, medium grained	
SS 11	3-4-5	18		**SILT, sandy (ML)** - Yellow (10YR 7/8), moist, stiff, nonplastic to low plasticity, fine grained SAND	
SS 12	3-4-5	18		SAA except red (2.5YR 5/8) and yellowish red (5YR 5/8)	
SS 13	4-5-6	18		SAA except olive yellow (2.5Y 6/6), contains shell fragments, -HCL	
			175.3		
SS	3-4-27	18	173.1	**SILT (ML)** - Pale yellow (5Y 7/3), moist, stiff, low plasticity, -HCL	
			172.3		

DEPTH IN FT: 5, 10, 15, 20, 25, 30, 35, 40, 45

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6007

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-6007

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								**SILT, sandy (ML)** - Pale yellow (5Y 8/3), moist, hard, contains cemented shell fragments, +HCL Boring terminated at 50.0 feet	

	SITE	HOLE NO.
	Vogtle Units 3 & 4 COL Project **Final Log**	B-6007

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-6008

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1145443.8 E 622676.4	3/6/2007	3/8/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	150.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
240.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			240.1			
SS 1	2-5-9	10			**SAND, with silt (SP-SM)** - Red (10R 5/8), moist, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	4-7-9	11			SAA except light red (2.5YR 7/6)	
			236.9			
SS 3	2-2-4	18			**CLAY, sandy (CL)** - Bluish gray (GLEY2 6/1), medium stiff, high plasticity	
			234.6	5		
SS 4	5-8-9	16			**SAND, with clay (SP-SC)** - Bluish gray (GLEY2 6/5B), moist, medium dense, fine grained	
			232.1			
SS 5	3-6-7	12		10	**SAND, with silt (SP-SM)** - Strong brown (7.5YR 6/8), wet, medium dense	
SS 6	5-7-10	12			SAA except brownish yellow (10YR 6/8), fine grained	
SS 7	8-13-11	12		15	SAA except light brown (7.5YR 6/4)	
SS 8	7-19-11	16		20	SAA except dark olive gray (5Y 3/2)	
SS 9	16-25-27	13		25	SAA except reddish brown (5YR 5/4), very dense	
			213.1			
SS 10	3-5-7	18		30	**CLAY, sandy (CL)** - Yellowish red (5YR 5/8), wet, stiff, high plasticity, fine grained SAND	
			208.1			
SS 11	2-6-9	16		35	**SAND, with clay (SP-SC)** - Strong brown (7.5YR 5/8), wet, medium dense, fine grained, nonplastic to low plasticity	
			203.1			
SS 12	16-35-37	10		40	**SAND, with silt (SP-SM)** - Olive gray (5Y 4/2), wet, very dense, fine grained, -HCL	
SS 13	3-4-6	8		45	SAA except olive gray (5Y 5/2), medium dense, fine to medium grained	
			193.1			
SS	3-4-7	16			**CLAY, with sand (CL)** - Light bluish gray (GLEY2 7/10B), wet, stiff, high plasticity, fine	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6008

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-6008

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14							grained SAND, -HCL	
				188.1				
SS 15		3-4-7	18		55		**CLAY (CL)** - Mottled light bluish gray (GLEY2 7/10B) and light brown, wet, stiff, high plasticity, -HCL	
				183.1				
SS 16		2-4-8	13		60		**CLAY, silty (CL-ML)** - Pale yellow (2.5Y 8/4), wet, stiff, high plasticity, -HCL	
				178.1				
SS 17		2-4-5	16		65		**CLAY, sandy (CL)** - Brownish yellow (10YR 6/6), wet, stiff, high plasticity, fine grained SAND, -HCL	
				173.1				
SS 18		5-5-6	4		70		**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/6), wet, medium dense, fine grained, -HCL	Water level depth at end of 3/6/07= Top of casing
				168.1				
SS 19		3-6-7	8		75		**SAND, with clay (SP-SC)** - Reddish yellow (7.5YR 6/8), wet, medium dense, fine grained, nonplastic to low plasticity, -HCL	Water level depth at beginning of 3/7/07= 31.5 feet
				163.1				
SS 20		2-4-4	9		80		**SAND, clayey (SC)** - Light red (10R 6/8), wet, loose, medium to coarse grained, medium plasticity, -HCL	
				159.1				
SS 21		50/6"	5		85		**SAND, with silt (SP-SM)** - White (5Y 8/1), wet, very dense, fine grained, contains cementation, +HCL	
SS 22		50/3"	1		90		SAA except very fine grained	Installed 3" steel casing to a depth of 88.5 feet
				147.6				Advanced casing to a depth of 91.0 feet Top of Blue Bluff Marl at a depth of 92.5 feet
SS 23		9-12-21	18		95		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/10GY), wet, hard, high plasticity, +HCL	
SS 24		12-18-18	18		100		SAA except contains shell fragments	
SS 25		13-12-19	18		105		SAA except contains no shells	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6008**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-6008

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	13-28-22	10		110		SAA except greenish gray (GLEY1 5/5GY)	
SS 27	☒	23-28-50/5"	18		115		SAA	
SS 28	☒	10-28-50/3"	18		120		SAA except contain trace shell fragments	
SS 29	☒	18-17-24	18		125		SAA except greenish gray (GLEY1 6/10Y), contains no shells	
SS 30	☒	33-35-26	18		130		SAA except contains trace shell fragments	
SS 31	☒	18-22-26	18		135		SAA except greenish gray (GLEY1 5/5G), contains no shells	
				103.1				
SS 32	☒	7-8-14	18		140		**CLAY (CH)** - Greenish gray (GLEY1 5/10GY), wet, very stiff, high plasticity, +HCL	
SS 33	☒	15-18-22	18		145		SAA except hard	
				93.1				
SS 34	☒	10-12-13	18	90.1	150		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10GY), wet, very stiff, high plasticity, +HCL Boring terminated at 150.0 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6008**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6009

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1144773.7 E 621748.2	2/20/2007	2/20/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	Froste XDML	3 Inches	X02958	100.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
246.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			246.0		
SS 1	3-2-2	18		**SAND, with silt (SP-SM)** - Red (2.5YR 5/6), damp, loose, fine grained, nonplastic, -HCL	Top of Barnwell at a depth of 0.0 feet
SS 2	3-2-5	18		SAA except yellowish red (5YR 5/8)	
			242.8		
SS 3	2-2-3	12		**SAND, silty (SM)** - Yellowish red (5YR 5/6), damp, loose, fine grained, nonplastic, -HCL	
SS 4	4-4-6	12		SAA except reddish yellow (5YR 6/8)	
			238.0		
SS 5	4-7-10	18	236.5	**SAND, silty, clayey (SC-SM)** - Reddish yellow (5YR 6/8), moist, medium dense, medium to coarse grained, nonplastic, -HCL	
SS 6	9-12-15	18		**SAND, silty (SM)** - Reddish yellow (5YR 6/2), moist, medium dense, fine grained, nonplastic, -HCL	End logging by L. Davis. Begin logging by M. Herrera.
			233.0		
SS 7	6-9-8	18		SAA except contains CLAY lenses **SAND, clayey (SC)** - Yellowish red (5YR 5/8) and brownish yellow (10YR 6/8), damp, medium dense, medium grained	
			229.0		
SS 8	4-5-6	18		**SILT (ML)** - Pale yellow (5Y 8/3) and brownish yellow (10YR 6/8), moist, stiff, low plasticity	
SS 9	6-12-20	18		SAA except damp, hard	
			220.0		
SS 10	10-12-16	18		**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), damp, very stiff, low plasticity, +HCL	
			215.0		
SS 11	50/3"	0.5		**GRAVEL, clayey (GC)** - Pale yellow (5Y 8/2), wet, very dense, GRAVEL consists of shell fragments	
			209.0		
SS 12	18-35-22	18		**SILT, with gravel (ML)** - Pale yellow (2.5Y 8/4), damp, hard, contains shell fragments, +HCL	
SS 13	24-26-21	15		SAA	
			199.0		
SS	25-22-25	18		**CLAY, silty, gravelly (CL-ML)** - Pale yellow (5Y 8/2), moist, hard, GRAVEL consists of	

Depth in ft: 5, 10, 15, 20, 25, 30, 35, 40, 45

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6009

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-6009

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					shell fragments, +HCL	
			194.0			
SS 15	12-18-19	18		55	**SAND, silty with gravel (SM)** - Pale yellow (5Y 8/2), moist, very dense, fine grained, contains shell fragments, +HCL	
			189.0			
SS 16	8-14-15	13		60	**SAND, clayey with gravel (SC)** - Pale yellow (2.5Y 7/4) to yellow (2.5Y 7/6), and pale yellow (5Y 8/2), moist, medium dense, GRAVEL consists of shell fragments, +HCL	
			184.0			
SS 17	22-22-20	16		65	**CLAY, gravelly (CL)** - Pale yellow (5Y 8/2), moist, hard, GRAVEL consists of shell fragments, +HCL	
SS 18	24-20-35	16		70	SAA except pale yellow (2.5Y 8/4)	
			174.0			
SS 19	15-20-18	18		75	**CLAY, with gravel (CL)** - Yellow (2.5Y 7/6), moist, hard, low plasticity, GRAVEL consists of shell fragments, +HCL	
			169.0			
SS 20	40-18-12	18		80	**SAND, clayey (SC)** - Pale yellow (2.5Y 8/2) and yellow (2.5Y 8/6), moist, medium dense, medium to coarse grained, contains shell fragments, +HCL	
SS 21	13-18-26	18		85	SAA except pale yellow (2.5Y 8/2), dense	
SS 22	8-15-50/1"	13		90	SAA except pale yellow (2.5Y 8/3), very dense, fine to medium grained	
			154.0			Top of Utley Limestone at a depth of 92.0 feet
SS 23	50/1"	0.5		95	**GRAVEL (GP)** - Pale yellow (2.5Y 8/2), moist, very dense, GRAVEL consists of shell fragments, +HCL	
			149.0			Loss of circulation at a depth of 97.0 feet
SS 24	24-24-20	0			**NO RECOVERY**	
			146.0	100	Boring terminated at 100.0 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6009**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 4	B-6010

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1143893.3 E 621059.2	2/28/2007	3/2/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	169.3

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
263.4	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			263.4		
SS 1	1-1-1	12		**SAND, with silt (SP-SM)** - Storong brown (7.5YR 5/8), damp, very loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-1-1	13		SAA	
SS 3	1-1-1	10		SAA except reddish yellow (7.5YR 6/8)	
			5		
SS 4	1-1-3	8		SAA except strong brown (7.5YR 5/8), loose	
			255.4		
SS 5	3-3-5	13		**SAND, with clay (SP-SC)** - Red (10R 4/8), damp, loose, fine grained	
			252.9 10		
SS 6	3-4-4	9		**SAND, with silt (SP-SM)** - Red (10R 4/8), moist, loose, fine grained	
SS 7	4-6-8	10		SAA except yellowish red (5YR 5/6), medium dense	
			15		
SS 8	7-8-9	12		SAA except red (2.5YR 4/8)	Installed 3" steel casing to a depth of 18.5 feet
			20		
SS 9	7-12-11	9		SAA	
			25		
			236.4		
SS 10	5-5-7	14		**SAND, clayey (SC)** - Strong brown (7.5YR 5/8), moist, medium dense, fine grained, low plasticity	
			30		
			231.4		
SS 11	5-8-6	7		**SAND, with silt (SP-SM)** - Reddish yellow (7.5YR 6/8), wet, medium dense, fine to medium grained	
			35		
SS 12	3-4-6	8		SAA except reddish yellow (7.5YR 7/8), -HCL	
			40		
			221.9		
SS 13	2-3-4			**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 8/10Y), wet, medium stiff, medium to high plasticity, +HCL	
			45		
			216.4		
SS	2-4-8	18		**CLAY, silty with sand (CL-ML)** - Light greenish gray (GLEY1 8/10Y), wet, stiff, high	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6010

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 4	B-6010

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14							plasticity, +HCL	
				211.4				
SS 15		12-18-17	18		55		**CLAY (CH)** - Greenish gray (GLEY1 5/10GY), wet, hard, high plasticity, +HCL	
				206.4				
SS 16		6-9-11	18		60		**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 8/10Y), wet, very stiff, medium plasticity, +HCL	
SS 17		50/3"	1		65		SAA except hard, nonplastic	
				196.4				
SS 18		17-19-24	18		70		**CLAY, with sand (CL)** - Pale yellow (2.5Y 8/4), wet, hard, medium plasticity, medium to coarse grained SAND, +HCL	
				191.4				
SS 19		12-15-20	18		75		**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/2), wet, dense, fine grained, nonplastic, contains shell fragments, +HCL	
SS 20		11-25-36	18		80		SAA except pale yellow (2.5Y 8/4), very dense, fine to medium grained, contains no shell fragments	
				181.4				
SS 21		27-19-26	18		85		**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/4), wet, dense, fine to medium grained, nonplastic, +HCL	
SS 22		18-13-14	18		90		SAA except pale yellow (2.5Y 8/3), medium dense, fine grained	Water level depth at end of 2/28/07 = Top of casing
				171.4				
SS 23		8-13-11	16		95		**SAND, clayey (SC)** - Very pale brown (10YR 8/4), wet, medium dense, fine to medium grained, nonplastic to low plasticity, contains trace shell fragments, +HCL	Water level depth at beginning of 3/1/07 = 42.4 feet
SS 24		7-9-7	18		100		SAA	
				161.4				
SS 25		7-10-12	18		105		**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/3), wet, medium dense, fine grained, contains trace shell fragments, +HCL	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6010**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 4	B-6010

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	4-6-18	14		110	SAA except very pale brown (10YR 8/4), fine to medium grained, contains no shell fragments	
SS 27	12-14-17	16		115	SAA except very pale brown (10YR 8/2), dense	
			146.4			
SS 28	9-8-50/6"	18		120	**SAND, clayey (SC)** - Pale yellow (2.5Y 8/4), wet, very dense, fine to medium grained, nonplastic to low plasticity, contains shell fragments, +HCL	
			141.4			
SS 29	15-50/3"	9		125	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/4), wet, very dense, contains shell fragments, +HCL	
			136.9			Top of Blue Bluff Marl at a depth of 126.5 feet
SS 30	5-6-15	18		130	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/5GY), wet, very stiff, high plasticity, +HCL	
SS 31	15-40-42	18		135	SAA except greenish gray (GLEY1 6/5GY), hard, nonplastic to high plasticity, contain cementation	
SS 32	10-17-27	18		140	SAA except greenish gray (GLEY1 6/10GY), high plasticity	Water level depth at end of 3/1/07 = Top of casing
			121.4			
SS 33	12-16-50/4"	10		145	**CLAY, with sand (CL)** - Greenish gray (GLEY1 6/10GY), wet, hard, medium to high plasticity, very fine grained SAND, +HCL	Water level depth at beginning of 3/2/07 = 33.2 feet
SS 34	10-16-29	18		150	SAA	
			111.4			
SS 35	10-15-22	18		155	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 6/5GY), wet, hard, high plasticity, +HCL	
SS 36	50/3"	3		160	SAA except nonplastic, contains cementation	
SS	50/4"	4			SAA	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6010**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 4 OF 4	HOLE NO. B-6010

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
37						165			
SS 38	☒		▲ 11-50/4"	5	94.1			SAA except greenish gray (GLEY1 6/10GY), high plasticity Boring terminated at 169.33 feet	

SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6010

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-6011

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Herrera	N 1144557.9 E 621261.7	2/22/2007	2/22/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Burnett-Gregg Drilling	Froste XDML	4 Inches	X02958	120.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
244.0	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			244.0			
SS 1	2-1-1	18	242.5		**SAND (SP)** - Light yellowish brown (10YR 6/4), damp, very loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-4-3	14			**SAND, with silt (SP-SM)** - Red (2.5YR 5/6) and pink (5YR 7/4), damp, loose, fine grained	
SS 3	2-3-5	13	238.5	5	SAA except reddish yellow (5YR 6/6), wet	
SS 4	9-12-13	18			**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), yellowish red (5YR 5/8), and white (5Y 8/1), moist, medium dense, medium to coarse grained	
SS 5	6-10-10	16		10	SAA except reddish yellow (5YR 6/8), coarse grained	
SS 6	5-6-7	12	231.0		SAA	
SS 7	5-5-7	15		15	**CLAY (CL)** - Yellowish red (5YR 5/8), yellow (10YR 7/8), and pale yellow (5Y 8/3), damp, stiff, low plasticity	
			227.0			
SS 8	2-4-4	18		20	**SAND, clayey (SC)** - Yellow (2.5Y 7/6), moist, loose, contains CLAY lenses	
SS 9	2-3-3	18	220.0	25	SAA except pinkish gray (7.5YR 6/2), fine grained	
			217.0		**CLAY, silty (CL-ML)** - Pale yellow (5Y 8/3), moist, medium stiff, low plasticity, -HCL	
SS 10	11-14-14	18		30	**SILT (ML)** - Pale yellow (5Y 8/4), damp, very stiff, low plasticity, contains shell fragments, +HCL	
SS 11	6-7-10	18		35	SAA except pale yellow (5Y 8/3)	
			207.0			Loss of circulation at a depth of 37.0 feet
SS 12	32-28-28	18		40	**GRAVEL, clayey (GC)** - Pale yellow (5Y 8/2), damp, very dense, contains shell fragments, +HCL	Installed 4" steel casing to a depth of 40.0 feet
			202.0			
SS 13	13-20-25	15		45	**CLAY, gravelly (CL)** - Yellow (2.5Y 7/6), damp, hard, contains shell fragments, +HCL	
			197.0			
SS	7-12-27	16			**SILT (ML)** - Pale yellow (5Y 8/2), damp, hard, +HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-6011

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-6011

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14			192.0			
SS 15	16-22-16	18		55	**CLAY, silty (CL-ML)** - Pale yellow (5Y 8/3), damp, hard, contains shell fragments, +HCL	
SS 16	12-14-18	18	182.0	60	SAA	
SS 17	14-20-22	11	177.0	65	**SAND (SP)** - Pale yellow (5Y 8/3), damp, dense, fine to medium grained, +HCL	
SS 18	18-32-24		172.0	70	**GRAVEL, with clay (GP-GC)** - Pale yellow (5Y 8/3), moist, very dense, +HCL	
SS 19	32-32-26	18		75	**SAND, clayey with gravel (SC)** - Pale yellow (2.5Y 7/4) and yellow (2.5Y 7/6), moist, very dense, contains shell fragments, +HCL	
SS 20	14-17-18	16		80	SAA except dense	
SS 21	13-15-17	17		85	SAA	
SS 22	20-35-18	9	152.0	90	SAA except very dense	Top of Utley Limestone at a depth of 92.0 feet
SS 23	50/3"	0		95	**NO RECOVERY**	
SS 24	50/1"	0	142.0	100	**NO RECOVERY**	
SS 25	50/1"	0.25	137.0	105	**GRAVEL (GP)** - Pale yellow (2.5Y 8/2), wet, very dense, GRAVEL consists of shell fragments	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6011**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 3 OF 3	HOLE NO. B-6011

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	☒	▲	15-50/3"	9		110		**SILT, clayey (CL-ML)** - Greenish gray (GLEY1 6/1 to GLEY1 5/1), damp, hard, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 107.0 feet
SS 27	☒	▲	16-22-24	18		115		SAA	
SS 28	☒	▲	25-30-45	11	124.0	120		SAA Boring terminated at 120.0 feet	

SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6011

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-6012

LOGGED BY	COORDINATES	BEGUN	COMPLETED
D. Atkinson	N 1144256.7 E 620480.5	3/5/2007	3/6/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	120.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
194.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			194.2			
SS 1	WOH/18"	10			**SAND, with silt (SP-SM)** - Dark gray (5YR 4/1), damp, very loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	WOH/18"	12			SAA except brown (7.5YR 4/4)	
SS 3	2-2-2	10		5	SAA except light brown (7.5YR 6/4), moist	
SS 4	2-3-3	9			SAA except yellow (10YR 7/6), loose	
SS 5	4-5-5	12	183.7	10	SAA except reddish yellow (7.5YR 6/8), wet, medium dense	
SS 6	2-2-3	9	181.2		**SAND, with clay (SP-SC)** - Reddish yellow (7.5YR 7/8), wet, loose, fine grained, nonplastic to low plasticity	
SS 7	2-3-3	9		15	**SAND, clayey (SC)** - Yellow (10YR 7/8), wet, loose, fine grained, medium plasticity	
SS 8	1-2-3	12		20	SAA except light gray (10YR 7/2), high plasticity	
SS 9	1-2-3	10	167.2	25	SAA except pale yellow (2.5Y 7/4), medium to high plasticity	
SS 10	1-3-3	7	162.2	30	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/4), wet, loose, fine grained	
SS 11	2-3-3	9	157.2	35	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 7/4), wet, loose, fine grained, low to medium plasticity	
SS 12	WOH/18"	13	152.2	40	**SILT, with sand (ML)** - Pale yellow (5Y 7/3), wet, very soft, nonplastic, -HCL	
SS 13	WOH/18"	10	148.2	45	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/4), wet, very loose, fine to medium grained, -HCL	
SS	8-22-15	18			**SAND, clayey (SC)** - Pale yellow (2.5Y 8/3), wet, dense, fine to medium grained, medium	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6012

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-6012

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14					plasticity, +HCL	
			142.2			
SS 15	11-16-17	16		55	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/3), wet, dense, fine to medium grained, nonplastic to low plasticity, contains shell fragments, +HCL	
SS 16	15-9-7	15		60	SAA except pink (7.5YR 8/3), medium dense, nonplastic, contains no shell fragments	Installed 3" steel casing to a depth of 58.5 feet
			132.2			
SS 17	5-7-12	18		65	**CLAY, silty (CL-ML)** - Light greenish gray (GLEY1 8/10Y), wet, very stiff, high plasticity, +HCL	
			127.2			
SS 18	12-16-30	16		70	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/4), wet, dense, fine to medium grained, -HCL	
SS 19	9-11-15	18		75	SAA except pale yellow (2.5Y 7/4), medium dense, fine grained	
			117.2			
SS 20	14-15-25	18		80	**SAND, with clay (SP-SC)** - Pale yellow (2.5Y 8/3), wet, dense, fine to medium grained, nonplastic, contains trace shell fragments, +HCL	
			112.2			Top of Utley Limestone at a depth of 82.0 feet
SS 21	50/4"	4		85	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 8/3), wet, very dense, fine to medium grained, nonplastic, contains cementation, +HCL	
SS 22	50/2"			90	SAA	
SS 23	21-50/5"	8		95	SAA except pale yellow (2.5Y 8/4), contains shell fragments	
			97.7			Top of Blue Bluff Marl at a depth of 96.5 feet
SS 24	18-50/4"	10		100	**CLAY, silty (CL-ML)** - Greenish gray (GLEY1 5/10GY), wet, hard, high plasticity, +HCL	Water level depth at end of 3/5/07 = Top of casing
SS 25	16-18-28	18		105	SAA except greenish gray (GLEY1 6/10GY), contains shell fragments	Water level depth at beginning of 3/6/07 = 59.2 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6012**

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-6012

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26	X	▲	15-24-28	18		110		SAA except greenish gray (GLEY1 5/10GY)	
SS 27	X	▲	11-18-26	18		115		SAA except contains no shell fragments	
SS 28	X	▲	14-16-32	18	74.2	120		SAA	
								Boring terminated at 120.0 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project Final Log	B-6012

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6013

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1143169.5 E 617234.9	3/21/2007	3/21/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
251.1	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			251.1			
SS 1	WOH/6"-1-1	18			**SAND, with silt (SP-SM)** - Yellow (10YR 7/6), damp, very loose, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-1-1	18			SAA	
SS 3	1-2-1	14		5	SAA except reddish yellow (7.5YR 7/6)	
SS 4	2-3-4	14	243.1		SAA except yellow (2.5Y 7/6), loose	
SS 5	6-9-14	18		10	**SAND, clayey (SC)** - Yellowish brown (10YR 5/6), damp, medium dense, low plasticity, -HCL	Installed 3" steel casing to a depth of 10.0 feet
SS 6	7-10-12	17	238.1		SAA except yellow (2.5Y 7/6)	
SS 7	5-3-9	14		15	**SAND, silty, clayey (SC-SM)** - Yellow (2.5Y 7/8), damp, medium dense, low plasticity, -HCL	
SS 8	5-6-7	14		20	SAA except brownish yellow (10YR 6/8), moist	
SS 9	4-4-6	16		25	SAA except reddish yellow (7.5YR 7/6)	
SS 10	4-6-7	15		30	SAA except reddish yellow (7.5YR 7/8)	
SS 11	4-4-6	13		35	SAA	
SS 12	4-5-6	18		40	SAA except gray (10YR 5/1)	
SS 13	3-3-5	14		45	SAA except mottled dark gray, reddish yellow, and white	
			204.1			
SS	7-8-12	12	201.1		**SAND, silty (SM)** - Yellowish red (5YR 5/6), moist, medium dense, low plasticity, -HCL	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6013

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6013

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								Boring terminated at 50.0 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6013

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6014

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1143168.2 E 618281.5	3/26/2007	3/26/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
209.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			209.8			
SS 1	2-2-2	18			**SAND, clayey (SC)** - Red (10R 4/6) and yellowish red (5YR 5/6), moist, very loose to loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	2-2-3	14			SAA exept dark red (10R 3/6) and dark gray (7.5YR 4/1), loose	
SS 3	4-4-4	13			SAA except red (10R 4/6)	
			204.3	5		
SS 4	3-5-9	17			**CLAY, sandy (CL)** - Red (2.5YR 4/8) and yellowish red (5YR 5/8), moist, stiff, low plasticity, fine grained SAND	Installed 3" steel casing to a depth of 5.0 feet
SS 5	5-6-7	17			SAA except medium grained SAND	
			199.3	10		
SS 6	4-2-3	10			**SAND, clayey (SC)** - Red (2.5YR 4/8) and dark yellowish brown (10YR 4/1), moist, loose, fine to medium grained	
			196.8			
SS 7	2-1-1	13		15	**SILT, sandy (ML)** - Red (2.5YR 4/8) and olive brown (2.5Y 4/3), moist, very soft to soft, low plasticity, fine to medium grained SAND	
			192.8			
SS 8	2-1-3	13		20	**SAND, silty (SM)** - Dark grayish brown (2.5Y 4/2), moist, very loose to loose, fine grained, contains shell fragments and cemented shell hash	
SS 9	11-22-30	13		25	SAA except dark gray (2.5Y 4/1), very dense, medium grained, contains black manganese staining and no shells	
SS 10	3-3-4	11		30	SAA except loose	
			177.8			
SS 11	2-1-2	18		35	**SILT (ML)** - Black (2.5Y 1), moist, soft, contains abundant organics	
SS 12	1-1-1	18		40	SAA except very soft to soft	
			167.8			
SS 13	4-10-21	13		45	**SAND, with silt (SP-SM)** - Gray (2.5Y 6/1), moist, dense, fine to very coarse grained, rounded, -HCL	
			162.8			
SS	3-3-6	18	159.8		**CLAY, with sand (CL)** - Pale olive (5Y 6/4) and brownish yellow (10YR 6/8), moist, stiff.	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6014

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6014

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								fine grained SAND, -HCL Boring terminated at 50.0 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6014

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6015

LOGGED BY	COORDINATES	BEGUN	COMPLETED
L. Davis	N 1143166.3 E 619317.9	3/21/2007	3/21/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.5	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.5		
SS 1	WOH/6"-1-1	18	220.0	**SAND, with silt (SP-SM)** - Light red (2.5YR 6/8), damp, loose, nonplastic, -HCL	Top of Barnwell Group at a depth of 0.0 feet
SS 2	4-6-10	15		**SAND, silty (SM)** - Light red (2.5YR 6/8), damp, medium dense, nonplastic, -HCL	
SS 3	3-3-5	11		SAA except reddish brown (2.5YR 5/4), moist, loose	
SS 4	2-3-3	12		SAA except reddish yellow (5YR 6/8)	
SS 5	2-2-4	11		SAA except yellowish red (5YR 5/6)	
			211.0		Installed 3" steel casing to a depth of 10.0 feet
SS 6	4-7-9	12	208.5	**SAND, with silty clay (SP-SC)** - Yellowish red (5YR 5/8), moist, medium dense, low plasticity, -HCL	
SS 7	8-8-9	14		**SAND, silty, clayey (SC-SM)** - Yellowish red (5YR 5/8), moist, medium dense, low plasticity, -HCL	
			204.5		
SS 8	6-7-8	12		**SAND, with silty clay (SP-SC)** - Yellowish red (5YR 5/8), moist, medium dense, low plasticity, -HCL	
			199.5		
SS 9	2-7-9	18	197.5	**CLAY (CL)** - Yellow (10YR 7/8), moist, very stiff, low plasticity, -HCL	
			194.5	**SAND, silty, clayey (SC-SM)** - Reddish yellow (5YR 7/6), moist, medium dense, low plasticity, -HCL	
SS 10	4-4-5	16		**SAND, clayey (SC)** - Yellow (10YR 7/6), moist, loose, low plasticity, -HCL	
			189.5		
SS 11	1-3-4	18		**CLAY (CL)** - Very pale brown (10YR 8/4), moist, loose, medium plasticity, -HCL	
			184.5		
SS 12	2-3-3	16		**SAND, silty, clayey (SC-SM)** - Yellow (10YR 7/6), moist, loose, low plasticity, -HCL	
			179.5		
SS 13	1-2-21	16		**CLAY (CH)** - Very pale brown (10YR 7/3), moist, very stiff, medium to high plasticity, -HCL	
			175.5		
SS	3-5-4	11	171.5	**SAND, clayey (SC)** - Pale yellow (2.5Y 7/4), moist, loose, low plasticity, +HCL	

DEPTH IN FT: 5, 10, 15, 20, 25, 30, 35, 40, 45

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6015

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-6015

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								Boring terminated at 50.0 feet	

	SITE	HOLE NO.
	Vogtle Units 3 & 4 COL Project Final Log	B-6015

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6018

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142909.3 E 618366.6	3/26/2007	3/26/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
204.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			204.7			
SS 1	WOH/12"-1	18	203.2		**SAND, with clay (SP-SC)** - Yellowish red (5YR 4/6) and dark reddish gray (5YR 4/2), moist, very loose, fine grained, contains organics	Top of Barnwell Group at a depth of 0.0 feet
SS 2	WOH/6"-1-1	15			**SAND, silty (SM)** - Yellowish red (5YR 4/6), moist, very loose, fine grained	
SS 3	2-2-3	15		5	SAA except loose	
SS 4	2-3-4	14			SAA	
SS 5	4-4-4	14		10	SAA except fine to medium grained	
SS 6	4-5-6	13			SAA except medium dense	Installed 4" steel casing to a depth of 10.0 feet
SS 7	7-9-9	14		15	SAA	
SS 8	5-5-6	12.5		20	SAA except micaceous	
SS 9	4-5-5	14.5		25	SAA except brownish yellow (10YR 6/8), loose to medium dense	
SS 10	3-2-4	15		30	SAA except yellowish brown (10YR 5/8), loose	
			172.7			
SS 11	3-2-5	18	169.4	35	**CLAY (CL)** - Yellow (2.5Y 7/5) and yellowish brown (10YR 5/8), moist, medium stiff, low to medium plasticity, contains SAND lenses, -HCL	
UD 1		24			**SILT, with sand (ML)** - Pale yellow, low to medium plasticity, fine grained SAND Pocket Penetrometer: 1.5 TSF	Direct Push
			166.7			
SS 12	3-4-5	18		40	**SAND, silty (SM)** - Brownish yellow (10YR 6/8), moist, loose, medium grained, contains kaolinitic CLAY seams	
			162.7			
SS 13	2-2-2	18	159.4	45	**SILT (MH)** - Pale yellow (5Y 7/3), moist, soft to medium stiff, medium to high plasticity, contains SAND lenses, -HCL	
UD 2		24			**SILT, sandy (ML)** - Yellow, fine to medium grained Pocket Penetrometer: 1.5 TSF	Direct Push
			156.7			
SS	2-4-5	18	154.7		**SILT, with sand (ML)** - Pale yellow (5Y 7/3), moist, stiff, low to medium plasticity, fine	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6018

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6018

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								\grained SAND, -HCL / Boring terminated at 50.0 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6018

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6019

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1142132.7 E 618344.5	3/28/2007	3/28/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
163.9	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			163.9			
SS 1	2-1-2	18			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/6), damp, very loose, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	1-1-2	18			SAA	
			160.7			
SS 3	2-4-6	13		5	**CLAY, sandy (CL)** - Yellowish red (5YR 5/8), damp, stiff, low plasticity	Installed 4" steel casing to a depth of 3.5 feet
UD 1		24			SAA	Direct Push
			156.2			
SS 4	3-5-6	18		10	**SAND, clayey (SC)** - Yellowish red (5YR 5/8), damp, medium dense, fine grained	
SS 5	3-2-5	16			SAA except brownish yellow (10YR 6/6), loose	
			150.9			
SS 6	2-4-5	16		15	**CLAY, with sand (CL)** - Yellow (2.5Y 8/6), damp, stiff, low plasticity	
UD 2		24			SAA	Direct Push
			145.9			
SS 7	2-3-3	17		20	**SAND, with clay (SP-SC)** - Yellow (2.5Y 7/8), damp, loose, fine grained	
			141.9			
SS 8	3-3-5	18		25	**SAND, clayey (SC)** - Yellow (2.5Y 7/6), damp, loose, fine grained	
			136.9			
SS 9	3-4-4	16		30	**SAND, silty (SM)** - Pale yellow (2.5Y 7/4), damp, loose, fine grained	
			131.9			
SS 10	2-3-3	18		35	**SAND, clayey (SC)** - Yellow (2.5Y 7/6), damp, loose, fine grained	
			126.9			
SS 11	3-3-3	18		40	**SAND, with silt (SP-SM)** - Pale yellow (5Y 8/3), moist, loose, fine grained	
SS 12	2-2-2	18		45	SAA except contains CLAY seams	
SS	7-8-11	7	113.9		SAA except pale yellow (5Y 8/2), medium dense, fine to coarse grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6019

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6019

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
13								Boring terminated at 50.0 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6019

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-6020

LOGGED BY	COORDINATES	BEGUN	COMPLETED
S. Woodham	N 1142634.0 E 619555.9	3/28/2007	4/2/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	130.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
221.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			221.5			
SS 1	4-5-5	16	220.0		**SAND, with silt (SP-SM)** - Yellowish red (5YR 5/8), damp, medium dense, fine grained	Top of Fill at a depth of 0.0 feet.
SS 2	5-5-5	18	218.5		**SAND, clayey (SC)** - Yellowish red (5YR 5/6) to red (10R 4/8), damp, medium dense, fine to medium grained	
SS 3	3-6-8	14		5	**SAND, with silt (SP-SM)** - Weak red (10R 4/3), damp, medium dense, fine grained	Top of Barnwell Group at a depth of 3.0 feet
SS 4	10-11-11	14			SAA except red (2.5YR 5/8)	Installed 4" steel casing to a depth of 5.0 feet.
SS 5	2-2-4	16	211.0	10	SAA except loose	
SS 6	3-5-4	14			**SAND, silty, clayey (SC-SM)** - Yellowish brown (10YR 5/6), damp, loose, fine grained	
SS 7	5-4-5	14	204.5	15	SAA	
SS 8	9-14-20	16		20	**SAND, with silt (SP-SM)** - Very dark gray (2.5Y 3/1), damp, very dense, fine grained	
SS 9	2-4-3	8		25	SAA except yellowish brown (10YR 5/4), loose	
SS 10	3-5-7	7		30	SAA except strong brown (7.5YR 5/6), medium dense	
SS 11	7-10-15	8	184.5	35	SAA except yellow (10YR 7/8)	
SS 12	6-7-10	7	179.5	40	**SAND, with silty clay (SP-SC)** - Brownish yellow (10YR 6/6), medium dense, fine grained	
SS 13	9-15-14	7	174.5	45	**SAND, with silt (SP-SM)** - Light olive brown (2.5Y 5/6), medium dense, fine grained	Water level depth at end of 3/28/07 = Top of casing
SS	3-3-4	18			***SAND, silty (SM)** - Olive yellow (2.5Y 6/6), damp, loose, low plasticity, -HCL	Water level depth at beginning of 3/29/07

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6020

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-6020

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14 UD 1		22.5			SAA Pocket Penetrometer: 1.0 TSF	= 45.0 feet Direct Push
SS 15	2-3-3	18		55	SAA except pale olive (5Y 6/3)	
SS 16	2-3-5	18		60	SAA except olive yellow (2.5Y 6/6)	
UD 2		22.5			SAA Pocket Penetrometer: 1.5 TSF	Direct Push
SS 17	1-2-4	18		65	SAA except pale yellow (5Y 8/3)	
			154.5			
SS 18	3-5-7	16		70	**SAND, silty, clayey (SC-SM)** - Yellow (5Y 7/8), damp, medium dense, fine grained, -HCL	
SS 19	2-3-3	18		75	SAA except yellow (5Y 7/8) and yellowish brown (10YR 5/6)	
			144.5			
SS 20	3-4-7	14		80	**SAND, clayey (SC)** - Pale yellow (5Y 8/2), moist, medium dense, fine to coarse grained, contains shell fragments, +HCL	Changed to a 2 7/8" drill bit.
SS 21	10-10-13	16		85	SAA	
SS 22	5-9-16	18		90	SAA except damp	
SS 23	7-7-4	15		95	SAA	
			124.5			
SS 24	6-10-10	5		100	**SAND, with silt (SP-SM)** - Yellow (5Y 8/6), moist, medium dense, fine to medium grained, +HCL	
SS 25	14-19-22			105	SAA except yellow (10YR 7/6)	
			114.5			

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6020**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	3 OF 3	B-6020

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
SS 26		10-8-9	10		110		**SAND (SP)** - Yellow (10YR 7/6), moist, medium dense, fine to medium grained, contains thin CLAY seams	
				109.5				Loss of circulation at a depth of 111.0 feet Top of Utley Limestone at a depth of 112.0 feet
SS 27		50/4"	4		115		**SAND, with clay and gravel (SP-SC)** - Pale yellow (2.5Y 8/3), damp, very dense, fine to coarse grained, contains shell fragments, +HCL	
SS 28		3-3-50/3"	12		120		SAA	
				99.5				Water level depth at end of 3/29/07 = Borehole dry Top of Blue Bluff Marl at a depth of 122.0 feet
SS 29		3-19-50/5.5"	17.5		125		**SILT (ML)** - Dark greenish gray (GLEY1 4/5GY), damp, hard, contains trace shell fragments and cementation, +HCL	Water level depth at beginning of 4/2/07 = 110.0 feet Installed 3" steel casing to a depth of 123.5 feet.
SS 30		8-32-24	18				SAA except contains less cementation	Changed to a 2 7/8" drill bit.
				91.5	130		Boring terminated at 130 feet	

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6020**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 3	B-6021

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142185.7 E 619103.4	4/3/2007	4/4/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	120.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
209.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			209.8		
SS 1	5-8-10	9	208.3	**SAND, silty (SM)** - Red (5YR 5/8) and yellowish red (5YR 5/8), moist, medium dense, fine grained	Top of Barnwell Group at a depth of 0.0 feet
SS 2	8-9-10	18	206.6	**SAND, clayey (SC)** - Yellowish brown (10YR 5/8) and red (2.5YR 5/8), moist, medium dense, fine to medium grained	
SS 3	8-12-12	13	204.3	**SAND, with silt (SP-SM)** - Olive (5Y 5/4) and dark gray (5Y 4/1), moist, medium dense, fine to medium grained	Installed 4" steel casing to a depth of 5.0 feet.
SS 4	5-6-8	13		**SAND, clayey (SC)** - Dark red (10R 3/6) and weak red (10R 4/3), moist, medium dense, fine grained	
SS 5	5-7-11	16		SAA except some yellowish red (5YR 5/8)	
SS 6	3-5-6	15	197.8	SAA except red (2.5YR 4/8)	
SS 7	3-4-5	13		***SAND, silty (SM)** - Yellowish red (5YR 5/8), moist, loose, fine to medium grained	
SS 8	3-4-4	13		SAA except contains some cementation	
SS 9	8-13-15	14	182.8	SAA except light olive brown (2.5Y 5/4) and yellowish red (5YR 5/8), medium dense	
SS 10	4-4-4	14	177.8	**SAND, clayey (SC)** - Yellowish red (5YR 5/8) and red (10R 3/4), moist, loose, fine grained	
SS 11	6-10-13	13	172.8	**SAND, silty (SM)** - Dark red (10R 3/6), moist, medium dense, fine to medium grained	
SS 12	3-6-8	8	167.8	**SAND, with silt (SP-SM)** - Dark red (10R 3/6), red (2.5YR 4/8 & 5/8), and strong brown (7.5YR 5/6), moist, medium dense, fine to medium grained	
SS 13	4-3-4	10	162.8	**SAND, clayey (SC)** - Strong brown (7.5YR 5/8), moist, loose, fine to medium grained	
SS	3-4-5	9		**SAND, silty (SM)** - Dark gray (7.5YR 4/1), moist, loose, fine to medium grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6021

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 3	B-6021

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14						
SS 15	2-2-3	6	152.8	55	SAA except dark grayish brown (10YR 4/2) to brown (10YR 4/3), medium grained	
SS 16	2-3-5	16	147.8	60	**SAND, clayey (SC)** - Yellowish brown (10YR 5/8) and yellowish red (5YR 5/6), moist, loose, medium grained	
SS 17	16-16-20	13	142.8	65	**SAND, silty (SM)** - Strong brown (7.5YR 5/8), moist, dense, medium grained	
SS 18	4-4-5	15	137.8	70	**SAND, clayey (SC)** - Yellowish brown (10YR 5/8), yellowish red (5YR 5/8), light yellowish brown (2.5Y 6/4), and gray (2.5Y 6/1), moist, loose, medium to coarse grained	
SS 19	2-2-3	18		75	**SILT, with sand (ML)** - Yellowish brown (10YR 5/8), pale yellow (5Y 7/4), and reddish yellow (7.5YR 6/8), moist, medium stiff, nonplastic to low plasticity, very fine to fine grained SAND, -HCL	
UD 1		24	131.8		SAA except pale yellow (5Y 7/4) and reddish yellow (7.5YR 6/8)	Direct Push
SS 20	2-2-2	18		80	Pocket Penetrometer: 2.75 TSF **SILT, sandy (ML)** - Pale yellow (5Y 7/4), moist, soft to medium stiff, nonplastic to low plasticity, very fine to fine grained SAND, -HCL	Reamed hole to a depth of 75.5 feet using a 3 7/8" drill bit. Resumed drilling with the 2 7/8" drill bit.
SS 21	5-7-8	12	127.8	85	**SAND, with silt (SP-SM)** - Pale yellow (2.5Y 7/3), moist, medium dense, medium grained, -HCL	
SS 22	5-9-12	12	122.8	90	**SAND, silty (SM)** - Pale yellow (5Y 7/3), moist, medium dense, fine to medium grained, -HCL	Water level depth at end of 4/3/07 = 10.0 feet
SS 23	4-5-10	17		95	SAA except, wet	Water level depth at beginning of 4/4/07 = 45.0 feet
SS 24	50/1"	0	112.8	100	**NO RECOVERY**	Top of Utley Limestone at a depth of 97.0 feet
SS 25	50/1.5"	1	107.8	105	**SAND, silty (SM)** - Pale yellow (2.5Y 8/3), wet, very dense, contains very coarse shell fragments and abundant cementation, +HCL	Loss of circulation at a

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6021**

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 3 OF 3	HOLE NO. B-6021

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
								depth of 106.0 feet
SS 26	▲	10-6-8		101.1			SAA	
					110		**SILT (ML)** - Pale olive (5Y 6/4), damp to moist, nonplastic to low plasticity, contains trace shell fragments and olive yellow (5Y 6/8) SAND lenses, +HCL	Installed 3" steel casing to a depth of 113.0 feet
				96.8				
SS 27	▲	12-17-37	18		115		**CLAY, silty (CL-ML)** - Dark greenish gray (GLEY1 4/10Y), damp, hard, low plasticity, +HCL	Top of Blue Bluff Marl at a depth of 113.0 feet
SS 28	▲	12-17-17	18	89.8	120		SAA except contains abundant shell fragments	
							Boring terminated at 120 feet	

SITE	Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6021

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6022

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1142224.8 E 620040.3	4/9/2007	4/9/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	90.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
216.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			216.2			
SS 1	6-6-4	18	215.4		**GRAVEL, with sand (GP)** - Light brownish gray (10YR 6/2), damp, loose to medium dense, contains organics	Top of Fill at a depth of 0.0 feet
SS 2	6-19-22	18	214.7		**SAND, clayey (SC)** - Red (2.5YR 4/8), damp to moist, loose to medium dense, fine grained	
SS 3	8-13-13	13	210.7	5	**SAND, with silt (SP-SM)** - Strong brown (7.5YR 4/6), moist, dense, fine grained SAA except medium dense	Installed 4" steel casing to a depth of 5.0 feet.
SS 4	4-5-5	11			**SAND (SP)** - Strong brown (7.5YR 5/8), moist, loose to medium dense	
SS 5	3-4-4	9	205.7	10	SAA except strong brown (7.5YR 5/8) to light yellowish brown (10YR 6/4), loose, fine to medium grained	Top of Barnwell Group at a depth of 10.5 feet
SS 6	4-7-11	13			**SAND, clayey (SC)** - Yellowish brown (10YR 5/8), yellowish red (5YR 5/8), and trace gray (10YR 5/1), moist, medium dense, fine to medium grained	
SS 7	6-10-11	15		15	SAA except red (2.5YR 4/8), fine grained	
SS 8	8-12-13	15		20	SAA except red (2.5YR 4/8) and brownish yellow (10YR 6/8), medium grained	
			194.2			
SS 9	10-16-20	9		25	**SAND, with silt (SP-SM)** - Reddish yellow (5YR 6/6), moist, dense, medium to coarse grained, contains black manganese staining	
			189.2			
SS 10	6-7-8	11		30	**SAND, silty (SM)** - Brownish yellow (10YR 6/8) and yellowish red (5YR 5/8), moist, medium dense, fine grained, contains CLAY seams, -HCL	
SS 11	4-4-6	10		35	SAA except light yellowish brown (2.5Y 6/4), fine to medium grained, slightly micaceous	
SS 12	3-4-5	15	176.0	40	SAA except olive yellow (2.5Y 6/6), loose, low plasticity, very fine grained, contains black manganese staining	
UD 1		21	173.2		**SILT, with sand (ML)** - Olive yellow (2.5Y 6/6), moist, stiff, low plasticity, very fine grained SAND Pocket Penetrometer: 1.5 TSF	Direct Push
SS 13	6-4-5	15		45	***SAND, clayey (SC)** - Yellowish brown (10YR 5/8), moist, loose to medium dense, low plasticity, contains shell fragments and CLAY seams, -HCL	
SS	3-4-5	15			SAA except olive yellow (2.5Y 6/8)	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6022

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-6022

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14 UD 2		22.5			SAA Pocket Penetrometer: 1.25 TSF	Direct Push
SS 15	3-5-8	14		55	SAA except medium grained	
			159.2			
SS 16	4-4-4	16		60	**SAND, silty (SM)** - Olive yellow (2.5Y 6/8), moist, loose, fine to medium grained, -HCL	
			154.2			
SS 17	5-4-6	10		65	**SILT, sandy (ML)** - Olive yellow (2.5Y 6/8), moist, stiff, low plasticity, fine to medium grained SAND, contains shell fragments	
			149.2			
SS 18	2-3-3	13	147.2	70	**SAND, silty (SM)** - Yellow (5Y 7/6), moist, loose, medium to coarse grained **SILT, sandy (ML)** - Yellow (5Y 7/6), moist, medium stiff, low plasticity, fine grained SAND, -HCL	Changed to a 2 7/8" drill bit.
			144.2			
SS 19	3-3-3	14		75	**SAND, silty (SM)** - Pale yellow (2.5Y 7/4), moist, loose, medium grained, contains trace shell fragments	Loss of circulation at a depth of 75.0 feet
			139.2			
SS 20	WOH/12"-2	17	136.4	80	**SILT (ML)** - Olive brown (2.5Y 4/4), moist to wet, very soft, nonplastic, contains cemented shell fragments, -HCL	Top of Utley Limestone at a depth of 79.8 feet
			134.2		**SAND, silty (SM)** - Pale yellow (2.5Y 8/2), contains cemented shell fragments	Top of Blue Bluff Marl at a depth of 82.0 feet
SS 21	10-20-43	18		85	**SILT (ML)** - Dark greenish gray (GLEY1 4/10Y), damp, hard, nonplastic to low plasticity, contains cementation, +HCL	Installed 3" steel casing to a depth of 83.5 feet. Water level depth at end of 4/9/07 = 10.0 feet
SS 22	9-25-23	18	126.2	90	SAA except less cementation Boring terminated at a depth of 90 feet	Water level depth at beginning of 4/10/07 = 50.0 feet

SITE	HOLE NO.
Vogtle Units 3 & 4 COL Project **Final Log**	**B-6022**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6023

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1141553.1 E 619177.9	4/4/2007	4/5/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
202.8	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			202.8			
SS 1	1-1-1	16			**SAND (SP)** - Strong brown (7.5YR 5/8), damp, moist, very loose, fine to medium grained, contains organics	Top of Fill at a depth of 0.0 feet
SS 2	1-1-1	10			SAA	
			199.5			
SS 3	2-1-2	11			**SAND, silty (SM)** - Yellowish red (5YR 5/8), damp to moist, very loose, fine to medium grained	
			197.3	5		Installed 4" steel casing to a depth of 10.0 feet.
SS 4	2-2-3	9			**SAND, clayey (SC)** - Red (2.5YR 4/8), damp to moist, loose, fine to medium grained	
			194.3			
SS 5	4-3-5	13			**SAND, clayey (SC)** - Yellowish red (5YR 5/8), damp to moist, loose, fine grained	Top of Barnwell Group at a depth of 8.5 feet
				10		
SS 6	6-7-8	11			SAA except medium dense, fine to coarse grained	
SS 7	6-7-7	13			SAA except fine to medium grained	
				15		
			185.8			
SS 8	9-11-11	13			**SAND, silty (SM)** - Yellowish red (5YR 5/8) and brownish yellow (10YR 6/8), moist, medium dense, medium to coarse grained	
				20		Water level depth at end of 4/4/07 = Ground surface
			180.8			
SS 9	5-5-7	15			**SAND, clayey (SC)** - Strong brown (7.5YR 5/8), moist, medium dense, medium grained	Water level depth at beginning of 4/5/07 = 15.0 feet
				25		
			175.8			
SS 10	5-5-6	14			**SAND, silty (SM)** - Yellow (10YR 7/8), moist, medium dense, fine grained	
				30		
UD 1		20			SAA Pocket Penetrometer: 4.5 TSF	Changed from a 2 7/8" to a 3 7/8" drill bit. Direct Push
SS 11	5-7-9	15			SAA except medium grained	
				35		
			165.8			
SS 12	5-3-5	15			**SILT, sandy (ML)** - Pale yellow (2.5Y 7/4) and yellowish brown (10YR 5/8), moist, medium stiff to stiff, nonplastic to low plasticity, contains shell fragments and fine grained SAND lenses, -HCL	
				40		
UD 2		19				Direct Push
			159.8		SAA Pocket Penetrometer: 1.5 TSF	
SS 13	6-7-7	12			**SAND, silty (SM)** - Yellow (10YR 7/8), moist, medium dense, medium to coarse grained, -HCL	
				45		
			155.8			
SS	3-2-4	15			**SILT, sandy (ML)** - Yellow (2.5Y 7/6), moist, medium stiff, fine to medium grained.	
			152.8			

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6023

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6023

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								nonplastic to low plasticity, contains shell fragments and black manganese staining, -HCL Boring terminated at 50 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6023

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6024

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1141545.9 E 619997.7	4/6/2007	4/6/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
216.1	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			216.1			
SS 1	13-12-8	16	215.3		**GRAVEL (GP)** - Dark gray (7.5YR 4/1), damp, medium dense	Top of Fill at a depth of 0.0 feet
SS 2	13-9-4	10	212.6		**SAND, clayey (SC)** - Red (2.5YR 4/8), damp to moist, medium dense, fine grained SAA	
SS 3	3-4-4	13		5	**SAND, clayey (SC)** - Red (2.5YR 4/8), damp to moist, loose, fine to medium grained	Top of Barnwell Group at a depth of 3.5 feet
SS 4	5-7-9	13			SAA except medium dense	Installed 4" steel casing to a depth of 5.0 feet
SS 5	6-8-7	15	205.6	10	SAA	
SS 6	6-7-7	17			**SAND, silty (SM)** - Red (2.5YR 4/6), moist, medium dense, fine to medium grained	End logging by S. Woodham. Begin logging by B. Sharp.
SS 7	5-7-8	13		15	SAA except red (2.5YR 4/8), fine grained	
SS 8	6-7-8	12		20	SAA except red (10R 4/8)	
SS 9	6-7-7	11		25	SAA except red (10R 4/8) and (7.5YR 5/8), coarse grained	
SS 10	8-9-12	8	184.1	30	SAA except contains some brownish yellow (10YR 6/8), medium to coarse grained	
SS 11	5-6-9	12		35	**SILT, sandy (ML)** - Yellow (10YR 7/8) and yellowish brown (10YR 5/8), moist, stiff to very stiff, low plasticity, contains thin fine to medium grained SAND lenses, -HCL	
UD 1		11.5			SAA Pocket Penetrometer; 2.25 TSF	Direct Push
SS 12	6-5-6	15		40	SAA except brownish yellow (10YR 6/8), stiff, contains black manganese staining	
SS 13	4-11-6	18		45	SAA except very stiff, medium grained	
UD 2		23	169.6		SAA Pocket Penetrometer: <0.25 TSF	Direct Push
SS	3-3-4	17	168.1 167.1 166.1		**SAND, silty (SM)** - Brownish yellow (10YR 6/8), moist, medium dense, medium grained, -HCL **CLAY (CL)** - Brownish yellow (10YR 6/8),	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	B-6024

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6024

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								moist, medium stiff, low plasticity, contains fine grained SAND seams, -HCL **SILT, sandy (ML)** - Olive yellow (2.5Y 6/6), moist, medium stiff, low plasticity, fine to medium grained SAND, -HCL Boring terminated at 50 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6024

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6025

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1140518.7 E 619189.7	4/5/2007	4/5/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
172.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			172.7			
SS 1	10-14-12	18	171.2		**SAND, clayey (SC)** - Red (2.5YR 5/8), damp, medium dense, medium grained	Top of Fill at a depth of 0.0 feet
SS 2	10-11-12	14	169.4		**SAND, clayey (SC)** - Reddish yellow (5YR 6/8) and red (2.5YR 5/8), damp, medium dense, medium grained	Top of Barnwell Group at a depth of 1.5 feet
SS 3	6-9-9	18	167.2	5	**SAND, silty (SM)** - Yellowish red (5YR 5/8), moist, medium dense, medium grained	Installed 4" steel casing to a depth of 5.0 feet
SS 4	12-17-21	17	164.7		**SAND, with silt (SP-SM)** - Red (2.5YR 5/6), moist, dense, medium grained, contains abundant black manganese staining	
SS 5	7-7-6	16	163.2		**SAND, clayey (SC)** - Brownish yellow (10YR 6/8), moist, medium dense, medium grained	
SS 6	5-6-6	18	162.2	10	**CLAY, silty (CL-ML)** - Brownish yellow (10YR 6/8), moist, stiff, low to medium plasticity, -HCL	
SS 7	4-6-7	13	159.7		**SAND, silty (SM)** - Yellow (10YR 7/8), moist, medium dense, fine to medium grained, contains shell fragments, -HCL	
			155.7	15	**SAND (SP)** - Yellow (10YR 7/8), moist, medium dense, fine grained, contains trace black manganese staining, -HCL	
SS 8	3-4-7	18		20	**SILT, sandy (ML)** - Yellow (10YR 7/8), moist, stiff, nonplastic to low plasticity, contains shell fragments, -HCL	
UD 1		14			SAA Pocket Penetrometer: <0.25 TSF	Direct Push
			149.7			
SS 9	2-2-2	18		25	**SAND, silty (SM)** - Reddish yellow (7.5YR 6/5), moist to wet, very loose to loose, fine grained, -HCL	
			145.7			
SS 10	2-2-3	18		30	**SILT, sandy (ML)** - Reddish yellow (7.5YR 6/8) and gray (2.5Y 6/1), moist to wet, medium stiff, nonplastic to low plasticity, fine grained SAND, -HCL	
			140.7			
SS 11	3-3-7	18		35	**SAND, silty (SM)** - Yellow (2.5Y 7/6) and dark bluish gray (GLEY2 4/10Y), wet, loose to medium dense, medium grained, -HCL	
SS 12	1-1-1	16		40	SAA except pale yellow (5Y 8/3) and dark bluish gray (GLEY2 4/10B), very loose, fine to medium grained, contains shell fragments, -HCL	Changed to a 2 7/8" drill bit.
SS 13	17-49-10	17	128.2	45	SAA except pale yellow (5Y 8/3), wet, very dense, contains large shell fragments, +HCL	
			125.7		**SILT (ML)** - Pale yellow (5Y 7/3), moist, hard, low plasticity, +HCL	Top of Still Branch Formation at 47.0 feet
SS	18-26-26	18	122.7		**SILT(ML)** - Dark greenish gray (GLEY1 4/10GY), damp, hard, nonplastic to low	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6025

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-6025

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								plasticity, contains shell fragments and cementation Boring terminated at 50 feet	

	SITE	HOLE NO.
	Vogtle Units 3 & 4 COL Project Final Log	B-6025

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6026

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1140537.7 E 619900.2	4/10/2007	4/10/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
215.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			215.5		
SS 1	5-5-4	13	214.5	**GRAVEL, with sand (GP)** - Dark gray (5YR 4/1), damp, loose, contains organics	Top of Fill at a depth of 0.0 feet
SS 2	5-9-10	18	214.0	**SAND (SP)** - Yellowish red (5YR 5/8) and yellow (2.5Y 7/6), damp, loose, fine to medium grained	Top of Barnwell Group at a depth of 1.0 feet
SS 3	4-3-4	11	212.2	**SAND, clayey (SC)** - Red (2.5YR 4/8) and yellowish brown (10YR 5/8), damp, medium dense, medium grained	Installed 4" steel casing to a depth of 5.0 feet
SS 4	4-6-7	11	5	**SAND (SP)** - Strong brown (7.5YR 5/8) and reddish yellow (7.5YR 6/8), damp to moist, loose, fine to medium grained	
SS 5	4-7-8	11		SAA except yellow (10YR 7/8) and yellowish red (5YR 5/8), moist, medium dense, medium grained	
SS 6	6-9-10	10	10	SAA except pale yellow (2.5Y 8/4) and some yellowish red (5YR 5/8), fine to medium grained	
SS 7	6-6-9	9		SAA except fine grained SAA except red (2.5YR 4/6) and some yellow (10YR 7/6)	
			15		Reamed hole with a 3 7/8" drill bit and resumed drilling with the 2 7/8" drill bit
			198.5		
SS 8	5-8-8	9	20	**SAND, silty (SM)** - Dusky red (10R 3/4) to dark red (10R 3/6), moist, medium dense, fine grained	
SS 9	5-10-11	11	25	SAA except dusky red (10R 3/4) to yellow (10YR 7/8), medium to coarse grained	
			188.5		
SS 10	5-8-10	8.5	30	**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/8), moist, medium dense, fine to medium grained	
SS 11	6-8-9	10	35	SAA except reddish yellow (5YR 6/6) and yellowish brown (10YR 5/8), moist, medium dense, medium grained, contains trace black manganese staining	
SS 12	5-10-18	10	40	SAA except yellow (10YR 7/8)	
			173.5		
SS 13	4-4-5	15	45	**SAND, clayey (SC)** - Brownish yellow (10YR 6/8) and reddish yellow (5YR 6/6), moist, loose, medium grained, contains trace black manganese staining	
			168.5		
SS	10-9-16	12	166.0 / 165.5	**SAND, with silt (SP-SM)** - Strong brown (7.5YR 5/8) to reddish yellow (7.5YR 7/8),	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6026

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6026

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								moist, medium dense, fine to medium grained **SAND, clayey (SC)** - Reddish yellow (7.5YR 7/8), moist, medium dense, fine to medium grained, contains black manganese staining Boring terminated at 50 feet	

	SITE Vogtle Units 3 & 4 COL Project **Final Log**	HOLE NO. **B-6026**

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6027

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1145779.4 E 626145.1	4/17/2007	4/17/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	75.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
96.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			96.7			
SS 1	3-6-7	4			**SAND, with gravel (SP)** - Dark yellowish brown (10YR 3/4), damp, medium dense, fine to medium grained, angular GRAVEL	Top of Fill at a depth of 0.0 feet
			91.7	5		
SS 2	1-1-1	5			**SAND, with silt (SP-SM)** - Dark yellowish brown (10YR 4/6), moist to wet, very loose, fine to medium grained	
SS 3	2-2-3	3			SAA except yellowish brown (10YR 5/6), wet, loose, fine grained	
SS 4	3-1-2	4		10	SAA except dark yellowish brown (10YR 4/6), moist, very loose, fine to medium grained	
			84.7			
SS 5	1-1-1	4			***SAND, with silt and gravel (SP-SM)** - Dark yellowish brown (10YR 4/6), moist, very loose, fine to medium grained	
			82.2	15		
SS 6	5-3-1	6			**SAND, silty (SM)** - Yellowish brown (10YR 5/6), moist, very loose, fine to medium grained	
			78.7			
						Top of Alluvium at a depth of 18.0 feet
SS 7	1-2-2	12		20	**SAND, silty (SM)** - Gray (10YR 5/1), moist to wet, very loose, fine grained	Installed 3" steel casing to a depth of 20.0 feet
SS 8	4-6-8	18		25	SAA except contains medium dense SILT seams	
			69.7			
						Advanced casing to a depth of 27.0 feet
SS 9	6-8-7	12		30	**SAND, silty with gravel (SM)** - Dark gray (10YR 4/1), medium dense, fine grained	
			63.2			
SS 10	6-8-9	12		35	***SAND, silty (SM)** - Very dark greenish gray (GLEY1 3/10Y), moist, medium dense, fine to medium grained	Top of Still Branch Formation at a depth of 33.5 feet
			59.7			
SS 11	14-17-18	12		40	***SAND, with silt (SP-SM)** - Very dark greenish gray (GLEY1 3/10Y), moist, dense, fine to medium grained	
SS 12	10-12-14	10		45	SAA except medium dense, coarse grained	
SS	5-5-7	18			SAA except greenish black (GLEY1 2.5/10Y), moist to wet, fine grained	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6027

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6027

▲ N-VALUE (SPT)
○ WATER CONTENT %
+ ATT. LIMITS %
□ FINES %
20 40 60 80

SAMP. TYPE AND NO.	SAMPLE	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
13				44.7				
SS 14	☒	8-11-11	18		55		***SAND, silty (SM)** - Greenish gray (GLEY1 5/10Y), wet, medium dense, fine grained, slightly micaceous	
SS 15	☒	10-14-16	18		60		SAA	
				34.7				
SS 16	☒	5-11-19	18		65		***SAND, with silt (SW-SM)** - Greenish black (GLEY1 2.5/10Y), moist to wet, dense, medium grained	
SS 17	☒	14-17-18	18		70		SAA	
SS 18	☒	9-9-11	18	21.7	75		SAA except greenish gray (GLEY1 6/10GY), medium dense Boring terminated at 75 feet	

SITE	Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6027

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6028

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1145611.4 E 626062.4	4/16/2007	4/16/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	3 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
95.7	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			95.7			
SS 1	3-12-23	6			**GRAVEL, with sand (GP)** - Strong brown (7.5YR 4/6), moist, dense, medium to coarse grained SAND	Top of Fill at a depth of 0.0 feet
SS 2	16-50/5"	3			SAA except gray (10YR 5/1), moist, very dense	
			92.5			
SS 3	12-19-25	12		5	***SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/4) and strong brown (7.5YR 5/6), moist, dense, fine grained	
SS 4	13-20-27	12			SAA except brown (10YR 5/3), fine to medium grained	
SS 5	16-24-30	14		10	SAA except yellowish brown (10YR 5/4), very dense	
SS 6	12-18-25	14			SAA except yellowish brown (10R 5/8), dense	
			82.7			
SS 7	10-16-17	12		15	**GRAVEL, with sand (GP)** - Olive gray (5Y 5/2), moist, dense	Loss of circulation at a depth of 15.0 feet
			77.2			
SS 8	3-3-4	15		20	***SILT (ML)** - Olive gray (5Y 4/2), moist, medium stiff, low plasticity, -HCL	Top of Alluvium at a depth of 18.5 feet
			73.7			
SS 9	4-7-6	12		25	**SAND (SP)** - Dark gray (5Y 4/1), moist to wet, medium dense, coarse grained	Installed 3" steel casing to a depth of 25.0 feet
SS 10	2-2-3	12		30	SAA except loose, medium to coarse grained	
SS 11	2-3-4	12		35	SAA except very dark gray (5Y 3/1), wet, contains black manganese staining	
SS 12	3-4-4	12		40	SAA except dark gray (2.5Y 4/1) and light brownish gray (2.5Y 6/2), coarse grained	
SS 13	4-3-4	12		45	SAA except light brownish gray (2.5Y 6/2)	
			48.7			
SS	4-5-5	12	45.7		***SAND, with silt (SW-SM)** - Grayish brown (2.5Y 5/2), wet, loose to medium dense, coarse	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6028

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	2 OF 2	B-6028

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								to very coarse grained Boring terminated at 50 feet	

	SITE	HOLE NO.
	Vogtle Units 3 & 4 COL Project Final Log	B-6028

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6029

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1147771.7 E 623966.6	4/12/2007	4/12/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
85.4	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			85.4			
SS 1	WOH/6"-1-1	7.5	83.9		**SILT (ML)** - Dark brown (7.5YR 3/4), moist, soft, fine grained, contains organics	Top of Alluvium at a depth of 0.0 feet
SS 2	WOH/18"	0	82.2		**NO RECOVERY**	
SS 3	1-1-1	17	79.9	5	***SAND, clayey (SC)** - Dark greenish gray (GLEY1 4/10Y), moist, very loose, nonplastic to low plasticity, fine grained, contains organics	Installed 4" steel casing to a depth of 5.0 feet and resumed drilling with a 2 7/8" drill bit.
SS 4	WOH/12"-1	17	76.9		**SILT, with sand (ML)** - Dark greenish gray (GLEY1 4/10GY), moist, very soft, nonplastic, fine grained SAND, contains organics, -HCL	
SS 5	WOH/18"	18	74.9	10	***CLAY, sandy (CL)** - Greenish gray (GLEY1 5/5GY), moist to wet, very soft, nonplastic, fine to coarse grained SAND, contains cemented shell fragments, +HCL	
SS 6	30-11-6	15			**SAND, silty (SM)** - Greenish gray (GLEY1 6/5GY), wet, medium dense, contains cemented shell fragments, +HCL	
SS 7	2-1-1	7		15	SAA except very loose	
			68.4			
SS 8	1-2-1	14		20	***CLAY, sandy (CH)** - Dark greenish gray (GLEY1 4/5GY), wet, soft, contains shell fragments, +HCL	
			63.7			
SS 9	1-1-9	15		25	**SILT, sandy (ML)** - Dark gray (GLEY1 4/N) and olive (5Y 5/3), wet, stiff, nonplastic to low plasticity, fine to very coarse grained SAND, contains shell fragments	
			58.7			Top of Still Branch Formation at a depth of 26.7 feet
SS 10	20-23-27	18		30	**SAND, with silt (SP-SM)** - Gray (GLEY1 5/N), wet, dense to very dense, very fine to fine grained, -HCL	
SS 11	39-50/5"	11		35	SAA except gray (GLEY1 5/N) to dark gray (GLEY1 4/N), very dense, fine grained	
SS 12	6-4-6	17		40	SAA except very dark greenish gray (GLEY1 3/5GY), loose to medium dense, medium to coarse grained	
SS 13	6-9-7	15		45	SAA except dark gray (GLEY1 4/N), medium dense, fine grained	
SS	3-4-5	18	35.4		SAA except loose, contains CLAY lenses	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6029

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6029

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								Boring terminated at 50 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6029

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 2	B-6030

LOGGED BY	COORDINATES	BEGUN	COMPLETED
B. Sharp	N 1147588.1 E 624222.6	4/12/2007	4/12/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
White-MACTEC	CME-55	4 Inches	331145	50.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
88.4	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)

SAMP. TYPE AND NO.	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
			88.4			
SS 1	1-1-2	12	86.9		**SAND, with clay (SP-SC)** - Dark reddish brown (2.5YR 3/4), moist, very loose, fine to medium grained, contains organics	Top of Alluvium at a depth of 0.0 feet
SS 2	2-3-4	13	85.1		***CLAY, sandy (CL)** - Brown (7.5YR 5/3), moist, medium stiff, low plasticity, fine to medium grained SAND	
SS 3	2-2-3	16	82.9	5	**SAND, silty (SM)** - Mottled yellowish brown (10YR 5/8) and light gray (10YR 7/1), moist, loose, fine to medium grained	Installed 4" steel casing to a depth of 5.0 feet and resumed drilling with a 2 7/8" drill bit.
SS 4	1-2-2	14			***SAND, clayey (SC)** - Mottled reddish yellow (7.5YR 6/6) and light gray (10YR 7/1), moist, very loose to loose, low plasticity, fine to medium grained	
SS 5	2-1-2	15	77.9	10	SAA except very loose	
SS 6	1-1-2	18	75.4		**SAND, silty (SM)** - Greenish gray (GLEY1 5/5GY), moist to wet, very loose, fine to medium grained, -HCL	
SS 7	1-1-1			15	**NO RECOVERY**	
			71.4			
SS 8	1-1-1	18		20	SAA except very dark gray (GLEY1 3/N), wet, very fine grained, contains organics	
SS 9	1-1-1	18		25	SAA	
SS 10	2-2-2	3		30	SAA	
			56.4			
SS 11	4-8-9	18		35	***SAND, with silt (SP-SM)** - Dark gray (GLEY1 4/N), wet, medium dense, very fine to fine grained, contains wood fragments	
SS 12	5-12-10	17		40	SAA except fine grained	
			46.4			Top of Still Branch Formation at a depth of 42.0 feet
SS 13	3-3-4	18		45	***CLAY, sandy (CH)** - Dark gray (GLEY1 4/N), wet, medium stiff, very fine grained SAND, -HCL	
			41.4			
SS	3-5-8		38.4		**SAND, silty (SM)** - Dark greenish gray (GLEY1 4/10Y), wet, medium dense, medium	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	B-6030

MACTEC

GEOTECHNICAL LOG	PROJECT Vogtle Units 3 & 4 COL Project	JOB NO. 6141-06-0286	SHEET NO. 2 OF 2	HOLE NO. B-6030

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % 20 40 60 80	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
14								to coarse grained Boring terminated at 50 feet	

	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. B-6030

GEOTECHNICAL TEST PIT LOGS

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	TP-B-1108

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1144312.5 E 621145.9	3/29/2007	3/29/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Graves Drilling	CAT 315L	3' x 20'		12.2

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
264.1	▽ / /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					264.1				
					263.6			**TOPSOIL**	Top of Fill at a depth of 0.0 feet
					261.1			**SAND (SP)** - Olive yellow (2.5Y 6/8), moist to damp, fine to medium grained, contains organics	Top of Barnwell Group at a depth of 0.5 feet
						5		**SAND, clayey (SC)** - Mottled red (2.5YR 5/8) and olive yellow (2.5Y 6/8), moist, fine to medium grained	
BK 1		○ □		42	255.6	10		**SAND, silty (SM)** - Red (2.5YR 5/8), moist, fine grained	Sample retrieved from a 20" bucket.
					252.1			Test pit terminated at 12.2 feet	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	TP-B-1108

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	TP-B-1117

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1143967.3 E 621627.5	3/29/2007	3/29/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Graves Drilling	CAT 315L	3' x 20'		9.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
269.5	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					269.5				
					267.5			**SAND, with silt (SP-SM)** - Light red (2.5YR 6/8), damp, fine to medium grained	Edge of landfill pit
					267.0			**TOPSOIL** - Contains organics	Top of Barnwell Group at a depth of 2.0 feet
						5		***SAND, with silt (SP-SM)** - Yellow (10R 7/8), damp, fine grained	
BK 1		①		12					Test pit beginning to cave due to loose SAND
					260.5			Test pit terminated at 9.0 feet due to hole cave in.	Sample retrieved from a 20" bucket.

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	TP-B-1117

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	TP-B-1121

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1143591.7 E 620401.5	3/29/2007	3/29/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Graves Drilling	CAT 315L	3' x 20'		14.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
241.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					241.2				
BK 1				12		5		*SAND, silty (SM) - Brownish yellow (10YR 6/8) and bluish grey (GLEY2 6/5BP), moist, fien to medium grained	Top of Fill at a depth of 0.0 feet
								SAA except wet	
								SAA except contains scattered plastic debris	Sample retrieved from a 20" bucket.
						10			
					229.2			SAND, clayey (SC) - Dark yellowish brown (10YR 4/6), moist to wet, fine to medium grained	
					227.2			Test pit terminated at 14.0 feet	Test pit began caving at a depth of 14.0 feet

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	TP-B-1121

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	TP-B-1125

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1143603.7 E 621685.8	3/29/2007	3/29/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Graves Drilling	CAT 315L	3' x 20'		11.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
240.6	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					240.6				
								SAND, silty (SM) - Red (2.5YR 5/8), damp, fine to medium grained, contains GRAVEL, blocks of cemented Utley Limestone, slab of high strength grout (at a depth of 4.0 feet), plastic and trash	Top of Fill at a depth of 0.0 feet
					235.3	5			
BK 1				36				**SAND, with silt (SP-SM)** - Red (10R 4/8), moist, fine to medium grained	Sample retrieved from a 20" bucket.
						10		SAA except yellow (10YR 6/8)	
					229.6			Test pit terminated at 11.0 feet	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	TP-B-1125

MACTEC

GEOTECHNICAL LOG

PROJECT	JOB NO.	SHEET NO.	HOLE NO.
Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	TP-B-1185

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1144634.2 E 622242.2	3/29/2007	3/29/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Graves Drilling	CAT 315L	3' x 20'		11.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
225.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					225.2				
					224.2			**SAND, with silt (SP-SM)** - Yellowish brown (10YR 5/8), moist, fine to medium grained	Top of Fill at a depth of 0.0 feet
					223.7			**GRAVEL, with silt (GP-GM)**	Top of Barnwell Group at a depth of 1.5 feet
						5		**CLAY, with sand (CL)** - Pale yellow (2.5Y 8/2), moist, fine to medium grained SAND, contains traces of muscaite	
BK 1		+ − ○ □ +		12	219.2			**SILT, with sand (ML)** - Pale yellow (2.5Y 8/2), dry to damp, fine grained SAND	Sample retrieved from a 20" bucket.
						10		SAA except contains slightly inundated layers, laminated structure, and manganese staining along lamination planes	
					214.2			Test pit terminated at 11.0 feet	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project **Final Log**	TP-B-1185

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	TP-B-1194

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1147500.6 E 621708.5	3/29/2007	3/29/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Graves Drilling	CAT 315L	3' x 20'		11.5

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
202.7	/ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					202.7				
					202.2			**TOPSOIL**	Top of Fill at a depth of 0.0 feet Top of Barnwell Group at a depth of 0.5 feet
BK 1				12		5		***SAND, with silt (SP-SM)** - Yellow (10YR 7/6) and very pale brown (10YR 7/3), damp, medium grained contains organics	Sample retrieved from a 20" bucket.
					194.7				
BK 2				42		10		**SAND, silty, clayey (SC-SM)** - Mottled red (2.5YR 5/8) and yellow (10YR 8/8), moist, fine grained	Sample retrieved from a 20" bucket.
					191.2			Test pit terminated at 11.5 feet	

PREPARED BY: A. TAYLOR REVIEWED BY: P. DEPREE	SITE Vogtle Units 3 & 4 COL Project Final Log	HOLE NO. TP-B-1194

MACTEC

GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	TP-B-1195

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1147648.4 E 622363.1	3/29/2007	3/29/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Graves Drilling	CAT 315L	3' x 20'		8.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
212.2	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					212.2				
						5		**SAND (SP)** - Yellow (2.5Y 7/8), damp to dry, fine to medium grained	Top of Barnwell Group at a depth of 0.0 feet
					204.2			Test pit terminated at 8.0 feet	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	TP-B-1195

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GEOTECHNICAL LOG	PROJECT	JOB NO.	SHEET NO.	HOLE NO.
	Vogtle Units 3 & 4 COL Project	6141-06-0286	1 OF 1	TP-B-1197

LOGGED BY	COORDINATES	BEGUN	COMPLETED
M. Cooke	N 1146874.4 E 622074.6	3/29/2007	3/29/2007

DRILLER	DRILL MAKE AND MODEL	HOLE DIAMETER	HAMMER SERIAL NUMBER	TOTAL DEPTH
Graves Drilling	CAT 315L	3' x 20'		11.0

GROUND EL.	DEPTH/EL. GROUND WATER	SITE:
245.9	▽ / ▼ /	Vogtle Electric Generating Plant - Waynesboro, GA

SAMP. TYPE AND NO.	SAMPLE	▲ N-VALUE (SPT) ○ WATER CONTENT % + ATT. LIMITS % □ FINES % (20 40 60 80)	N-COUNT 1st 6" 2nd 6" 3rd 6"	RECOVERY (in)	ELEVATION IN FEET	DEPTH IN FT	GRAPHICS	DESCRIPTION AND CLASSIFICATION (* = field classification adjusted based on laboratory testing data and/or re-examination of sample by field geologist/engineer)	NOTES ON: WATER LEVELS, CHARACTER OF DRILLING AND LABORATORY TESTING
					245.9				
					244.4			**TOPSOIL**	Top of Fill at a depth of 0.0 feet
BK 1				72		5		**SAND, with silt (SP-SM)** - Brownish yellow (10YR 6/8), damp, fine to medium grained, subangular to subrounded	Top of Barnwell Group at a depth of 1.5 feet
								SAA except reddish yellow (5YR 6/8)	Sample retrieved from a 20" bucket.
					234.9	10		Test pit terminated at 11.0 feet	

PREPARED BY: A. TAYLOR	SITE	HOLE NO.
REVIEWED BY: P. DEPREE	Vogtle Units 3 & 4 COL Project Final Log	TP-B-1197

SPT ENERGY RATIO MEASUREMENTS

June 27, 2007

Memorandum to File DCN VGCOL 102
From: Steve Kiser
Reviewed By: Pieter Depree

Subject: **Report of SPT Energy – Gregg Drilling CME 850**
Hammer Serial No. 165592 Automatic Hammer
WORK INSTRUCTION VGCOL 102
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on December 20, 2006, during drilling of Boring B-1185, and on January 17, 2007, during drilling of Boring B-3002A, at the referenced site. The drill rig was retested on January 17 due to a switch in the drilling rod sizes from AW-J to NW-J. The testing was performed from approximately 9:15 to 10:25 AM under sunny skies and a temperature of about 50 degrees Fahrenheit on December 20, and from approximately 8:10 to 8:45 AM under cloudy skies and a temperature of about 40 degrees Fahrenheit on January 17. The boring was drilled with personnel and equipment from Gregg Drilling. The drilling equipment consisted of a CME 850 model ATV-mounted drill rig with an SPT automatic hammer. The drilling tools on consisted of AW-J-sized drilling rods and NW-J sized drilling rods on December 20, 2006 and January 17, 2007, respectively. During drilling on both days, a 2-foot long split tube sampler was used. Mud rotary drilling techniques were used to advance the borings below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Marshall Burnett. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. AW #144/1 and AW #144/2 on December 20, 2006; NW #146/1 and NW#146/2 on January 17, 2007). An AW or NW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

The instrumented AW-sized rod insert had a cross-sectional area of approximately 1.19 square inches and an outside diameter of approximately 1.75 inches at the gage location. The drill rods included in the drill rod string (when drilling with AW-J rods) were hollow rods in 5 to 10 foot

23 Pages Total

long sections, with an outside and inside diameter of approximately 1.75 and 1.375 inches, respectively.

The instrumented NW-sized rod insert had a cross-sectional area of approximately 1.49 square inches and an outside diameter of approximately 2.625 inches at the gage location. The drill rods included in the drill rod string (when drilling with NW-J rods) were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 2.625 and 2.25 inches, respectively.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The range of average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method is shown in Table 1 below for each rod size tested. The corresponding energy transfer ratio of the SPT hammer system is also shown.

Table 1: Average Energy Transfer Range for the Depth Intervals Tested

Rod Size	Range of Average Energy Transferred (foot-pounds)	Range of Average Energy Transfer Ratio (ETR)
AW-J	301 to 315	86% to 90%
NW-J	276 to 277	79%

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall average energy transfer of the SPT system (for all the depth intervals tested) is shown in Table 2 below for each rod size tested.

Table 2: Overall Energy Testing Results for Each Rod Size

Rod Size	Range of Overall Weighted Average Energy Transferred (foot-pounds)	Range of Overall Weighted Average Energy Transfer Ratio (ETR)
AW-J	306.3	87.5%
NW-J	276.5	79.0%
All Rod Sizes (Combined)	291.9	83.4%

Attachments: Page 4 Table 3 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 102 – 1 Page
Pages 6 – 7 Record of SPT Energy Measurement – 2 Pages
Pages 8 - 23 PDIPLOT Output – 16 Pages

TABLE 3
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 and 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

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 (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
165592 (CME 850 ATV)	Gregg Drilling	Marshall Burnett	B-1185 (AW-J Rods)	12/20/2006	73.5 - 75.0	10 - 12 -16	32	304	86.9%
					78.5 - 80.0	50 / 2"	48	301	86.0%
					83.5 - 85.0	8 - 15 - 20	40	315	90.0%
					88.5 - 90.0	15 - 18 - 38	68	306	87.4%
					Weighted Average for AW-J Rods:			306.3	87.5%
			B-3002A (NW-J Rods)	1/17/2007	13.5 - 15.0	12 - 14 - 18	44	277	79.1%
					18.5 - 20.0	12 - 16 - 16	45	277	79.1%
					20.0 - 21.5	15 - 29 - 42	86	276	78.9%
					Weighted Average for NW-J Rods:			276.5	79.0%
						Weighted Average for Rig:		**291.9**	**83.4%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

[b]Energy Transfer Ratio is the Measured Energy divided by the theoretical SPT energy of 350 foot-pounds (140 pound hammer falling 2.5 feet). The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By: GLW	Date: 6-27-07	Checked By: WAL	Date: 7/31/07

Work Instructions – SPT Energy Gregg Drilling CME-850 (Burnett) (Hammer #165592)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 12/20/06

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 12/20/06 To: 12/20/07

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 12/20/06

No. of Pages: 1 DCN: VGCOL 102

MACTEC

2801 YORKMONT ROAD, SUITE 100 O CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME 850
LOCATION:	Waynesboro, Georgia	MODEL:	850 TRACK
PROJECT NO.:	6141-06-0286	SERIAL NO.:	165592
DATE:	12-20-06	HAMMER TYPE:	AUTOMATIC
WEATHER:	SUNNY - COOL 50°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	AW-J
DRILLING COMPANY:	GREGG DRILLING	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-1185		
DEPTH DRILLED:	150'		
TIME DRIVEN:	10:15 AM		
RIG OPERATOR:	MARSHALL BURNETT		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.19 in²		
ACCEL. SERIAL NOS.:	P5094 / P5953		
STRAIN SERIAL NOS.:	144 AW 1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
77.5/75'	10-12-16										
78.5/80'	50/2"										
83.5/85'	8-15-20										
88.5/90'	15-18-50										

REMARKS: - OPERATOR MISSED RECORDING OF LAST SEVERAL BLOWS AT 75' SAMPLE

MACTEC

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RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME
LOCATION:	Waynesboro, Georgia	MODEL:	850 TRACK
PROJECT NO.:	6141-06-0286	SERIAL NO.:	165592
DATE:	1-17-07	HAMMER TYPE:	AUTOMATIC
WEATHER:	CLOUDY; COLD; 40°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	NW-J
DRILLING COMPANY:	GREGG DRILLING	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-3002 A		
DEPTH DRILLED:	30' PLANNED		
TIME DRIVEN:	9:00 AM		
RIG OPERATOR:	MARSHALL BURNETT		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.49 in²		
ACCEL. SERIAL NOS.:	P5094 / P5953		
STRAIN SERIAL NOS.:	146 NW 1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
13.5-15.0	12-14-18										
18.5/20	12-16-16										
20/21.5	15-29-42										

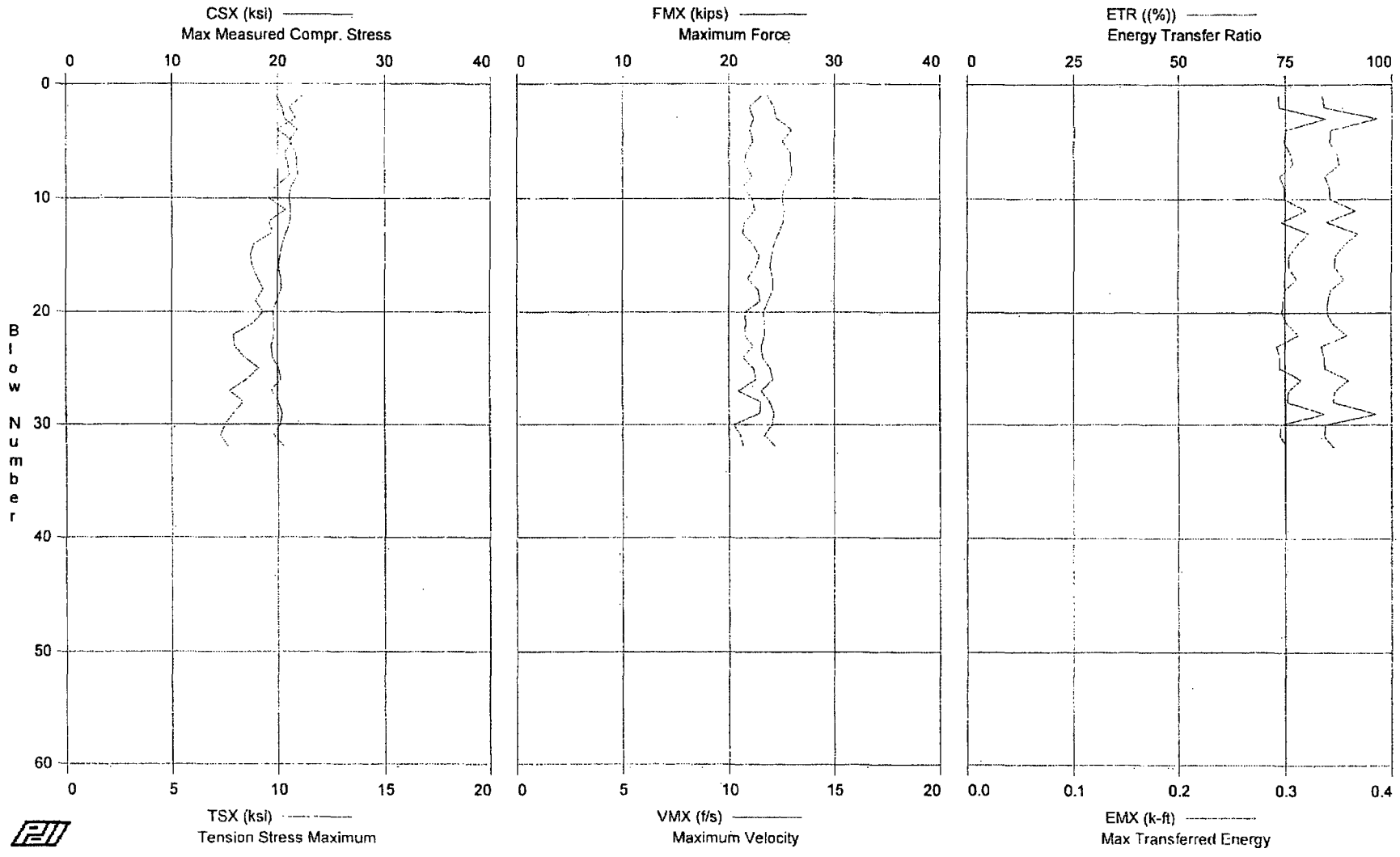
REMARKS: HOLLOW STEM AUGER USED TO ADVANCE HOLE - WATER PUMP BROKEN ON RIG

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 8-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-1185; 73.5' - 75' Sample



MACTEC Engineering and Consulting, Inc.
Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 8-May-2007

Vogtle COL Project - Boring B-1185; 73.5' - 75' Sample
OP: SEK

Rig Serial No. 165592 (Gregg CME 850)
Test date: 20-Dec-2006

AR: 1.19 in^2
LE: 79.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	19.86	11.15	24	11.6	2.46	0.0	0.262	83.7	0.293
2	0.00	20.37	10.55	24	10.9	1.54	52.5	0.262	84.1	0.294
3	0.00	20.58	10.82	24	11.2	1.85	52.9	0.277	96.6	0.338
4	0.00	21.80	9.97	26	11.0	1.25	52.8	0.270	85.6	0.300
5	0.00	21.08	10.72	25	11.1	1.17	53.7	0.264	85.4	0.299
6	0.00	21.74	10.32	26	10.8	1.10	52.3	0.276	87.1	0.305
7	0.00	21.78	10.47	26	10.7	1.67	53.4	0.272	87.7	0.307
8	0.00	21.87	10.54	26	11.1	1.55	52.6	0.268	84.3	0.295
9	0.00	21.22	9.90	25	10.7	1.13	53.7	0.263	85.4	0.299
10	0.00	21.06	9.55	25	11.1	1.39	52.6	0.265	85.5	0.299
11	0.00	21.21	10.37	25	11.2	1.30	53.6	0.274	91.5	0.320
12	0.00	21.16	9.59	25	10.7	1.45	53.1	0.265	84.7	0.296
13	0.00	20.78	9.75	25	10.6	1.60	53.1	0.264	92.0	0.322
14	0.00	20.38	8.85	24	11.1	1.19	53.3	0.262	88.8	0.311
15	0.00	20.18	8.69	24	11.4	1.12	53.2	0.255	86.6	0.303
16	0.00	20.07	8.79	24	11.3	1.20	53.2	0.257	86.6	0.303
17	0.00	20.32	9.05	24	10.9	1.55	53.1	0.258	88.8	0.311
18	0.00	20.34	9.31	24	11.4	0.79	53.0	0.257	85.8	0.300
19	0.00	19.92	8.96	24	11.5	0.83	53.5	0.258	85.1	0.298
20	0.00	19.55	9.30	23	10.8	0.54	53.1	0.256	84.8	0.297
21	0.00	19.64	8.85	23	10.8	0.47	53.1	0.262	86.3	0.302
22	0.00	19.66	7.91	23	10.7	0.87	53.3	0.264	89.5	0.313
23	0.00	19.38	7.95	23	11.2	1.17	53.9	0.248	83.4	0.292
24	0.00	19.48	8.40	23	10.7	1.02	52.5	0.258	84.3	0.295
25	0.00	20.09	9.09	24	11.2	0.78	52.5	0.258	84.3	0.295
26	0.00	20.28	8.53	24	11.3	1.42	52.8	0.261	89.9	0.315
27	0.00	19.38	7.72	23	10.4	0.84	53.1	0.261	86.7	0.303
28	0.00	20.04	8.35	24	11.5	0.55	52.5	0.267	86.2	0.302
29	0.00	20.39	7.89	24	11.4	1.64	53.7	0.263	96.3	0.337
30	0.00	20.24	7.51	24	10.2	0.78	53.3	0.260	84.4	0.296
31	0.00	19.61	7.29	23	10.6	0.82	53.1	0.258	84.1	0.295
32	0.00	20.57	7.65	24	10.7	0.87	52.4	0.264	86.4	0.302
	Average	20.44	9.18	24	11.0	1.18	53.1	0.263	86.9	0.304

Total number of blows analyzed: 32

Time Summary

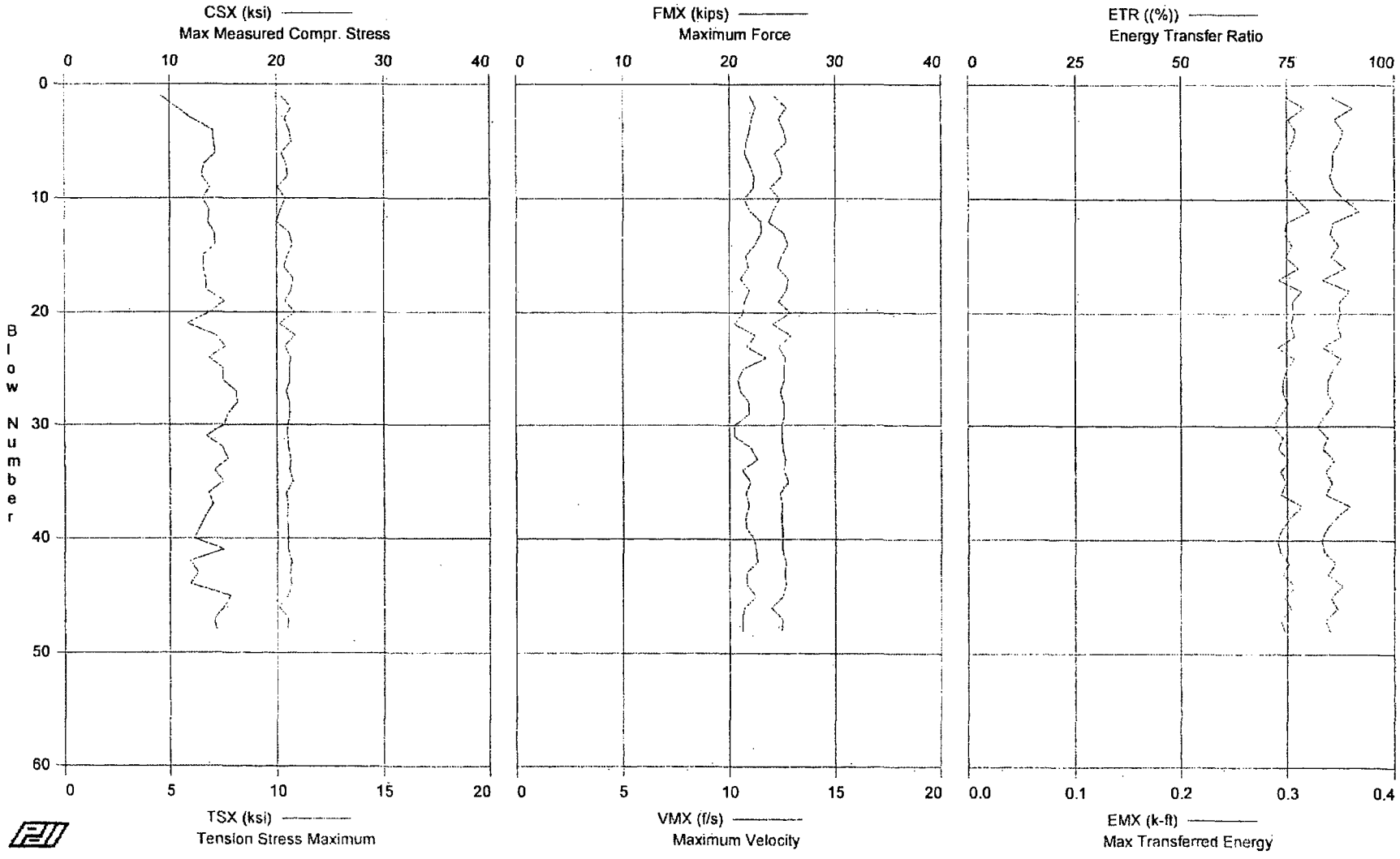
Drive 35 seconds 9:17:12 AM - 9:17:47 AM (12/20/2006) BN 1 - 32

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 8-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-1185; 78.5' - 80' Sample



Vogtle COL Project - Boring B-1185; 78.5' - 80' Sample
OP: SEK

Rig Serial No. 165592 (Gregg CME 850)
Test date: 20-Dec-2006

AR: 1.19 in^2
LE: 84.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	20.40	4.58	24	11.0	0.66	0.0	0.273	85.4	0.299
2	0.00	21.35	5.34	25	11.2	0.84	52.6	0.285	90.3	0.316
3	0.00	20.73	6.01	25	11.1	1.13	54.4	0.264	86.1	0.301
4	0.00	21.14	7.02	25	11.0	1.07	53.0	0.269	88.1	0.308
5	0.00	21.36	7.08	25	10.8	0.71	53.6	0.277	87.3	0.305
6	0.00	20.43	7.14	24	10.7	1.20	52.6	0.270	85.7	0.300
7	0.00	20.87	6.59	25	11.0	1.45	54.3	0.262	85.7	0.300
8	0.00	21.00	6.51	25	11.2	6.81	52.9	0.269	85.1	0.298
9	0.00	20.04	6.87	24	11.1	1.40	53.9	0.000	86.1	0.301
10	0.00	20.79	6.54	25	10.7	2.17	52.9	0.270	88.4	0.310
11	0.00	20.30	6.85	24	10.9	0.13	26.8	0.270	91.8	0.321
12	0.00	19.94	6.78	24	11.5	0.59	53.4	0.268	85.8	0.300
13	0.00	21.16	7.10	25	11.5	1.04	53.8	0.273	85.2	0.298
14	0.00	21.48	7.14	26	11.2	1.33	52.8	0.272	87.2	0.305
15	0.00	20.97	6.57	25	10.8	1.61	53.5	0.267	85.4	0.299
16	0.00	20.65	6.59	25	10.9	2.09	52.4	0.269	88.8	0.311
17	0.00	21.52	6.69	26	10.5	1.15	54.7	0.271	83.3	0.292
18	0.00	21.35	6.71	25	10.9	1.92	53.0	0.274	89.7	0.314
19	0.00	20.74	7.55	25	10.7	1.77	53.9	0.261	87.2	0.305
20	0.00	21.70	6.91	26	10.7	1.60	53.6	0.271	87.5	0.306
21	0.00	20.23	5.82	24	10.3	1.97	52.8	0.264	86.9	0.304
22	0.00	21.72	7.14	26	11.2	0.79	53.5	0.266	87.7	0.307
23	0.00	20.73	7.60	25	10.8	0.62	53.4	0.274	83.5	0.292
24	0.00	21.27	6.86	25	11.7	2.54	53.4	0.000	87.7	0.307
25	0.00	21.17	7.49	25	10.6	0.50	26.7	0.267	85.8	0.300
26	0.00	21.19	7.49	25	10.4	0.29	52.8	0.275	84.6	0.296
27	0.00	20.87	8.11	25	10.5	2.37	53.5	0.263	84.5	0.296
28	0.00	21.14	8.15	25	10.9	1.18	53.7	0.268	85.9	0.301
29	0.00	21.21	7.69	25	10.9	-0.25	53.0	0.271	84.0	0.294
30	0.00	20.99	7.54	25	10.3	-1.77	53.1	0.266	82.1	0.287
31	0.00	21.00	6.70	25	10.3	-1.32	52.3	0.277	84.5	0.296
32	0.00	21.05	7.48	25	11.0	0.44	53.8	0.265	83.5	0.292
33	0.00	21.28	7.69	25	11.3	1.15	52.3	0.274	86.2	0.302
34	0.00	21.16	7.07	25	10.6	1.35	53.2	0.272	84.1	0.294
35	0.00	21.49	7.50	26	11.0	2.61	52.5	0.267	85.5	0.299
36	0.00	20.82	6.81	25	10.8	1.08	53.1	0.264	84.0	0.294
37	0.00	21.01	7.01	25	10.9	0.77	52.7	0.274	89.7	0.314
38	0.00	20.91	6.67	25	10.8	1.24	53.9	0.265	86.6	0.303
39	0.00	21.00	6.39	25	10.8	0.99	53.3	0.263	84.3	0.295
40	0.00	20.99	6.11	25	11.2	1.09	52.0	0.255	83.0	0.291
41	0.00	20.99	7.51	25	11.2	2.95	53.3	0.250	83.7	0.293
42	0.00	21.34	5.94	25	11.3	2.12	52.9	0.262	86.4	0.302
43	0.00	21.21	6.31	25	10.8	1.66	52.7	0.264	84.7	0.296
44	0.00	21.32	5.96	25	10.8	1.39	51.6	0.274	88.1	0.308
45	0.00	21.05	7.82	25	11.3	1.39	53.8	0.259	85.3	0.298
46	0.00	20.15	7.49	24	10.7	2.05	52.2	0.261	86.9	0.304
47	0.00	21.02	7.09	25	10.6	1.55	53.4	0.266	84.0	0.294
48	0.00	20.96	7.14	25	10.6	1.72	53.0	0.266	85.2	0.298
	Average	20.98	6.90	25	10.9	1.39	52.0	0.257	86.0	0.301

Total number of blows analyzed: 48

Time Summary

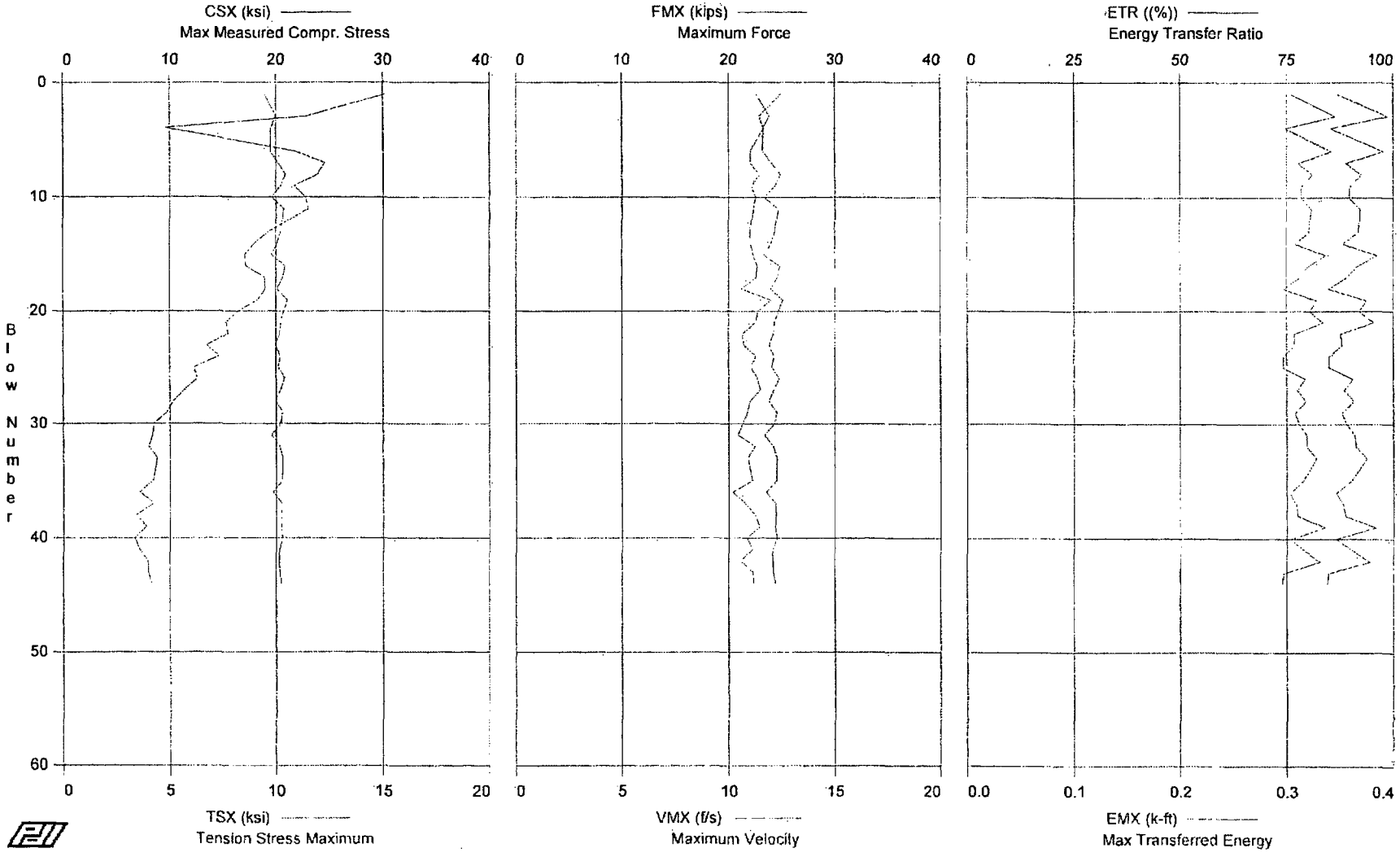
Drive 56 seconds 9:44:35 AM - 9:45:31 AM (12/20/2006) BN 1 - 48

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 8-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-1185; 83.5' - 85' Sample



Vogtle COL Project - Boring B-1185; 83.5' - 85' Sample
OP: SEK

Rig Serial No. 165592 (Gregg CME 850)
Test date: 20-Dec-2006

AR: 1.19 in^2
LE: 89.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	18.95	15.20	23	12.5	2.86	0.0	0.287	86.8	0.304
3	0.00	20.03	11.43	24	11.4	3.47	54.0	0.285	98.8	0.346
4	0.00	19.54	4.77	23	11.6	0.69	55.6	0.000	85.3	0.299
6	0.00	19.49	10.90	23	11.0	2.00	54.6	0.290	97.8	0.342
7	0.00	20.17	12.30	24	11.0	1.03	54.2	0.288	88.9	0.311
8	0.00	20.91	11.97	25	11.4	2.04	54.3	0.289	92.4	0.324
9	0.00	20.46	10.84	24	11.1	1.18	55.0	0.282	89.9	0.314
10	0.00	19.62	11.40	23	11.3	2.11	54.1	0.279	89.6	0.314
11	0.00	20.74	11.52	25	11.2	1.72	54.5	0.283	92.3	0.323
13	0.00	20.45	9.68	24	11.0	1.32	55.5	0.281	91.8	0.321
14	0.00	20.15	9.02	24	11.0	1.77	53.8	0.280	88.1	0.308
15	0.00	19.62	8.53	23	11.2	1.61	55.6	0.288	96.3	0.337
16	0.00	20.86	8.59	25	11.3	1.44	53.9	0.283	91.6	0.320
17	0.00	20.66	9.49	25	11.3	1.40	54.5	0.282	89.0	0.312
18	0.00	20.13	9.52	24	10.6	1.18	54.4	0.279	84.8	0.297
19	0.00	21.08	9.16	25	12.0	1.89	53.6	0.289	93.7	0.328
20	0.00	20.77	8.24	25	11.4	1.30	54.3	0.283	92.0	0.322
21	0.00	20.42	7.65	24	11.3	1.56	53.5	0.284	95.5	0.334
22	0.00	20.36	7.76	24	10.6	1.32	55.5	0.284	87.6	0.307
23	0.00	19.99	6.74	24	10.7	0.95	53.9	0.280	88.0	0.308
24	0.00	20.40	7.31	24	11.3	1.25	55.1	0.275	85.0	0.297
25	0.00	20.22	6.15	24	11.0	1.14	53.3	0.274	84.9	0.297
26	0.00	20.80	6.28	25	11.3	1.05	54.4	0.286	90.6	0.317
27	0.00	20.39	5.67	24	11.5	1.45	54.7	0.274	88.5	0.310
28	0.00	19.97	5.18	24	11.0	1.31	53.8	0.280	90.8	0.318
29	0.00	20.60	4.86	25	10.9	1.66	54.7	0.276	88.0	0.308
30	0.00	20.43	4.23	24	10.7	1.08	53.4	0.284	89.1	0.312
31	0.00	19.60	4.19	23	10.4	1.45	54.8	0.276	91.0	0.319
32	0.00	20.33	4.00	24	11.2	1.64	54.3	0.276	91.3	0.319
33	0.00	20.63	4.38	25	10.9	1.72	54.5	0.280	93.8	0.328
35	0.00	20.57	4.21	24	11.1	1.92	54.2	0.283	90.1	0.315
36	0.00	19.74	3.56	23	10.2	1.23	54.1	0.282	86.6	0.303
37	0.00	20.50	4.23	24	10.8	1.01	53.3	0.285	88.2	0.309
38	0.00	20.53	3.41	24	11.2	1.00	54.7	0.282	88.7	0.310
39	0.00	20.48	3.87	24	11.4	1.57	53.7	0.284	95.9	0.336
40	0.00	20.60	3.31	25	10.8	1.30	54.3	0.285	86.5	0.303
41	0.00	20.28	3.53	24	11.1	1.03	53.5	0.284	90.3	0.316
42	0.00	20.30	3.97	24	10.6	1.03	54.8	0.287	94.5	0.331
43	0.00	20.31	3.99	24	11.1	0.72	53.6	0.275	84.8	0.297
44	0.00	20.50	4.12	24	11.2	1.54	53.7	0.273	84.5	0.296
	Average	20.29	7.13	24	11.1	1.47	54.3	0.275	90.1	0.315

Total number of blows analyzed: 40

Time Summary

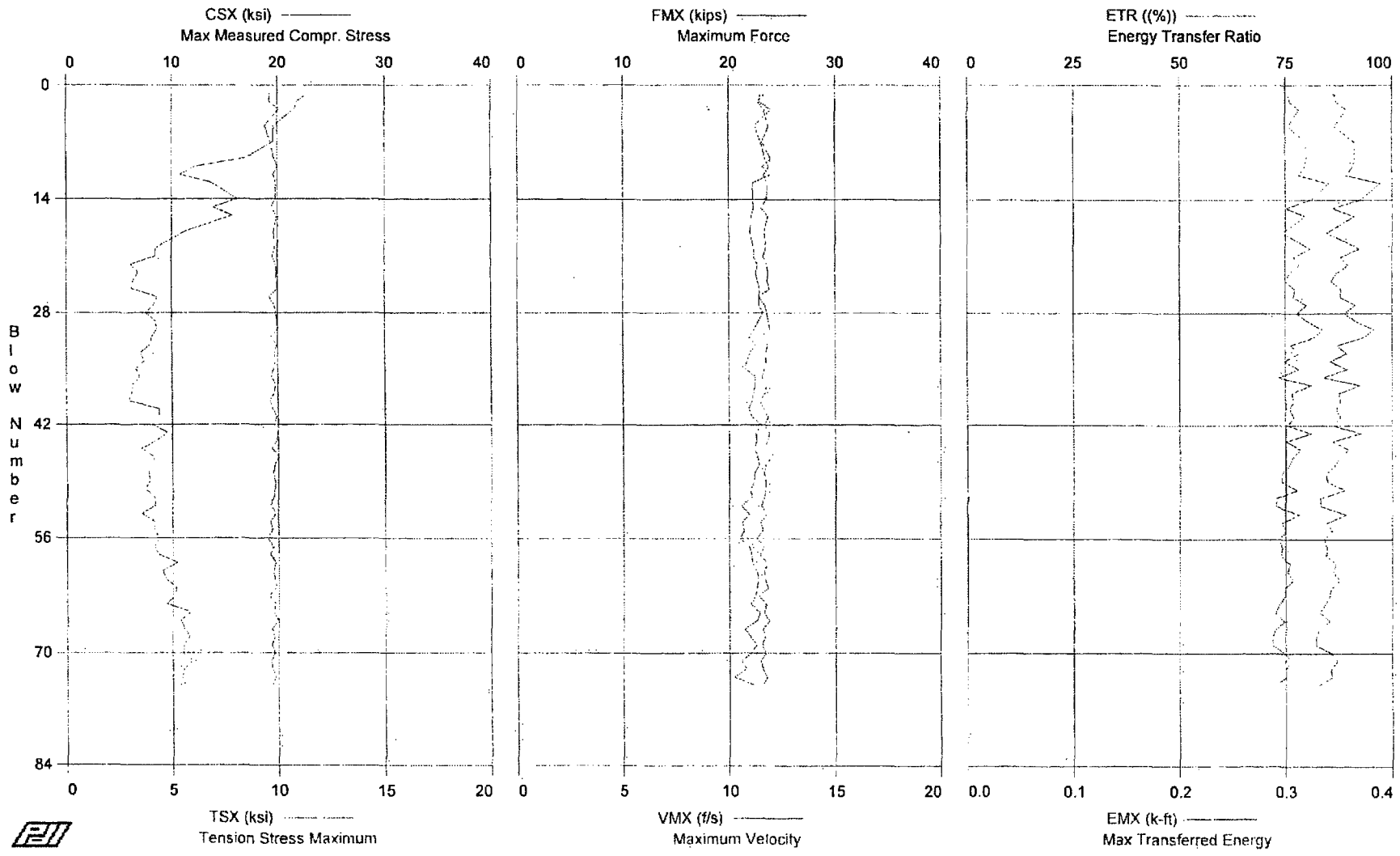
Drive 48 seconds 10:03:20 AM - 10:04:08 AM (12/20/2006) BN 1 - 44

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 8-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-1185; 88.5' - 90' Sample



Vogtle COL Project - Boring B-1185; 88.5' - 90' Sample
OP: SEK

Rig Serial No. 165592 (Gregg CME 850)
Test date: 20-Dec-2006

AR: 1.19 in^2
LE: 94.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	19.30	11.44	23	11.8	1.71	0.0	0.263	86.5	0.303
2	0.00	19.21	10.90	23	11.3	2.78	53.2	0.251	86.9	0.304
3	0.00	20.13	10.77	24	11.7	2.88	52.3	0.262	89.5	0.313
5	0.00	18.87	9.84	22	11.9	1.67	52.1	0.257	86.6	0.303
7	0.00	19.36	9.81	23	11.6	2.47	52.6	0.257	91.3	0.320
9	0.00	19.68	8.48	23	12.0	2.16	52.7	0.260	91.5	0.320
10	0.00	20.00	6.14	24	11.6	1.76	51.9	0.263	90.8	0.318
11	0.00	19.59	5.39	23	11.9	1.83	53.0	0.250	89.3	0.313
12	0.00	19.84	6.86	24	11.1	2.32	51.6	0.266	97.4	0.341
14	0.00	19.79	8.10	24	11.1	2.23	52.2	0.262	92.6	0.324
15	0.00	19.38	6.95	23	11.2	1.33	52.7	0.254	86.1	0.301
16	0.00	19.90	7.85	24	11.1	1.80	52.4	0.262	91.2	0.319
18	0.00	19.60	5.55	23	11.0	1.41	52.9	0.249	84.8	0.297
20	0.00	19.75	4.23	23	11.2	1.81	52.8	0.251	92.5	0.324
21	0.00	19.53	4.20	23	11.2	1.50	53.0	0.256	88.1	0.308
22	0.00	19.83	3.04	24	11.4	1.33	53.4	0.251	89.8	0.314
23	0.00	19.91	3.38	24	11.3	1.53	51.6	0.250	87.0	0.304
24	0.00	19.85	3.16	24	11.4	1.63	53.2	0.247	85.8	0.300
25	0.00	20.00	3.07	24	11.5	1.48	51.6	0.252	88.1	0.309
26	0.00	19.19	4.29	23	11.4	1.36	52.7	0.252	88.1	0.308
27	0.00	19.66	4.13	23	11.4	2.07	52.5	0.251	91.4	0.320
28	0.00	19.83	3.75	24	11.6	1.55	52.0	0.256	88.9	0.311
29	0.00	19.93	4.19	24	11.4	1.44	53.1	0.256	91.7	0.321
30	0.00	20.02	4.27	24	11.2	1.84	52.1	0.265	95.8	0.335
31	0.00	19.30	4.03	23	11.0	1.79	53.4	0.255	93.4	0.327
32	0.00	19.91	3.95	24	11.3	1.39	51.8	0.257	87.2	0.305
33	0.00	19.68	3.47	23	11.0	1.54	52.6	0.254	89.4	0.313
34	0.00	19.76	3.68	24	10.8	1.05	52.4	0.257	85.4	0.299
35	0.00	19.60	3.27	23	10.8	1.76	51.9	0.257	89.5	0.313
36	0.00	19.42	3.44	23	11.3	1.17	52.2	0.251	83.9	0.294
37	0.00	19.80	3.11	24	11.2	1.33	51.7	0.253	92.5	0.324
38	0.00	19.64	3.07	23	11.2	1.48	53.6	0.251	87.6	0.306
39	0.00	19.29	2.93	23	11.1	1.21	51.1	0.252	87.9	0.308
40	0.00	19.54	4.37	23	10.9	1.19	53.0	0.247	87.0	0.304
41	0.00	19.89	4.40	24	11.1	1.12	51.8	0.252	88.0	0.308
42	0.00	19.60	4.08	23	11.5	1.04	53.2	0.247	86.3	0.302
43	0.00	19.97	4.76	24	11.3	1.68	51.4	0.260	92.6	0.324
44	0.00	19.86	4.22	24	11.3	0.94	52.1	0.252	86.1	0.301
45	0.00	19.43	3.54	23	11.2	1.19	52.4	0.253	89.8	0.314
46	0.00	20.09	4.14	24	11.3	0.66	50.9	0.258	87.7	0.307
47	0.00	19.70	4.07	23	11.4	1.11	53.1	0.249	86.6	0.303
48	0.00	19.52	3.86	23	11.2	0.71	51.5	0.255	84.5	0.296
49	0.00	19.69	3.93	23	11.2	1.05	52.3	0.256	84.8	0.297
50	0.00	19.67	3.69	23	11.0	1.03	51.7	0.265	89.0	0.311
51	0.00	19.54	4.12	23	11.1	1.46	53.5	0.247	83.1	0.291
52	0.00	19.35	4.22	23	10.6	1.42	51.7	0.251	83.4	0.292
53	0.00	19.78	3.55	24	10.9	1.25	51.6	0.266	89.3	0.313
54	0.00	19.30	4.16	23	10.6	1.42	52.2	0.251	84.8	0.297
55	0.00	19.45	4.13	23	10.7	0.52	51.4	0.255	85.9	0.301
56	0.00	18.99	4.35	23	10.5	1.28	52.6	0.245	84.0	0.294
57	0.00	19.52	4.15	23	10.9	0.71	51.1	0.253	84.8	0.297
58	0.00	19.24	4.34	23	11.1	1.38	53.1	0.244	84.5	0.296
59	0.00	19.77	5.22	24	11.1	1.71	50.9	0.247	86.8	0.304
60	0.00	19.55	4.52	23	11.3	0.80	52.8	0.249	86.2	0.302
61	0.00	19.63	4.69	23	11.4	1.17	51.9	0.255	87.7	0.307
62	0.00	19.84	5.18	24	11.3	0.90	52.4	0.249	85.6	0.299
63	0.00	19.13	5.14	23	11.2	0.63	51.9	0.248	85.3	0.299
64	0.00	19.71	4.70	23	11.0	1.44	50.8	0.251	84.1	0.294
65	0.00	19.52	5.85	23	11.4	0.74	53.4	0.245	82.9	0.290
66	0.00	19.96	5.35	24	11.3	0.98	50.6	0.257	85.3	0.299
67	0.00	19.42	5.54	23	10.7	0.85	52.9	0.250	82.9	0.290
68	0.00	19.63	5.82	23	11.0	0.50	51.8	0.248	82.3	0.288
69	0.00	19.38	5.54	23	11.3	0.94	52.0	0.251	82.3	0.288
70	0.00	19.68	5.50	23	11.0	0.92	52.0	0.324	85.8	0.300
71	0.00	19.30	5.94	23	10.6	0.67	51.8	0.257	87.1	0.305

Vogtle COL Project - Boring B-1185; 88.5' - 90' Sample
OP: SEK

Rig Serial No. 165592 (Gregg CME 850)
Test date: 20-Dec-2006

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
72	0.00	19.43	5.54	23	10.8	0.12	53.2	0.257	85.7	0.300
73	0.00	19.74	5.45	23	10.2	1.67	51.4	0.259	85.8	0.300
74	0.00	19.43	5.57	23	11.1	0.67	52.5	0.254	82.8	0.290
	Average	19.61	5.06	23	11.2	1.36	52.3	0.255	87.5	0.306

Total number of blows analyzed: 68

Time Summary

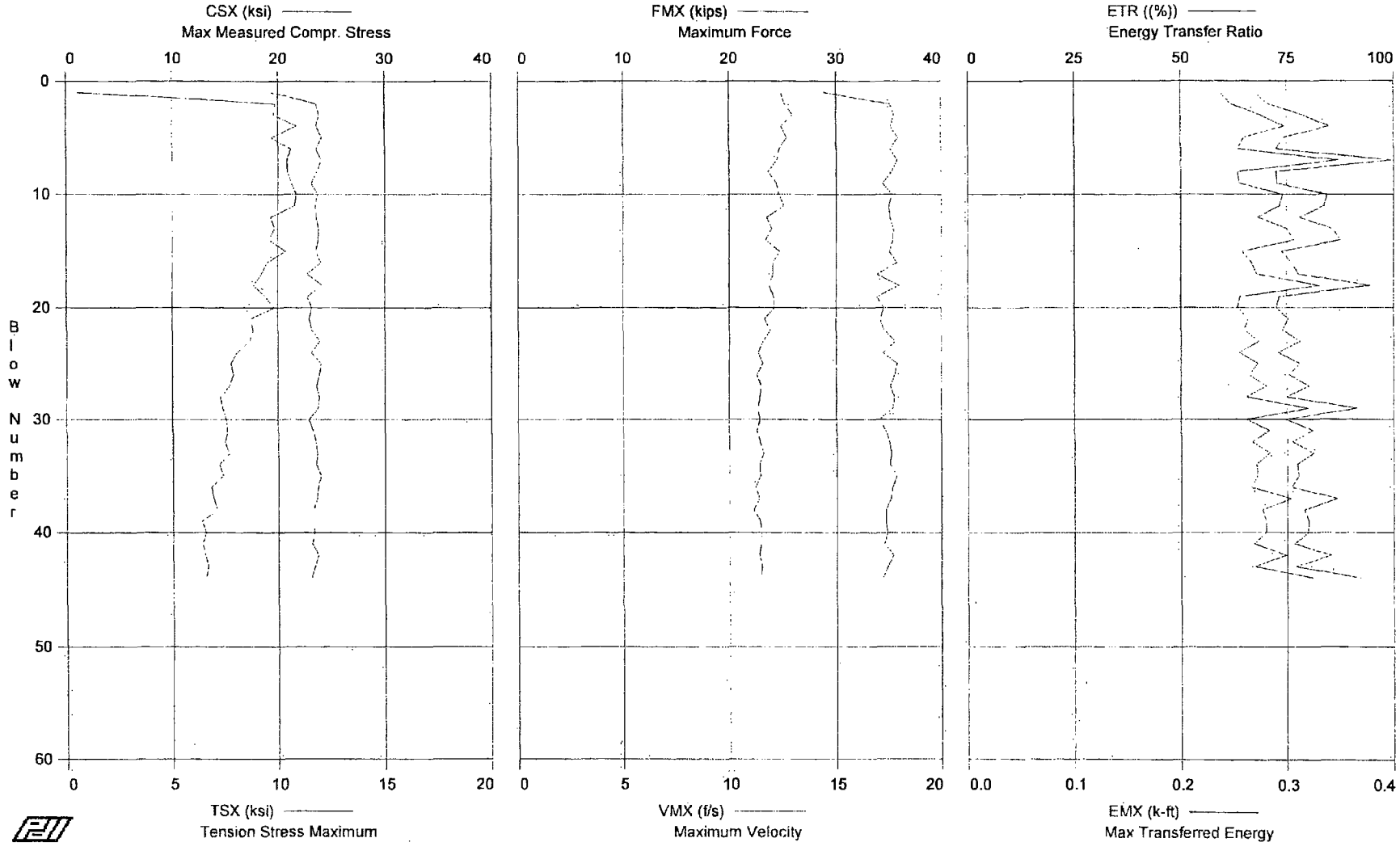
Drive 1 minute 24 seconds 10:23:38 AM - 10:25:02 AM (12/20/2006) BN 1 - 74

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 8-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-3002A; 13.5' - 15' Sample



Plant Vogtle COL Project - Boring B-3002A; 13.5' - 15' Sample
OP: SEK

Rig Serial No. 165592 (Gregg CME 850 Track)
Test date: 17-Jan-2007

AR: 1.49 in^2
LE: 19.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	19.39	0.52	29	12.4	-0.43	0.0	0.000	67.7	0.237
2	0.00	23.61	9.88	35	12.6	0.57	50.0	0.274	70.6	0.247
3	0.00	23.87	9.82	36	13.0	2.81	50.6	0.273	78.7	0.275
4	0.00	23.63	10.87	35	12.4	1.81	50.9	0.277	85.0	0.298
5	0.00	24.13	9.70	36	12.7	1.34	50.2	0.278	74.4	0.260
6	0.00	23.61	10.59	35	12.3	1.63	51.4	0.273	72.4	0.254
7	0.00	24.07	10.41	36	12.2	1.72	49.8	0.294	99.4	0.348
8	0.00	23.69	10.44	35	11.8	0.89	51.8	0.280	72.5	0.254
9	0.00	23.12	10.64	34	12.2	1.39	49.8	0.280	72.7	0.255
10	0.00	23.74	10.84	35	12.3	2.62	51.2	0.281	84.5	0.296
11	0.00	23.52	10.78	35	12.5	1.93	50.3	0.288	83.8	0.293
12	0.00	23.61	9.66	35	11.7	1.54	50.5	0.280	78.1	0.273
13	0.00	23.83	9.85	35	12.0	2.08	51.2	0.278	85.7	0.300
14	0.00	23.80	9.57	35	11.7	1.61	49.7	0.289	87.8	0.307
15	0.00	23.56	10.35	35	12.4	1.92	51.7	0.277	73.7	0.258
16	0.00	24.05	9.49	36	12.0	1.85	49.5	0.282	76.3	0.267
17	0.00	22.77	9.22	34	12.0	1.85	51.5	0.277	77.7	0.272
18	0.00	24.18	8.86	36	11.9	1.81	49.8	0.290	94.6	0.331
19	0.00	22.76	9.42	34	12.1	1.30	51.2	0.278	73.2	0.256
20	0.00	23.20	9.82	35	12.1	1.07	50.3	0.278	72.6	0.254
21	0.00	22.95	8.74	34	11.6	1.58	50.7	0.276	75.3	0.264
22	0.00	23.21	8.82	35	11.9	1.82	50.9	0.271	74.2	0.260
23	0.00	23.92	8.65	36	11.6	1.79	50.0	0.281	78.2	0.274
24	0.00	23.13	8.03	34	11.3	1.40	51.5	0.275	72.9	0.255
25	0.00	24.06	7.78	36	11.6	1.33	49.6	0.285	78.0	0.273
26	0.00	23.87	7.88	36	11.3	1.78	51.5	0.278	75.5	0.264
27	0.00	23.61	7.69	35	11.5	1.40	49.8	0.286	80.2	0.281
28	0.00	23.89	7.27	36	11.4	1.10	25.4	0.281	74.9	0.262
29	0.00	23.76	7.38	35	11.3	1.30	50.5	0.285	91.6	0.321
30	0.00	22.90	7.56	34	11.4	1.02	51.1	0.276	74.8	0.262
31	0.00	23.31	7.60	35	11.3	0.75	49.8	0.288	81.1	0.284
32	0.00	23.52	7.46	35	11.4	1.23	51.5	0.277	76.2	0.267
33	0.00	23.65	7.68	35	11.6	1.90	49.5	0.285	81.3	0.284
34	0.00	23.56	7.20	35	11.4	-0.18	51.7	0.281	77.4	0.271
35	0.00	24.00	7.38	36	11.4	1.21	49.7	0.283	77.7	0.272
36	0.00	23.74	6.83	35	11.2	0.76	51.1	0.276	76.1	0.266
37	0.00	23.62	6.93	35	11.4	1.34	50.3	0.286	86.9	0.304
38	0.00	23.30	7.09	35	11.1	1.33	50.5	0.279	79.1	0.277
39	0.00	23.30	6.37	35	11.4	1.64	51.0	0.276	80.1	0.280
40	0.00	23.39	6.58	35	11.5	0.94	50.0	0.283	80.0	0.280
41	0.00	23.20	6.39	35	11.5	0.90	51.4	0.274	76.7	0.269
42	0.00	23.78	6.54	35	11.4	0.89	49.5	0.286	85.3	0.299
43	0.00	23.42	6.67	35	11.5	0.45	51.5	0.276	77.1	0.270
44	0.00	23.12	6.56	34	11.5	1.34	49.7	0.291	92.4	0.324
	Average	23.46	8.36	35	11.8	1.37	50.0	0.274	79.2	0.277

Total number of blows analyzed: 44

Time Summary

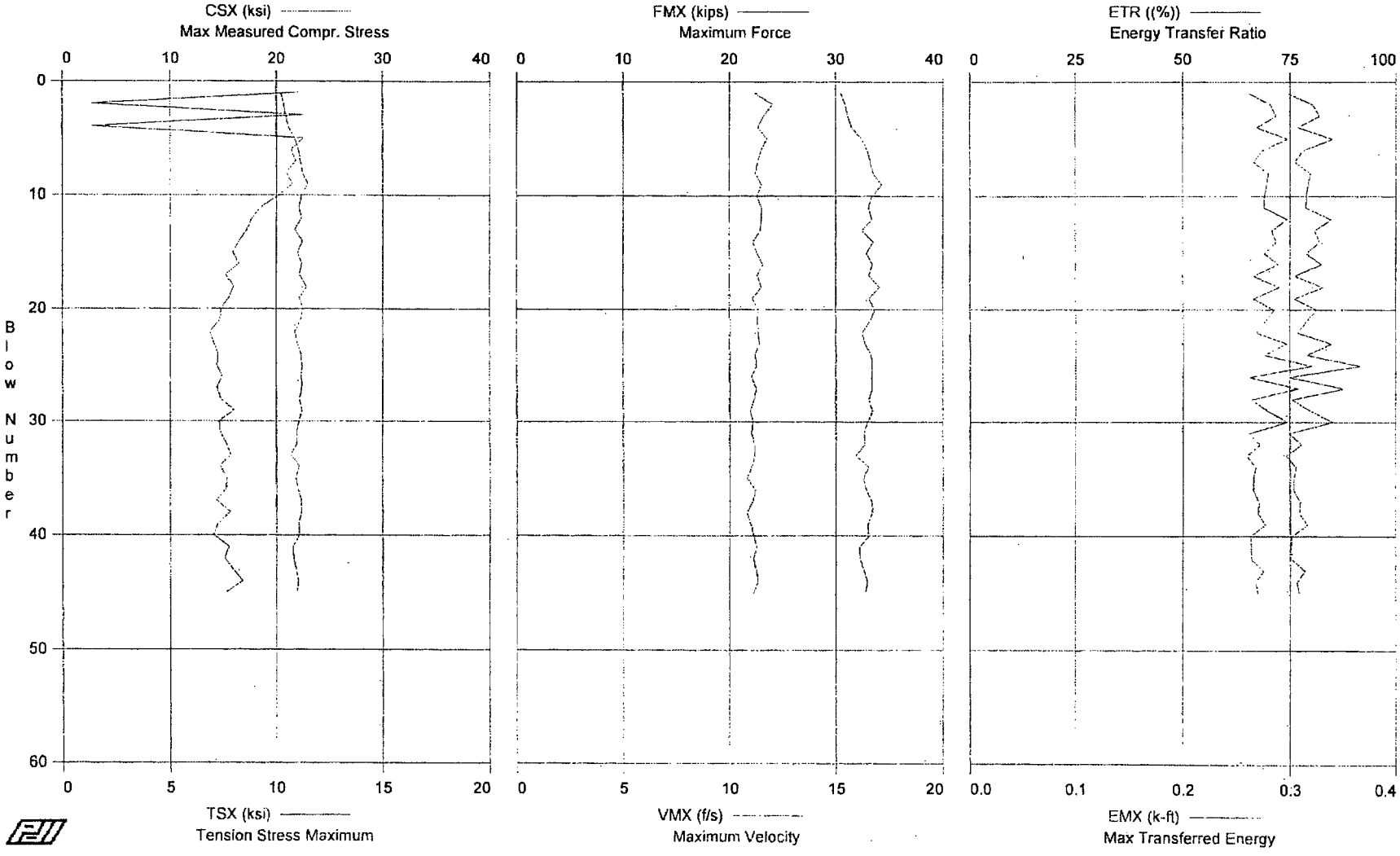
Drive 52 seconds 8:11:47 AM - 8:12:39 AM (1/17/2007) BN 1 - 44

MACTEC Engineering and Consulting, Inc: - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 8-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-3002A; 18.5' - 20' Sample



Plant Vogtle COL Project - Boring B-3002A; 18.5' - 20' Sample
OP: SEK

Rig Serial No. 165592 (Gregg CME 850 Track)
Test date: 17-Jan-2007

AR: 1.49 in^2
LE: 24.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	20.43	10.98	30	11.2	0.38	0.0	0.261	74.7	0.262
2	0.00	20.72	1.32	31	12.0	1.19	50.0	0.000	80.5	0.282
3	0.00	20.89	11.31	31	11.6	1.26	52.8	0.287	82.1	0.287
4	0.00	21.13	1.33	31	11.4	1.33	53.1	0.000	76.9	0.269
5	0.00	21.74	11.28	32	11.8	1.13	51.7	0.297	85.2	0.298
6	0.00	22.11	10.72	33	11.5	0.88	53.9	0.280	78.1	0.274
7	0.00	22.29	10.93	33	11.3	1.66	51.3	0.279	76.1	0.266
8	0.00	22.46	10.47	33	11.2	0.66	53.7	0.279	79.9	0.280
9	0.00	23.00	10.78	34	11.5	1.97	51.7	0.284	79.3	0.278
10	0.00	22.37	10.15	33	11.3	1.17	53.1	0.279	78.9	0.276
11	0.00	22.15	9.28	33	11.5	0.47	52.2	0.280	78.8	0.276
12	0.00	22.37	8.84	33	11.5	0.91	53.0	0.284	84.7	0.297
13	0.00	21.76	8.58	32	11.5	1.00	52.6	0.282	80.9	0.283
14	0.00	22.46	8.22	33	11.1	1.22	52.5	0.278	82.0	0.287
15	0.00	22.02	7.93	33	11.3	1.09	52.9	0.279	78.9	0.276
16	0.00	22.42	8.20	33	11.6	1.20	51.6	0.286	82.5	0.289
17	0.00	22.20	7.58	33	11.3	0.74	53.8	0.274	76.1	0.266
18	0.00	22.86	7.96	34	11.5	0.50	51.3	0.294	82.9	0.290
19	0.00	22.20	7.73	33	11.1	0.71	53.3	0.271	76.1	0.266
20	0.00	22.55	7.34	34	11.4	1.17	51.8	0.284	81.3	0.285
21	0.00	22.29	7.32	33	11.3	1.78	52.6	0.278	79.0	0.277
22	0.00	21.76	6.84	32	11.4	0.33	52.8	0.278	76.9	0.269
23	0.00	21.95	7.03	33	11.4	1.00	51.9	0.284	84.9	0.297
24	0.00	22.33	7.25	33	11.2	1.57	53.3	0.275	79.0	0.276
25	0.00	22.42	7.16	33	11.3	2.41	51.6	0.284	91.8	0.321
26	0.00	22.37	7.41	33	11.1	1.32	53.6	0.272	74.8	0.262
27	0.00	22.42	7.17	33	11.3	1.58	51.5	0.282	88.1	0.308
28	0.00	22.20	7.34	33	11.2	1.68	53.4	0.273	75.5	0.264
29	0.00	22.42	7.98	33	11.0	0.85	52.1	0.278	80.1	0.280
30	0.00	22.13	7.26	33	11.1	1.95	52.5	0.273	85.2	0.298
31	0.00	21.90	7.33	33	11.1	1.42	52.7	0.269	74.9	0.262
32	0.00	21.95	7.63	33	11.2	0.89	52.2	0.279	77.8	0.272
33	0.00	21.37	7.81	32	11.2	0.99	53.3	0.274	74.2	0.260
34	0.00	22.20	7.32	33	11.1	0.74	51.2	0.279	76.5	0.268
35	0.00	21.84	7.63	33	10.8	1.36	53.4	0.269	75.9	0.266
36	0.00	22.04	7.60	33	11.2	1.03	52.0	0.279	75.9	0.266
37	0.00	22.37	7.16	33	11.1	0.66	52.9	0.278	77.5	0.271
38	0.00	22.38	7.79	33	10.8	1.27	51.9	0.280	77.2	0.270
39	0.00	22.11	7.22	33	11.0	1.24	52.9	0.274	79.2	0.277
40	0.00	22.19	7.00	33	11.1	1.25	52.4	0.273	75.3	0.263
41	0.00	21.60	7.75	32	11.3	1.25	52.0	0.276	75.4	0.264
42	0.00	21.65	7.53	32	11.1	1.77	53.3	0.267	75.5	0.264
43	0.00	21.89	7.95	33	11.3	1.14	51.5	0.276	78.6	0.275
44	0.00	22.09	8.38	33	11.3	1.81	53.3	0.272	76.7	0.268
45	0.00	21.98	7.60	33	11.1	2.12	51.4	0.274	77.2	0.270
	Average	22.04	7.94	33	11.3	1.20	52.5	0.266	79.1	0.277

Total number of blows analyzed: 45

Time Summary

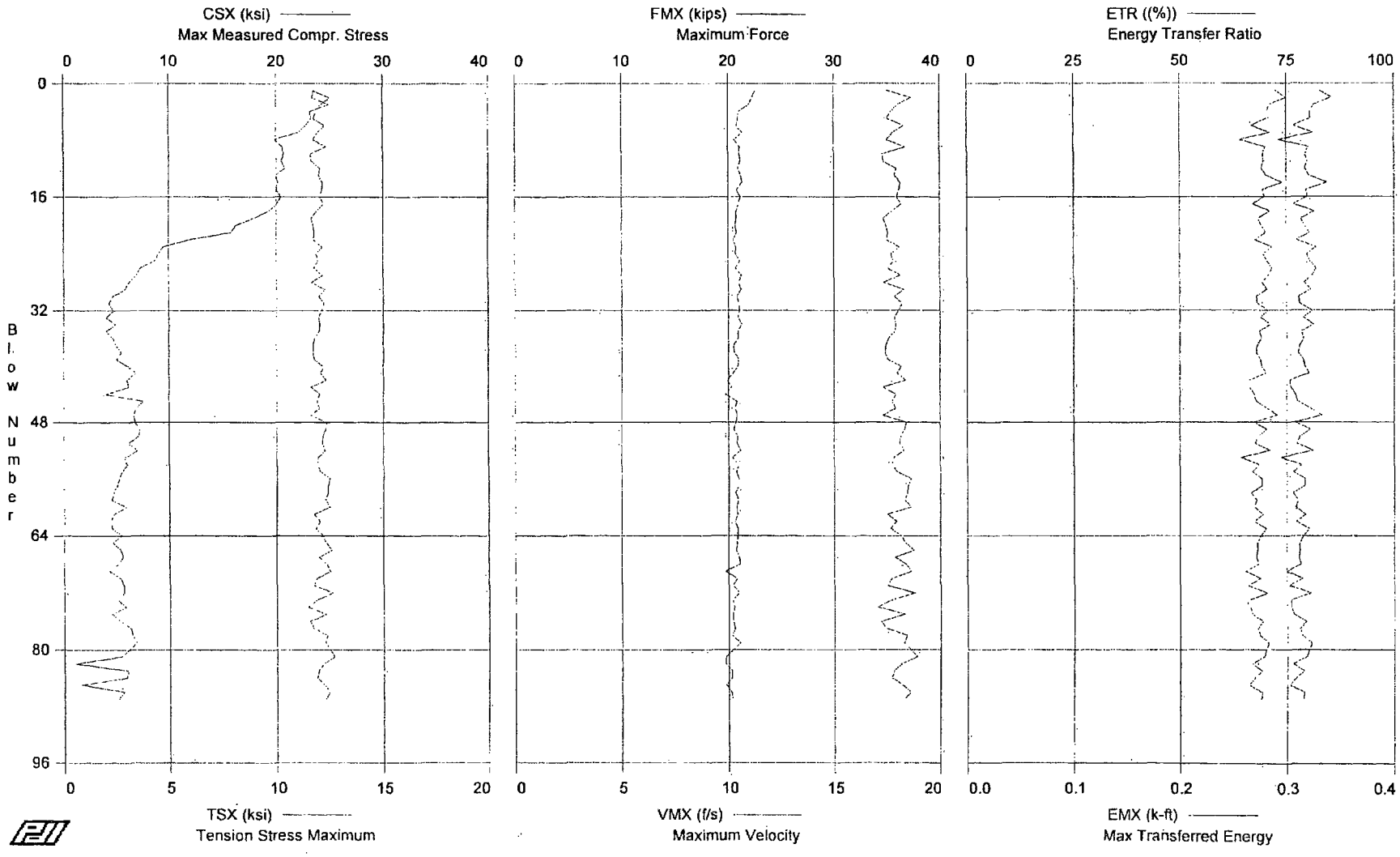
Drive 50 seconds 8:25:10 AM - 8:26:00 AM (1/17/2007) BN 1 - 45

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 8-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-3002A; 20' - 21.5' Sample



Plant Vogtle COL Project - Boring B-3002A; 20' - 21.5' Sample
OP: SEK

Rig Serial No. 165592 (Gregg CME 850 Track)
Test date: 17-Jan-2007

AR: 1.49 in^2
LE: 26.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	23.50	11.74	35	11.3	1.85	0.0	0.286	82.8	0.290
2	0.00	25.03	11.69	37	11.1	1.89	48.9	0.298	85.6	0.300
3	0.00	24.20	12.48	36	11.0	1.10	50.7	0.300	81.4	0.285
4	0.00	23.74	11.59	35	10.5	1.26	51.5	0.303	80.6	0.282
5	0.00	23.52	11.64	35	10.5	0.88	50.4	0.304	80.6	0.282
6	0.00	24.59	11.39	37	10.4	0.98	51.9	0.294	76.7	0.268
7	0.00	23.87	11.03	36	10.7	0.87	50.0	0.308	81.4	0.285
8	0.00	23.50	9.95	35	10.3	0.71	51.5	0.282	73.3	0.257
9	0.00	24.70	10.31	37	10.6	1.24	50.5	0.304	80.3	0.281
10	0.00	23.19	10.36	35	10.5	0.52	51.1	0.299	79.3	0.278
11	0.00	23.27	10.25	35	10.6	1.02	50.8	0.302	79.8	0.279
12	0.00	24.08	10.40	36	10.5	0.98	51.2	0.303	79.3	0.277
13	0.00	23.97	10.00	36	10.6	1.05	51.3	0.299	80.3	0.281
14	0.00	24.33	10.08	36	10.7	1.44	50.5	0.308	84.5	0.296
15	0.00	24.25	10.02	36	10.4	1.23	51.8	0.295	79.5	0.278
16	0.00	24.12	10.21	36	10.6	1.17	50.0	0.302	79.9	0.280
17	0.00	24.40	10.02	36	10.5	0.99	52.0	0.293	76.7	0.269
18	0.00	23.80	9.65	35	10.4	1.36	50.3	0.311	81.6	0.285
19	0.00	23.26	8.97	35	10.4	1.02	51.6	0.302	78.4	0.274
20	0.00	23.46	8.14	35	10.4	1.06	50.6	0.301	79.3	0.277
21	0.00	23.56	7.91	35	10.4	1.23	51.3	0.306	80.3	0.281
22	0.00	23.47	5.99	35	10.2	1.10	51.4	0.294	77.4	0.271
23	0.00	24.29	4.73	36	10.4	0.97	50.3	0.303	82.0	0.287
24	0.00	23.76	4.52	35	10.4	0.71	51.9	0.304	79.8	0.279
25	0.00	23.92	4.34	36	10.6	0.88	50.0	0.311	80.5	0.282
26	0.00	23.54	3.66	35	10.4	0.60	51.9	0.304	81.9	0.287
27	0.00	24.36	3.47	36	10.6	0.71	50.8	0.312	81.1	0.284
28	0.00	23.25	3.11	35	10.5	0.72	51.4	0.302	79.0	0.277
29	0.00	24.54	2.95	37	10.6	0.55	50.4	0.310	80.7	0.282
30	0.00	23.97	2.32	36	10.4	0.83	51.0	0.294	77.9	0.272
31	0.00	24.44	2.15	36	10.5	0.82	50.9	0.294	78.0	0.273
32	0.00	24.23	2.39	36	10.5	0.50	50.0	0.304	81.0	0.283
33	0.00	23.95	2.03	36	10.5	0.97	51.8	0.300	78.9	0.276
34	0.00	24.07	2.49	36	10.6	0.72	49.6	0.308	81.3	0.285
35	0.00	24.00	2.02	36	10.5	0.65	51.8	0.297	78.5	0.275
36	0.00	23.58	2.36	35	10.5	0.40	50.0	0.303	79.0	0.277
37	0.00	23.42	2.49	35	10.2	0.46	51.6	0.297	78.1	0.273
38	0.00	23.37	2.75	35	10.3	1.05	50.5	0.298	77.8	0.272
39	0.00	23.54	2.53	35	10.5	0.78	51.0	0.300	78.9	0.276
40	0.00	24.37	3.07	36	10.5	0.92	50.9	0.300	79.2	0.277
41	0.00	24.13	3.44	36	10.2	0.58	49.9	0.306	80.2	0.281
42	0.00	24.67	3.01	37	10.0	0.50	51.6	0.291	75.9	0.266
43	0.00	23.23	3.08	35	10.2	2.58	49.9	0.302	76.0	0.266
44	0.00	24.06	1.99	36	9.9	1.54	51.6	0.000	77.1	0.270
45	0.00	23.79	3.79	35	10.4	1.21	50.4	0.300	77.6	0.272
46	0.00	24.03	3.44	36	10.3	0.96	51.5	0.297	80.6	0.282
47	0.00	23.23	3.35	35	10.4	1.96	50.5	0.304	83.4	0.292
48	0.00	24.71	3.40	37	10.4	0.44	51.0	0.297	77.0	0.270
49	0.00	24.59	3.63	37	10.3	1.14	51.6	0.295	80.6	0.282
50	0.00	24.34	3.56	36	10.5	0.88	50.6	0.299	78.2	0.274
51	0.00	24.31	3.09	36	10.4	-0.06	51.3	0.290	77.5	0.271
52	0.00	24.55	3.51	37	10.6	0.97	50.4	0.308	81.4	0.285
53	0.00	23.91	2.91	36	10.2	0.62	51.7	0.285	73.8	0.258
54	0.00	23.80	3.03	35	10.5	0.70	50.3	0.302	78.6	0.275
55	0.00	24.09	2.77	36	10.4	0.69	51.6	0.294	76.5	0.268
56	0.00	25.00	2.63	37	10.5	1.03	50.9	0.308	79.2	0.277
57	0.00	24.78	2.54	37	10.5	0.83	50.7	0.298	79.1	0.277
58	0.00	24.76	2.36	37	10.3	0.63	50.9	0.294	76.4	0.267
59	0.00	24.56	2.27	37	10.5	1.19	50.5	0.300	77.7	0.272
60	0.00	24.99	2.99	37	10.4	1.09	51.3	0.290	77.1	0.270
61	0.00	23.50	2.37	35	10.4	0.99	50.1	0.305	79.4	0.278
62	0.00	24.07	2.23	36	10.3	1.13	51.8	0.297	77.2	0.270
63	0.00	23.69	2.30	35	10.4	1.15	50.4	0.309	80.3	0.281
64	0.00	24.36	2.76	36	10.4	0.48	51.5	0.296	78.9	0.276
65	0.00	24.62	2.32	37	10.4	0.69	51.1	0.305	78.1	0.273

Plant Vogtle COL Project - Boring B-3002A; 20' - 21.5' Sample
OP: SEK

Rig Serial No. 165592 (Gregg CME 850 Track)
Test date: 17-Jan-2007

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
66	0.00	25.17	2.71	37	10.3	0.44	50.9	0.296	78.1	0.273
67	0.00	23.97	2.82	36	10.5	0.27	51.0	0.293	77.8	0.272
68	0.00	24.69	2.57	37	10.5	-0.07	50.6	0.300	78.3	0.274
69	0.00	24.99	2.17	37	9.8	1.10	51.4	0.291	75.0	0.262
70	0.00	23.77	2.73	35	10.4	0.61	50.3	0.311	78.8	0.276
71	0.00	23.50	2.83	35	10.2	0.57	51.5	0.286	75.5	0.264
72	0.00	25.21	2.85	38	10.5	0.28	50.5	0.312	80.6	0.282
73	0.00	23.74	2.54	35	10.2	0.90	51.3	0.294	76.1	0.266
74	0.00	22.89	2.94	34	10.3	0.63	50.4	0.299	76.0	0.266
75	0.00	24.61	2.27	37	10.2	0.90	51.4	0.298	76.6	0.268
76	0.00	23.07	2.69	34	10.2	1.17	51.6	0.306	79.5	0.278
77	0.00	23.42	3.18	35	10.3	0.79	50.8	0.296	78.0	0.273
78	0.00	24.70	3.24	37	10.1	-0.40	51.7	0.300	78.6	0.275
79	0.00	24.52	3.46	37	10.5	-0.07	50.4	0.308	80.8	0.283
81	0.00	25.37	2.73	38	9.9	0.95	41.3	0.305	79.6	0.279
82	0.00	24.36	0.49	36	9.8	-0.24	51.5	0.000	76.4	0.268
83	0.00	23.90	3.02	36	10.1	0.69	51.1	0.305	79.0	0.277
84	0.00	23.76	2.97	35	10.1	2.85	51.2	0.306	77.1	0.270
85	0.00	24.42	0.80	36	9.9	0.28	51.0	0.000	75.7	0.265
86	0.00	24.94	2.85	37	10.1	0.80	50.8	0.305	79.0	0.277
87	0.00	24.54	2.57	37	10.2	0.90	51.4	0.298	78.8	0.276
	Average	24.09	4.70	36	10.4	0.88	50.8	0.290	78.9	0.276

Total number of blows analyzed: 86

Time Summary

Drive 1 minute 41 seconds 8:43:35 AM - 8:45:16 AM (1/17/2007) BN 1 - 87

June 27, 2007

Memorandum to File DCN VGCOL 218
From: Steve Kiser SK
Reviewed By: Pieter Depree PD

Subject: **Report of SPT Energy – Gregg Drilling CME 55**
Hammer Serial No. 311025 Automatic Hammer
WORK INSTRUCTION VGCOL 218
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on February 7, 2007, during drilling of Boring B-3028 at the referenced site. The testing was performed from approximately 8:40 to 9:40 AM under sunny skies with breezy conditions and a temperature of about 60 degrees Fahrenheit. The boring was drilled with personnel and equipment from Gregg Drilling. The drilling equipment consisted of a CME 55 model truck-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of NW-J-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the boring below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Brian Giesecke. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. NW #146/1 and NW#146/2). An NW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.49 square inches and an outside diameter of approximately 2.625 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 2.625 and 2.25 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

14 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 309 foot-pounds to 324 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 88% to 93% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 315.7 foot-pounds, with a weighted average ETR of 90.2%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 218 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 14 PDIPLOT Output – 8 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
311025 (CME 55 Truck)	Gregg Drilling	B. Giesecke	B-3028	NW-J	2/7/2007	33.5 - 35.0	5 - 10 - 13	23	311	88.9%
						38.5 - 40.0	7 - 10 - 8	22	324	92.6%
						43.5 - 45.0	1 - 3 - 6	12	309	88.3%
						48.5 - 50.0	3 - 6 - 5	15	316	90.3%
							Weighted Average for Rig:		**315.7**	**90.2%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By: GLW	Date: 6-27-07	Checked By: WAL	Date: 7/31/07

Work Instructions – SPT Energy Gregg Drilling CME-55 (Giesecke) (Hammer #311025)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 2/7/07

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 2/7/07 To: 2/7/08

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 2/7/07

No. of Pages: 1 DCN: VGCOL 218

MACTEC

2801 YORKMONT ROAD, SUITE 100 D CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME
LOCATION:	Waynesboro, Georgia	MODEL:	55 TRUCK
PROJECT NO.:	6141-06-0286	SERIAL NO.:	311025
DATE:	2-7-07	HAMMER TYPE:	AUTOMATIC
WEATHER:	SUNNY - BREEZY 60°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	NW-5
DRILLING COMPANY:	GREGG DRILLING	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-3028		
DEPTH DRILLED:	150' PLANNED		
TIME DRIVEN:	1:15 pm		
RIG OPERATOR:	BRIAN GIESECKE		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.49 in²		
ACCEL. SERIAL NOS.:	P5953 / P5094		
STRAIN SERIAL NOS.:	146 NW 1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
33.5/35'	5-10-13										
38.5/40'	7-10-8										
43.5/45'	1-3-6										
48.5/50'	3-6-5										

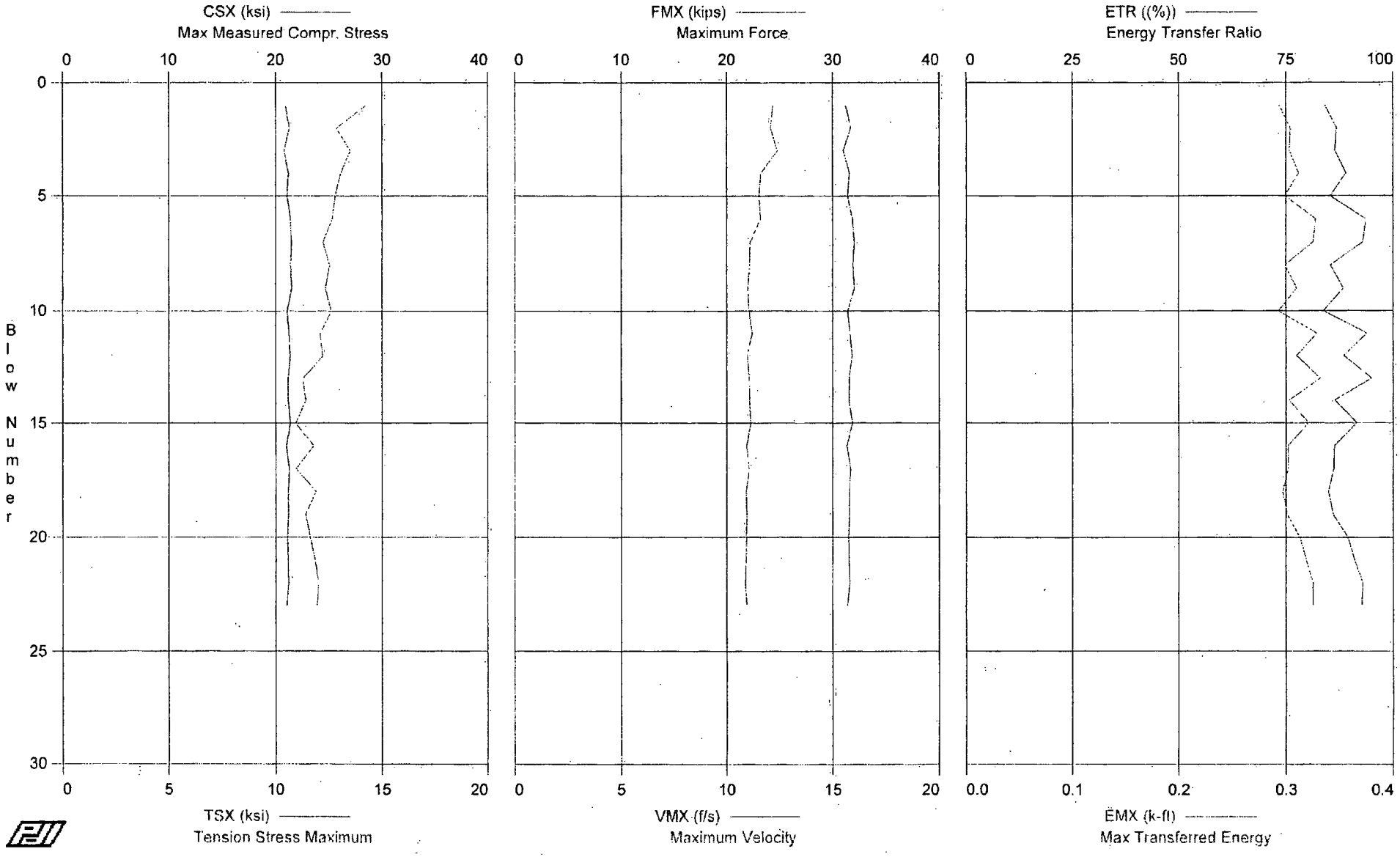
REMARKS: FIRST 5 BLOWS OF SAMPLE AT 33.5/35' WERE NOT RECORDED - HAMMER STARTED BEFORE PDA OPERATOR WAS READY

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 1-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-3028; 33.5' - 35' Sample



Plant Vogtle COL Project - Boring B-3028; 33.5' - 35' Sample
OP: SEK

Rig Serial No. 311025 (Gregg Drilling CME 55 Truck)
Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 39.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	20.95	14.25	31	12.2	1.67	26.7	0.309	84.1	0.294
2	0.00	21.27	12.85	32	12.1	2.12	53.5	0.315	86.8	0.304
3	0.00	20.79	13.50	31	12.4	1.21	53.4	0.307	86.5	0.303
4	0.00	21.19	13.05	32	11.6	1.83	53.3	0.318	89.0	0.312
5	0.00	21.08	12.79	31	11.5	1.78	53.5	0.312	85.4	0.299
6	0.00	21.37	12.63	32	11.6	1.99	53.5	0.317	93.7	0.328
7	0.00	21.48	12.20	32	11.1	1.50	53.5	0.319	93.0	0.325
8	0.00	21.41	12.52	32	11.1	1.25	53.7	0.312	85.4	0.299
9	0.00	21.48	12.31	32	11.0	1.52	53.2	0.318	88.5	0.310
10	0.00	21.08	12.60	31	11.1	1.68	53.3	0.310	83.8	0.293
11	0.00	21.23	12.06	32	11.2	1.75	53.5	0.315	93.9	0.329
12	0.00	21.35	12.19	32	11.0	1.42	53.3	0.315	88.5	0.310
13	0.00	21.18	11.25	32	11.1	1.65	53.5	0.316	95.0	0.332
14	0.00	21.16	11.40	32	11.1	1.82	53.1	0.312	86.5	0.303
15	0.00	21.37	10.93	32	11.1	1.56	53.5	0.318	91.6	0.321
16	0.00	21.01	11.76	31	10.9	1.62	53.4	0.310	86.3	0.302
17	0.00	21.25	10.95	32	11.1	1.26	53.2	0.315	86.2	0.302
18	0.00	21.19	11.87	32	10.9	1.28	53.3	0.313	84.9	0.297
19	0.00	21.19	11.38	32	10.9	1.76	53.3	0.315	86.0	0.301
20	0.00	21.13	11.59	31	10.9	1.92	53.3	0.314	89.5	0.313
21	0.00	21.17	11.82	32	10.9	1.57	53.3	0.315	91.1	0.319
22	0.00	21.21	11.99	32	10.9	2.06	53.2	0.315	93.0	0.325
23	0.00	21.05	11.92	31	11.0	1.72	53.5	0.316	92.7	0.325
	Average	21.20	12.16	32	11.2	1.65	52.2	0.314	88.7	0.311

Total number of blows analyzed: 23

Time Summary

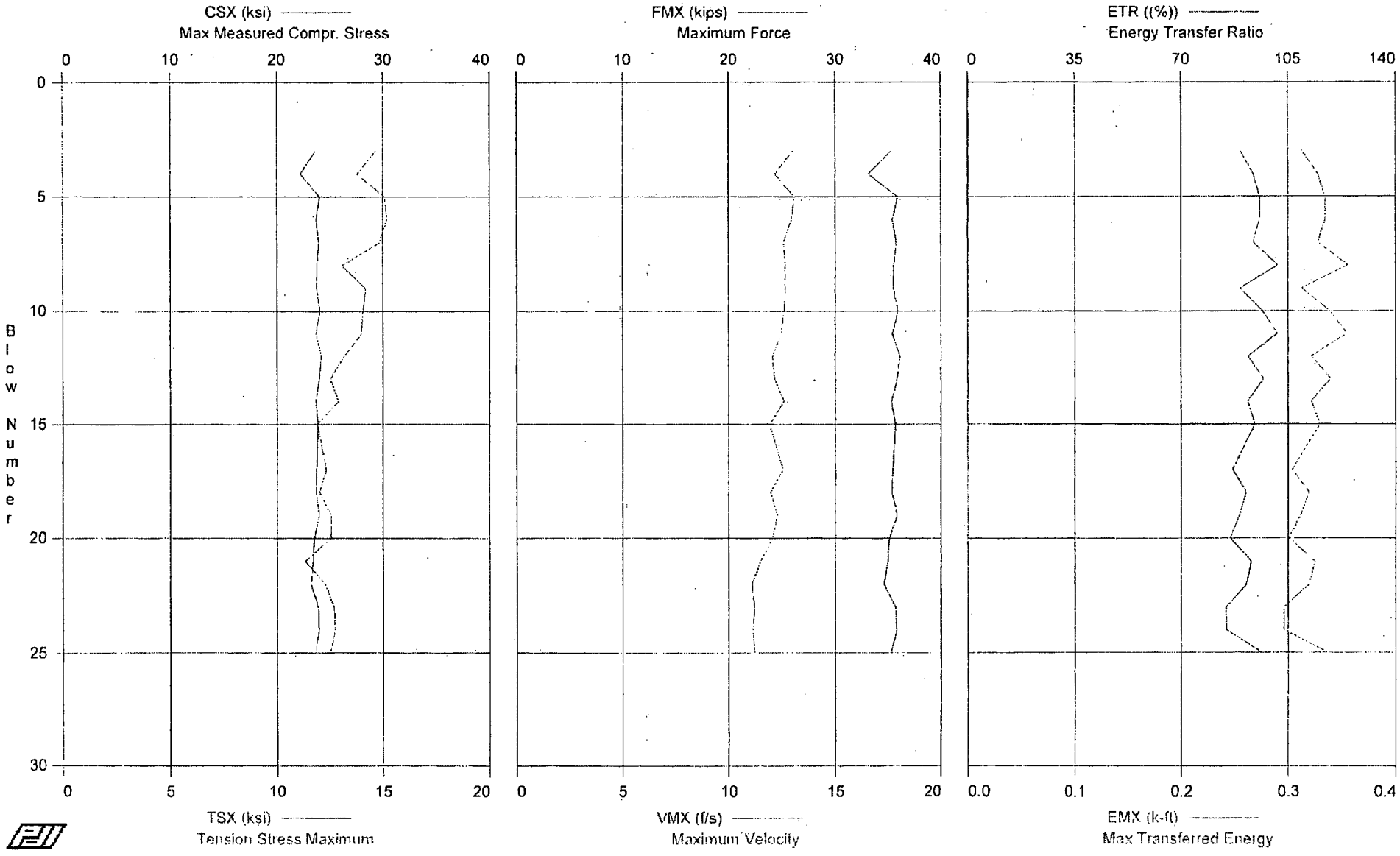
Drive 24 seconds 12:16:58 PM - 12:17:22 PM (2/7/2007) BN 1 - 23

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 1-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-3028; 38.5' - 40' Sample



Plant Vogtle COL Project - Boring B-3028; 38.5' - 40' Sample
OP: SEK

Rig Serial No. 311025 (Gregg Drilling CME 55 Truck)
Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 44.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
3	0.00	23.69	14.66	35	13.0	2.19	53.4	0.326	89.4	0.313
4	0.00	22.25	13.79	33	12.2	2.01	53.6	0.294	93.6	0.328
5	0.00	24.10	15.09	36	13.1	1.79	53.5	0.334	95.8	0.335
6	0.00	23.76	15.18	35	12.9	2.48	53.5	0.325	95.8	0.335
7	0.00	24.01	14.83	36	12.6	1.76	53.6	0.334	93.7	0.328
8	0.00	23.84	13.10	36	12.7	1.60	53.3	0.333	101.7	0.356
9	0.00	23.82	14.20	35	12.7	2.68	53.6	0.328	89.4	0.313
10	0.00	24.12	14.06	36	12.6	2.05	53.6	0.337	96.8	0.339
11	0.00	23.76	14.00	35	12.5	2.19	53.4	0.328	101.5	0.355
12	0.00	24.24	13.19	36	12.1	1.90	53.5	0.330	92.0	0.322
13	0.00	24.06	12.56	36	12.2	1.62	53.5	0.327	97.0	0.340
14	0.00	23.71	12.93	35	12.6	2.72	53.2	0.326	91.9	0.322
15	0.00	23.93	11.93	36	11.9	2.69	53.2	0.319	94.2	0.330
17	0.00	23.78	12.35	35	12.5	2.03	53.4	0.325	86.8	0.304
18	0.00	23.73	12.03	35	12.0	1.72	53.6	0.326	91.3	0.320
19	0.00	24.04	12.59	36	12.3	2.23	53.1	0.328	89.0	0.312
20	0.00	23.57	12.57	35	12.1	2.59	53.5	0.325	85.9	0.301
21	0.00	23.46	11.34	35	11.5	2.02	53.4	0.313	92.9	0.325
22	0.00	23.23	12.31	35	11.1	2.14	53.5	0.311	91.4	0.320
23	0.00	23.93	12.70	36	11.2	2.20	53.3	0.326	84.6	0.296
24	0.00	24.01	12.76	36	11.1	1.40	53.5	0.326	84.7	0.296
25	0.00	23.66	12.54	35	11.2	2.38	53.3	0.327	96.4	0.337
	Average	23.76	13.21	35	12.2	2.11	53.4	0.325	92.5	0.324

Total number of blows analyzed: 22

Time Summary

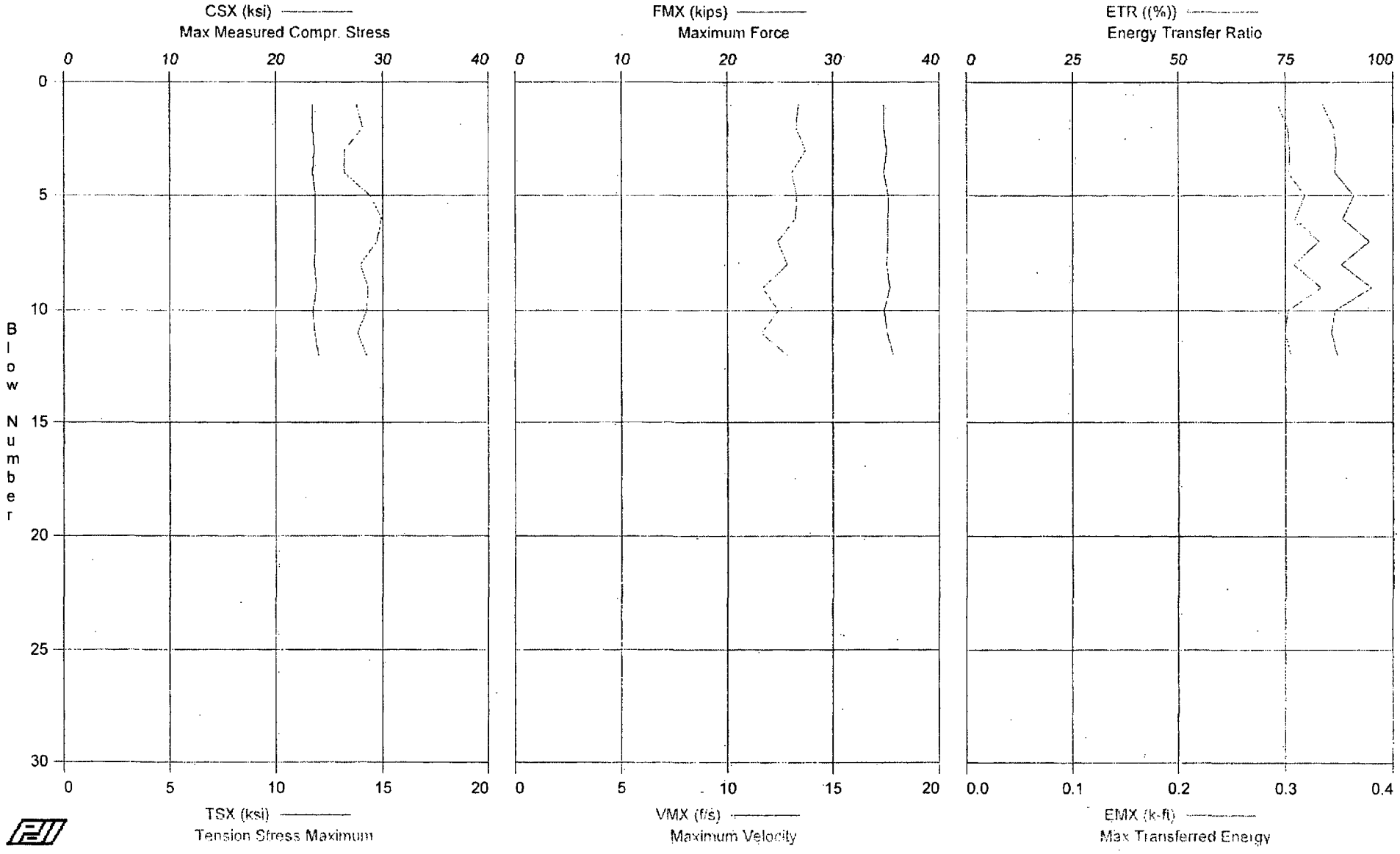
Drive 26 seconds 12:32:20 PM - 12:32:46 PM (2/7/2007) BN 1 - 25

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 1-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-3028; 43.5' - 45' Sample



Plant Vogtle COL Project - Boring B-3028; 43.5' - 45' Sample
OP: SEK

Rig Serial No. 311025 (Gregg Drilling CME 55 Truck)
Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 49.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
16	928,926.00	23.39	13.78	35	13.4	3.00	0.0	0.329	83.6	0.293
26	928,926.00	23.37	14.06	35	13.3	3.38	53.6	0.329	86.1	0.302
36	928,926.00	23.54	13.19	35	13.7	3.20	53.1	0.327	86.8	0.304
46	928,926.00	23.37	13.18	35	13.1	3.08	53.3	0.322	86.5	0.303
56	928,926.00	23.65	14.41	35	13.3	2.85	53.4	0.328	90.9	0.318
66	928,926.00	23.62	14.93	35	13.2	3.38	53.4	0.324	88.3	0.309
76	928,926.00	23.63	14.72	35	12.4	2.54	53.5	0.325	94.5	0.331
86	928,926.00	23.54	13.95	35	12.9	3.08	53.3	0.322	87.9	0.308
96	928,926.00	23.75	14.30	35	11.7	2.19	53.5	0.326	95.1	0.333
106	928,926.00	23.41	14.24	35	12.4	2.65	53.1	0.323	86.4	0.302
116	928,926.00	23.58	13.82	35	11.6	1.62	53.4	0.325	85.7	0.300
126	928,926.00	23.96	14.24	36	12.9	3.29	53.4	0.325	87.0	0.305
	Average	23.57	14.07	35	12.8	2.86	53.4	0.325	88.2	0.309

Total number of blows analyzed: 12

Time Summary

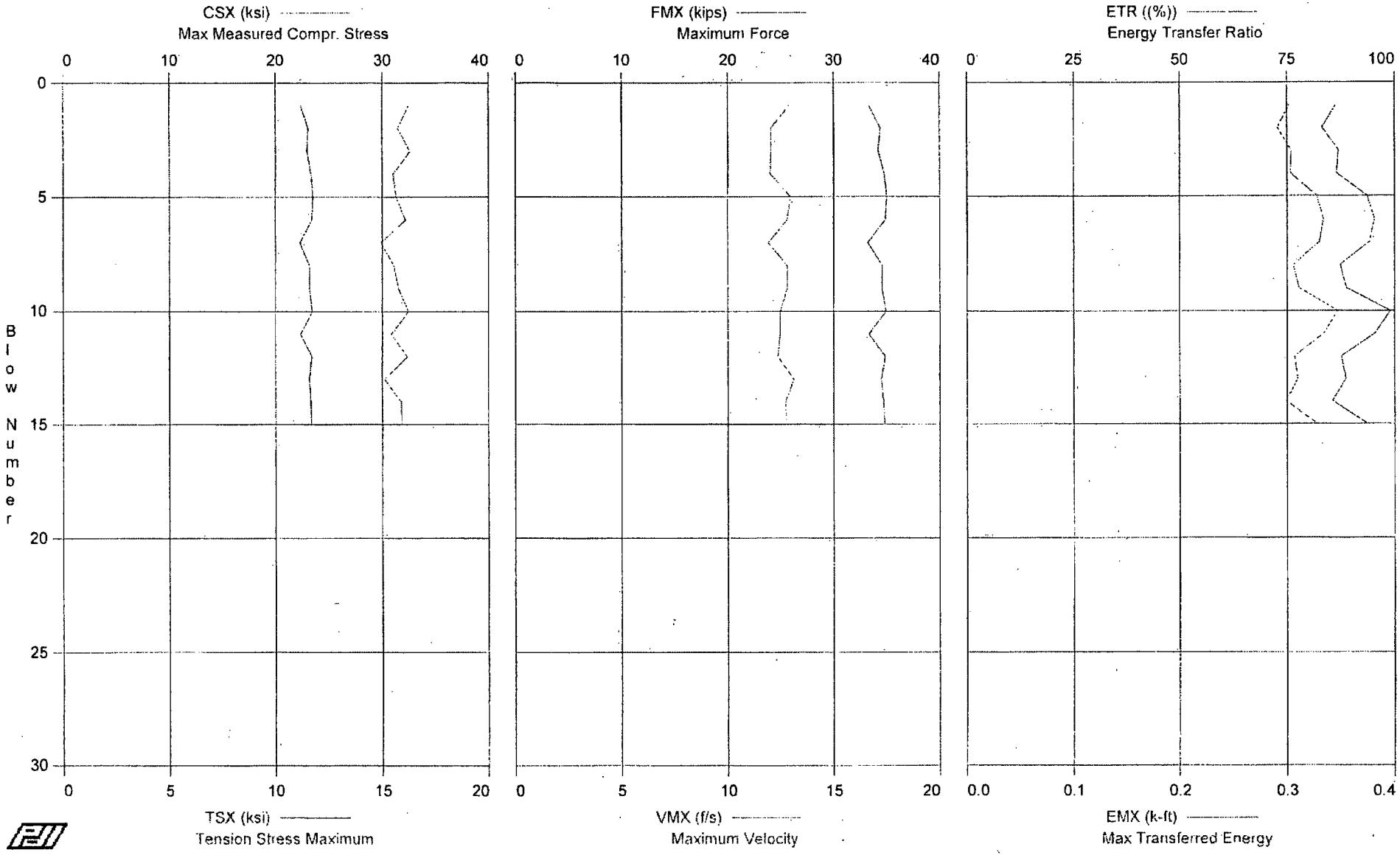
Drive 12 seconds 12:48:24 PM - 12:48:36 PM (2/7/2007) BN 1 - 12

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 1-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-3028; 48.5' - 50' Sample



Plant Vogtle COL Project - Boring B-3028; 48.5' - 50' Sample
OP: SEK

Rig Serial No. 311025 (Gregg Drilling CME 55 Truck)
Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 54.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
1	0.00	22.40	16.20	33	12.9	2.97	0.0	0.328	86.3	0.302
2	0.00	23.08	15.71	34	12.0	1.68	53.9	0.317	83.2	0.291
3	0.00	22.95	16.28	34	12.0	2.08	53.3	0.322	87.0	0.304
4	0.00	23.34	15.50	35	12.0	2.14	53.3	0.321	86.5	0.303
5	0.00	23.50	15.64	35	13.0	2.64	53.1	0.324	93.7	0.328
6	0.00	23.40	16.06	35	12.8	2.54	53.5	0.320	95.3	0.334
7	0.00	22.29	14.94	33	11.9	2.60	53.3	0.296	94.2	0.330
8	0.00	23.20	15.54	35	12.8	2.63	53.5	0.320	87.3	0.306
9	0.00	23.18	15.75	35	12.8	2.66	53.4	0.317	88.8	0.311
10	0.00	23.44	16.21	35	12.5	2.40	53.2	0.322	99.1	0.347
11	0.00	22.37	15.41	33	12.4	3.02	53.2	0.293	95.4	0.334
12	0.00	23.39	16.15	35	12.3	2.71	53.2	0.322	87.6	0.307
13	0.00	23.14	15.10	34	13.1	3.32	53.1	0.315	88.7	0.310
14	0.00	23.28	15.86	35	12.7	3.73	53.2	0.317	85.5	0.299
15	0.00	23.35	15.89	35	12.8	3.72	53.4	0.321	93.7	0.328
	Average	23.09	15.75	34	12.5	2.72	53.3	0.317	90.1	0.316

Total number of blows analyzed: 15

Time Summary

Drive 15 seconds 1:02:23 PM - 1:02:38 PM (2/7/2007) BN 1 - 15

June 27, 2007

Memorandum to File DCN VGCOL 276
From: Steve Kiser
Reviewed By: Pieter Depree

Subject: **Report of SPT Energy – Miller Drilling CME 85 Truck Hammer Serial No. 270256 Automatic Hammer WORK INSTRUCTION VGCOL 276**
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on March 1, 2007, during drilling of Boring B-3004 at the referenced site. The testing was performed from approximately 9:05 to 10:10 AM under cloudy skies and a temperature of about 57 degrees Fahrenheit. The boring was drilled with personnel and equipment from Miller Drilling. The drilling equipment consisted of a CME 85 model truck-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of NW-J-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the boring below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Glen Bilbrey. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. NW #146/1 and NW#146/2). An NW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.49 square inches and an outside diameter of approximately 2.625 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 2.625 and 2.25 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

16 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 272 foot-pounds to 308 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 78% to 88% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 288.9 foot-pounds, with a weighted average ETR of 82.5%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 276 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 16 PDIPLOT Output – 10 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
270256 (CME 85 Truck)	Miller Drilling	Glen Bilbrey	B-3004	NW-J	3/1/2007	13.5 - 15.0	9 - 11 - 11	30	272	77.7%
						18.5 - 20.0	8 - 9 - 12	30	283	80.9%
						23.5 - 25.0	5 - 12 - 18	32	304	86.9%
						28.5 - 30.0	3 - 9 - 11	22	304	86.9%
						33.5 - 35.0	2 - 2 - 5	9	308	88.0%
							Weighted Average for Rig:		**288.9**	**82.5%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By: SLW	Date: 6-27-07	Checked By: WAC	Date: 7/3/07

Work Instructions – SPT Energy MACTEC CME-85 (Bilbrey)
(Hammer #270256)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 2/26/07

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 2/26/07 To: 2/26/08

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 2/26/07

No. of Pages: 1 DCN: VGCOL 276

MACTEC

2801 YORKMONT ROAD, SUITE 100 D CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME 85
LOCATION:	Waynesboro, Georgia	MODEL:	85 TRUCK
PROJECT NO.:	6141-06-0286	SERIAL NO.:	270256
DATE:	3-1-07	HAMMER TYPE:	AUTOMATIC
WEATHER:	CLOUDY; FAIR 57°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	NW-J
DRILLING COMPANY:	MILLER DRILLING	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-3004		
DEPTH DRILLED:	150'		
TIME DRIVEN:	9:00 AM		
RIG OPERATOR:	GLEN BILBREY		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.49 in²		
ACCEL. SERIAL NOS.:	P5094 / P5953		
STRAIN SERIAL NOS.:	146 NW #1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
13.5/15'	9-11-11										
18.5/20'	8-9-12										
23.5/25'	5-12-18										
28.5/30'	3-9-11										
33.5/35'	2-2-5										

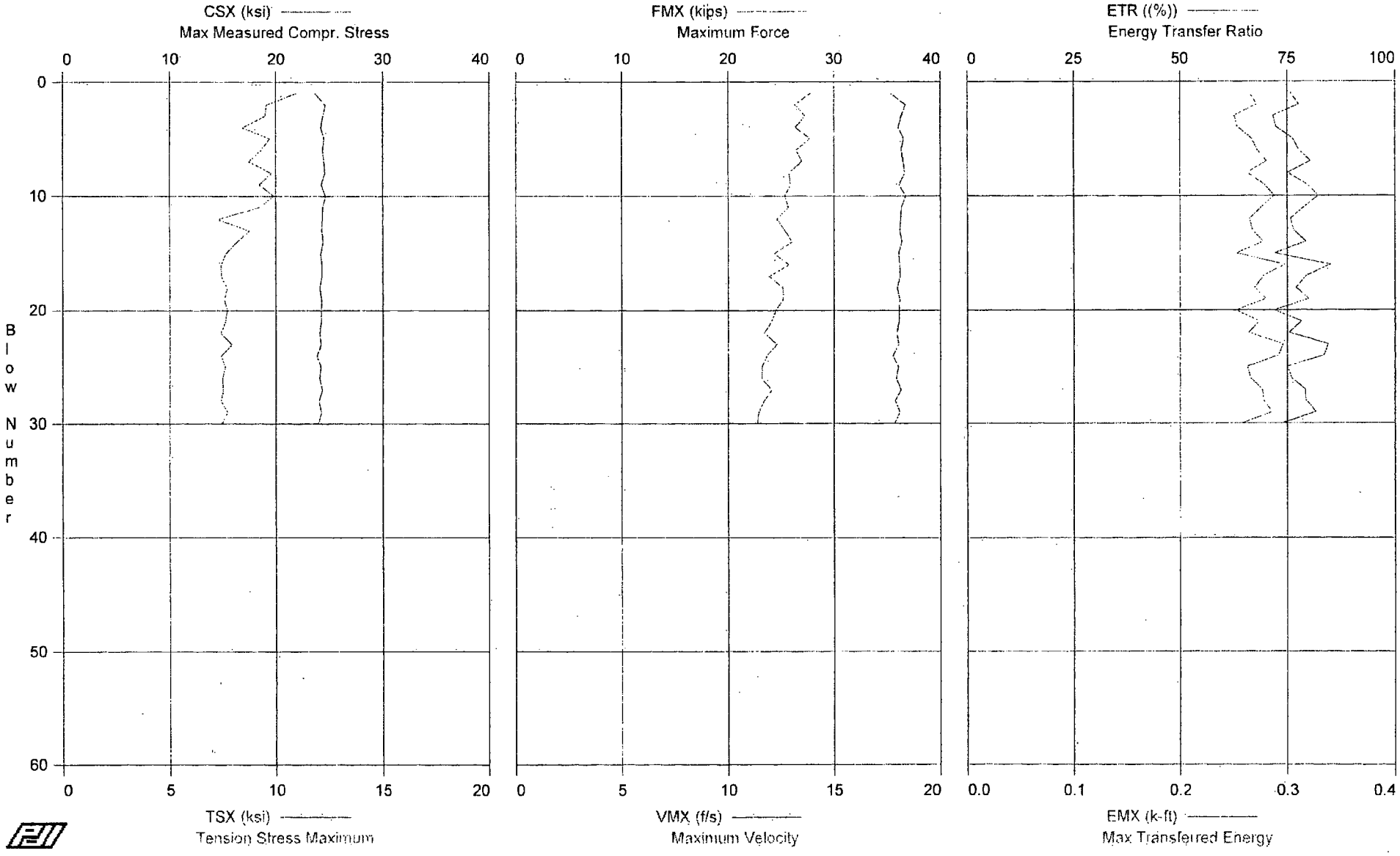
REMARKS:

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 1-Mar-2007

Plant Vogtle COL Project - Boring B-3004; 13.5' - 15' Sample



Plant Vogtle COL Project - Boring B-3004; 13.5' - 15' Sample
OP: SEK

Rig Serial No. 270256 (Miller Drilling CME 85 Truck)
Test date: 1-Mar-2007

AR: 1.49 in^2
LE: 19.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
1	0.00	23.70	10.95	35	13.9	0.75	0.0	0.301	75.8	0.265
2	0.00	24.66	9.54	37	13.2	2.27	52.5	0.302	77.7	0.272
3	0.00	24.42	9.49	36	13.6	2.96	26.2	0.302	71.8	0.251
4	0.00	24.21	8.44	36	13.2	1.23	52.2	0.299	72.4	0.254
5	0.00	24.56	9.71	37	13.9	2.28	52 1	0.302	76.2	0.267
6	0.00	24.40	9.29	36	13.2	1.49	52.2	0.302	77.7	0.272
7	0.00	24.52	8.73	37	13.5	2.20	52.0	0.304	80.4	0.281
8	0.00	24.62	9.78	37	12.9	0.41	52.0	0.305	75.1	0.263
9	0.00	24.28	9.22	36	13.0	1.37	52.2	0.303	79.6	0.279
10	0.00	24.68	9.91	37	12.7	1.37	51.9	0.305	82.2	0.288
11	0.00	24.40	9.17	36	12.8	1.62	52.2	0.300	78.8	0.276
12	0.00	24.38	7.27	36	12.3	1.79	51.9	0.303	75.8	0 265
13	0.00	24.31	8.76	36	12.7	1.27	52.1	0.303	76.6	0.268
14	0.00	24.44	8.17	36	13.0	2.36	52.2	0.300	79.4	0.278
15	0.00	24.23	7.67	36	12.2	1.36	52.2	0.302	72.2	0.253
16	0.00	24.31	7.43	36	12.9	2.37	51.9	0.301	85.0	0.298
17	0.00	24.34	7.44	36	11.9	1.49	52.0	0.302	79.5	0.278
18	0.00	24.14	7.73	36	12.6	1.14	52.1	0.303	77.1	0.270
19	0.00	24.30	7.60	36	12.6	1.86	51.9	0.300	80.0	0.280
20	0.00	24.26	7.72	36	12.2	0.68	51.9	0.299	72.0	0.252
21	0.00	24.26	7.64	36	12.0	2.12	52.0	0.301	78.3	0.274
22	0.00	24.12	7.42	36	11.7	1.47	52.1	0.301	75.4	0.264
23	0.00	24.24	7.95	36	12.3	2.19	52.1	0.301	84.5	0.296
24	0.00	23.86	7.43	36	11.8	1.87	52.0	0.299	83.5	0.292
25	0.00	24.21	7.63	36	11.6	1.61	51.9	0.298	75.0	0.263
26	0.00	24.09	7.50	36	11.6	1.74	52.0	0.300	76.0	0.266
27	0.00	24.37	7.53	36	12.0	1.81	51.9	0.301	79.2	0.277
28	0.00	24.02	7.44	36	11.7	1.41	52.0	0.300	79.4	0.278
29	0.00	24.30	7.75	36	11.4	1.70	51.9	0.304	81.7	0.286
30	0.00	23.98	7.47	36	11.4	1.64	52.1	0.298	73.8	0.258
	Average	24.29	8.33	36	12.5	1.66	51.2	0.301	77.7	0.272

Total number of blows analyzed: 30

Time Summary

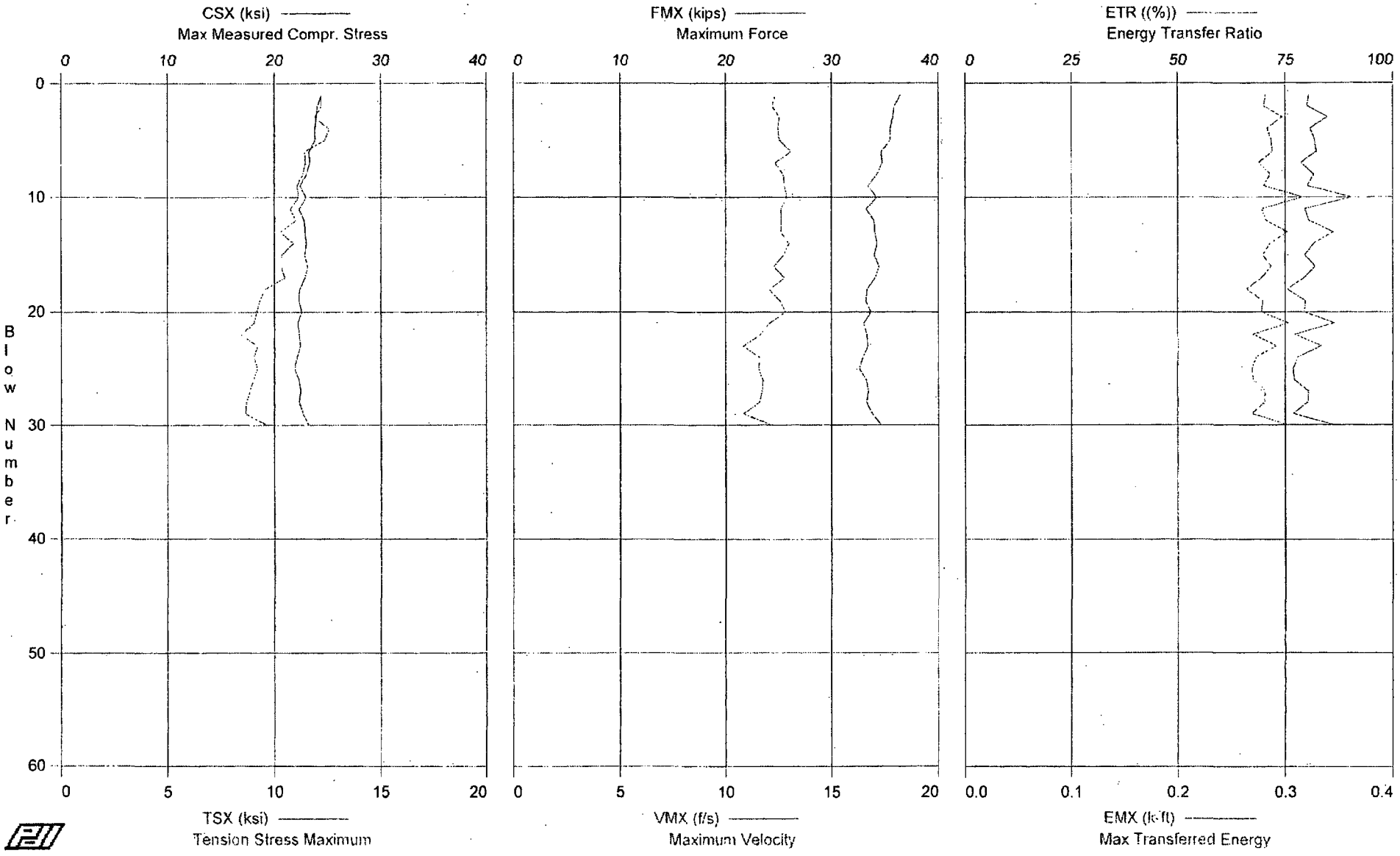
Drive 35 seconds 9:05:09 AM - 9:05:44 AM (3/1/2007) BN 1 - 30

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 1-Mar-2007

Plant Vogtle COL Project - Boring B-3004; 18.5' - 20' Sample



Plant Vogtle COL Project - Boring B-3004; 18.5' - 20' Sample
Rig Serial No. 270256 (Miller Drilling CME 85 Truck)
OP: SEK
Test date: 1-Mar-2007

AR: 1.49 in^2
LE: 24.00 ft
WS: 16,807.9 f/s
SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement
BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	24.46	12.22	36	12.4	2.18	0.0	0.311	80.5	0.282
2	0.00	24.09	12.22	36	12.2	1.55	53.1	0.308	80.0	0.280
3	0.00	23.97	11.91	36	12.5	2.82	52.6	0.306	84.8	0.297
4	0.00	23.83	12.58	36	12.5	1.84	52.5	0.300	80.8	0.283
5	0.00	23.84	12.40	36	12.5	2.18	52.4	0.303	81.9	0.287
6	0.00	23.26	11.43	35	13.1	2.40	52.4	0.296	82.2	0.288
7	0.00	23.32	11.45	35	12.3	5.47	52.2	0.296	78.6	0.275
8	0.00	23.00	11.34	34	12.7	2.56	52.3	0.292	81.6	0.286
9	0.00	22.43	11.06	33	12.8	2.04	52.4	0.288	80.1	0.280
10	0.00	22.98	11.12	34	12.9	2.69	52.2	0.294	90.4	0.316
11	0.00	22.32	10.74	33	12.6	1.68	52.2	0.288	79.5	0.278
12	0.00	22.81	10.99	34	12.6	1.79	52.4	0.288	80.5	0.282
13	0.00	22.86	10.27	34	12.6	1.93	52.2	0.290	86.2	0.302
14	0.00	22.99	10.89	34	13.0	2.37	52.2	0.290	81.6	0.286
15	0.00	22.82	10.34	34	12.7	1.73	52.3	0.288	79.6	0.279
16	0.00	23.13	10.32	34	12.3	1.70	52.1	0.293	82.0	0.287
17	0.00	22.87	10.49	34	12.8	1.77	52.4	0.285	79.4	0.278
18	0.00	22.37	9.55	33	12.1	2.03	52.2	0.285	75.5	0.264
19	0.00	22.30	9.33	33	12.6	1.90	52.1	0.283	79.7	0.279
20	0.00	22.60	9.19	34	12.8	1.63	52.2	0.284	79.4	0.278
21	0.00	22.17	9.04	33	12.1	4.03	52.1	0.284	86.5	0.303
22	0.00	22.35	8.46	33	11.6	1.59	52.3	0.280	77.2	0.270
23	0.00	22.44	9.23	33	10.8	1.81	52.2	0.283	83.4	0.292
24	0.00	22.11	9.06	33	11.6	1.75	52.2	0.283	77.9	0.273
25	0.00	21.87	9.23	33	11.6	1.89	52.2	0.281	76.9	0.269
26	0.00	22.32	9.02	33	11.8	2.21	52.1	0.281	77.1	0.270
27	0.00	22.47	8.87	33	11.7	0.52	52.2	0.288	80.4	0.281
28	0.00	22.34	8.70	33	11.6	1.26	52.1	0.285	80.3	0.281
29	0.00	22.69	8.68	34	10.8	1.79	52.0	0.284	76.8	0.269
30	0.00	23.25	9.65	35	12.2	3.36	52.2	0.288	86.3	0.302
	Average	22.88	10.33	34	12.3	2.15	52.3	0.290	80.9	0.283

Total number of blows analyzed: 30

Time Summary

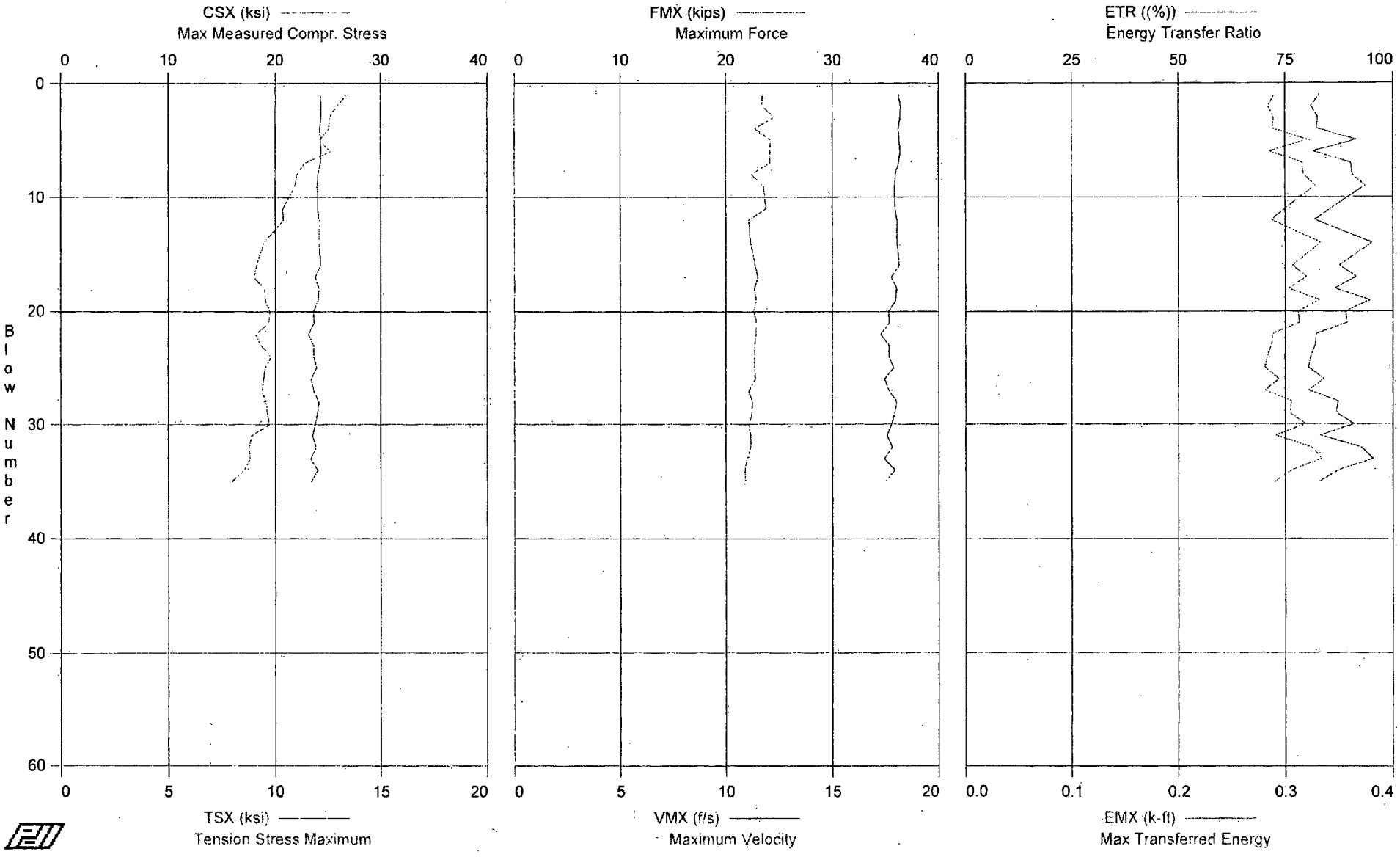
Drive 33 seconds 9:23:00 AM - 9:23:33 AM (3/1/2007) BN 1 - 30

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 1-Mar-2007

Plant Vogtle COL Project - Boring B-3004; 23.5' - 25' Sample



Plant Vogtle COL Project - Boring B-3004; 23.5' - 25' Sample
OP: SEK

Rig Serial No. 270256 (Miller Drilling CME 85 Truck)
Test date: 1-Mar-2007

AR: 1.49 in^2
LE: 29.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	24.32	13.41	36	11.7	2.34	0.0	0.314	83.0	0.290
2	0.00	24.42	12.95	36	11.7	2.07	53.8	0.314	81.1	0.284
3	0.00	24.40	12.60	36	12.3	2.57	53.8	0.310	82.6	0.289
4	0.00	24.28	12.58	36	11.4	2.21	53.6	0.315	82.3	0.288
5	0.00	24.34	12.12	36	12.1	3.17	53.5	0.312	91.7	0.321
6	0.00	24.40	12.66	36	12.1	4.33	53.3	0.313	81.5	0.285
7	0.00	24.32	11.42	36	12.1	3.89	53.5	0.313	90.4	0.316
8	0.00	24.09	11.04	36	11.2	3.24	53.3	0.313	90.7	0.317
9	0.00	24.04	10.94	36	11.8	4.10	53.5	0.312	93.6	0.328
11	0.00	24.07	10.36	36	11.9	3.67	53.4	0.308	85.6	0.300
12	0.00	24.20	10.39	36	11.1	1.83	53.3	0.310	81.9	0.287
14	0.00	24.19	9.45	36	11.2	3.03	53.4	0.312	95.2	0.333
16	0.00	24.34	9.13	36	11.4	1.40	53.3	0.315	87.6	0.307
17	0.00	23.82	8.99	35	11.5	3.16	53.5	0.312	91.6	0.320
18	0.00	24.18	9.48	36	11.3	2.31	53.3	0.314	86.6	0.303
19	0.00	24.11	9.53	36	11.4	1.46	53.4	0.316	94.8	0.332
20	0.00	23.66	9.75	35	11.3	1.81	53.4	0.314	89.1	0.312
21	0.00	23.71	9.71	35	11.4	1.47	53.4	0.312	89.5	0.313
22	0.00	23.17	9.09	35	11.4	0.86	53.5	0.313	82.2	0.288
23	0.00	23.69	9.35	35	11.3	1.16	53.4	0.307	81.9	0.287
24	0.00	23.69	9.81	35	11.4	1.96	53.3	0.311	81.0	0.283
25	0.00	23.98	9.53	36	11.3	1.05	53.5	0.308	80.4	0.281
26	0.00	23.41	9.46	35	11.4	1.86	53.2	0.309	84.0	0.294
27	0.00	23.69	9.37	35	11.1	1.41	53.3	0.308	80.4	0.281
28	0.00	24.17	9.57	36	11.2	1.96	53.5	0.312	87.3	0.306
29	0.00	24.04	9.62	36	11.2	2.05	53.3	0.312	86.9	0.304
30	0.00	23.85	9.73	36	11.1	2.03	53.3	0.310	91.0	0.319
31	0.00	23.57	8.90	35	11.2	1.89	53.4	0.310	83.1	0.291
32	0.00	23.90	8.79	36	11.2	2.35	53.2	0.313	92.7	0.324
33	0.00	23.38	8.83	35	11.0	2.49	53.4	0.296	95.5	0.334
34	0.00	24.07	8.56	36	10.9	1.50	53.3	0.314	87.4	0.306
35	0.00	23.44	8.00	35	10.9	1.60	53.3	0.310	82.9	0.290
	Average	23.97	10.16	36	11.4	2.26	53.4	0.311	86.7	0.304

Total number of blows analyzed: 32

Time Summary

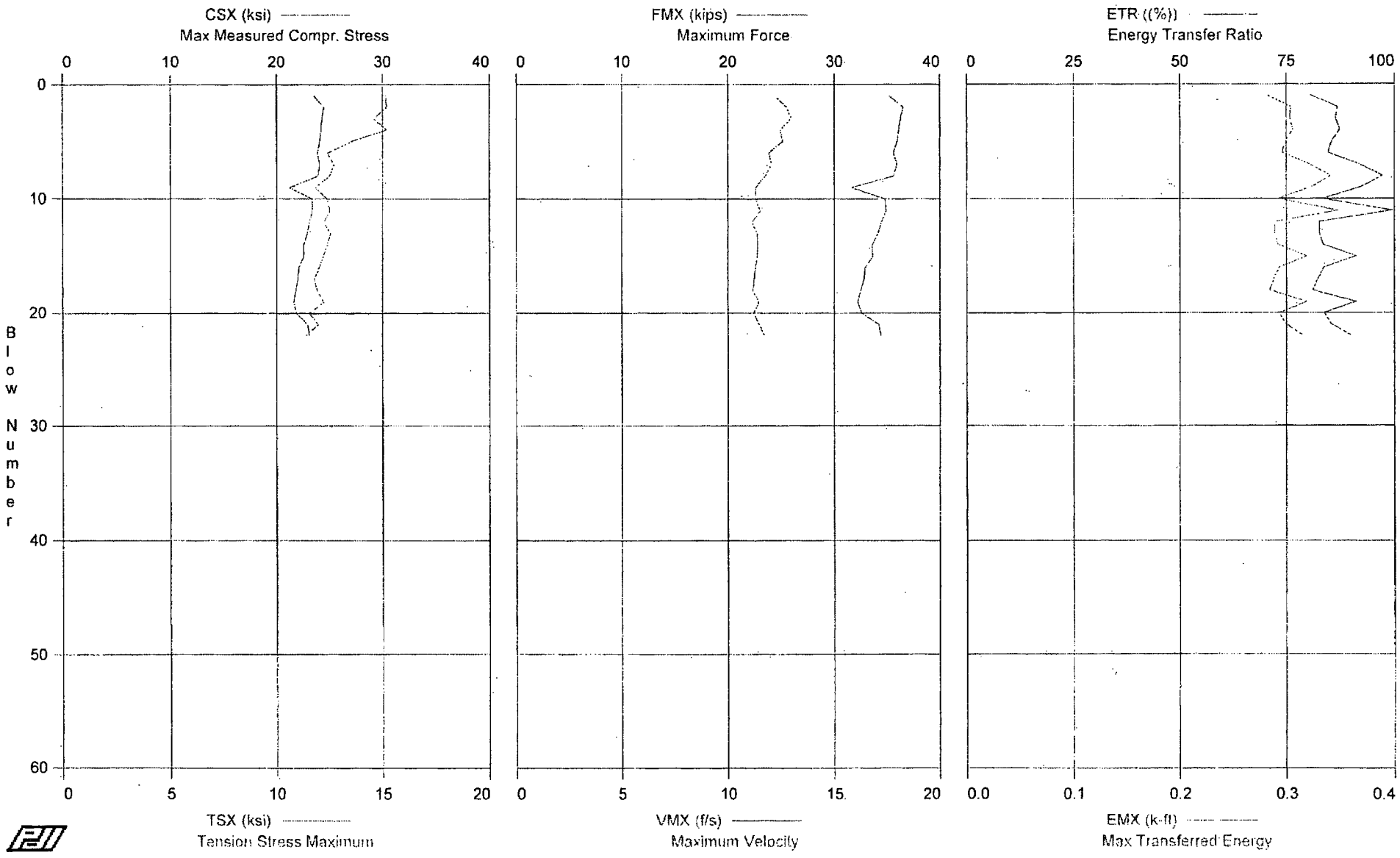
Drive 39 seconds 9:36:12 AM - 9:36:51 AM (3/1/2007) BN 1 - 35

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 1-Mar-2007

Plant Vogtle COL Project - Boring B-3004; 28.5' - 30' Sample



Plant Vogtle COL Project - Boring B-3004; 28.5' - 30' Sample
OP: SEK

Rig Serial No. 270256 (Miller Drilling CME 85 Truck)
Test date: 1-Mar-2007

AR: 1 49 in^2
LE: 34.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	23.61	15.16	35	12.2	3.78	0.0	0.305	80.7	0.282
2	0.00	24.51	15.21	37	12.8	3.41	23.7	0.320	87.0	0.304
3	0.00	24.35	14.61	36	13.0	3.27	55.1	0.311	86.4	0.303
4	0.00	24.24	15.20	36	12.5	2.70	53.9	0.312	87.4	0.306
5	0.00	24.14	13.57	36	12.6	3.26	53.9	0.307	85.5	0.299
6	0.00	23.91	12.44	36	11.9	2.28	54.0	0.309	84.6	0.296
7	0.00	24.13	12.74	36	12.0	2.78	53.8	0.314	91.8	0.321
8	0.00	23.92	12.54	36	11.8	3.06	53.8	0.312	97.4	0.341
9	0.00	21.22	11.85	32	11.3	2.15	53.7	0.250	92.2	0.323
10	0.00	23.41	12.41	35	11.3	2.03	53.7	0.307	83.4	0.292
11	0.00	23.43	12.55	35	11.5	2.14	53.6	0.309	99.5	0.348
12	0.00	23.14	12.27	34	11.1	1.83	54.0	0.302	82.7	0.289
13	0.00	22.92	12.57	34	11.4	1.81	53.9	0.300	82.7	0.289
14	0.00	22.57	12.42	34	11.4	1.60	53.6	0.300	83.5	0.292
15	0.00	22.59	12.22	34	11.4	2.23	53.9	0.300	91.2	0.319
16	0.00	22.11	12.03	33	11.3	2.07	53.7	0.293	83.7	0.293
17	0.00	22.04	11.80	33	11.2	1.21	53.7	0.294	82.3	0.288
18	0.00	21.83	11.94	33	11.2	1.57	53.6	0.291	81.1	0.284
19	0.00	21.63	12.26	32	11.4	2.01	53.9	0.295	91.3	0.319
20	0.00	21.88	11.56	33	11.2	1.62	53.7	0.295	83.7	0.293
21	0.00	22.97	11.99	34	11.5	2.10	53.5	0.299	85.4	0.299
22	0.00	23.11	11.40	34	11.7	2.21	53.8	0.307	90.0	0.315
	Average	23.08	12.76	34	11.7	2.32	52.4	0.301	87.0	0.304

Total number of blows analyzed: 22

Time Summary

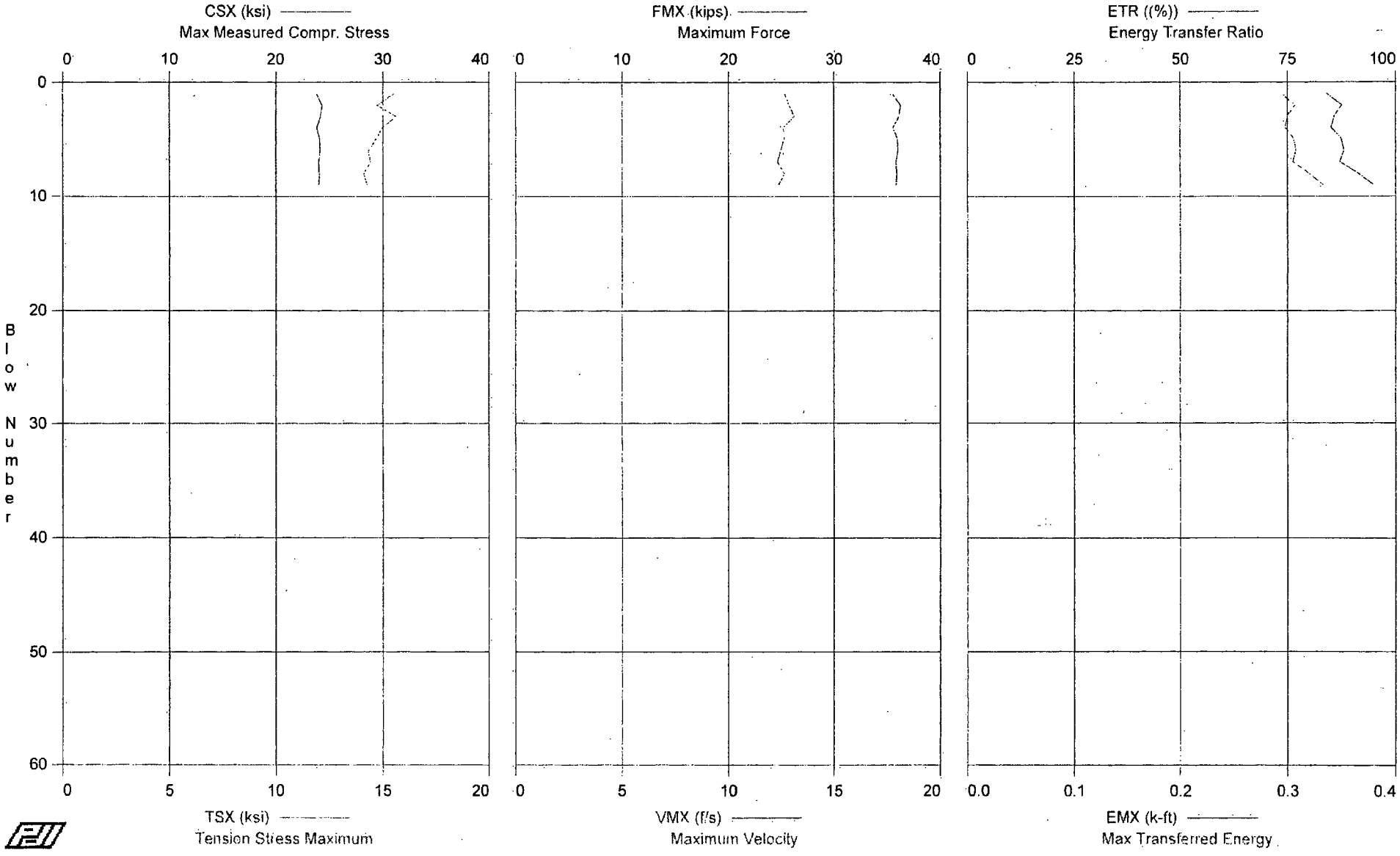
Drive 26 seconds 9:53:47 AM - 9:54:13 AM (3/1/2007) BN 1 - 23

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 1-Mar-2007

Plant Vogtle COL Project - Boring B-3004; 33.5' - 35' Sample



Plant Vogtle COL Project - Boring B-3004; 33.5' - 35' Sample
OP: SEK

Rig Serial No. 270256 (Miller Drilling CME 85 Truck)
Test date: 1-Mar-2007

AR: 1.49 in^2
LE: 39.00 ft
WS: 16,807.9 f/s

SP. 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
1	0.00	23.84	15.51	36	12.7	3.50	0.0	0.311	84.0	0.294
2	0.00	24.35	14.75	36	12.9	3.27	54.5	0.304	87.6	0.307
3	0.00	24.23	15.62	36	13.1	3.87	54.1	0.304	85.8	0.300
4	0.00	23.86	14.98	36	12.6	3.49	54.0	0.305	85.1	0.298
5	0.00	24.15	14.70	36	12.6	3.26	53.8	0.304	87.5	0.306
6	0.00	24.18	14.34	36	12.5	2.83	53.8	0.305	88.1	0.308
7	0.00	24.04	14.44	36	12.3	3.14	53.9	0.305	87.1	0.305
8	0.00	24.11	14.11	36	12.7	3.12	53.7	0.306	91.4	0.320
9	0.00	24.07	14.29	36	12.4	3.07	53.9	0.308	95.0	0.333
	Average	24.09	14.75	36	12.6	3.28	54.0	0.306	88.0	0.308

Total number of blows analyzed: 9

Time Summary

Drive 9 seconds 10:08:35 AM - 10:08:44 AM (3/1/2007) BN 1 - 9

June 27, 2007

Memorandum to File DCN VGCOL 101
From: Steve Kiser
Reviewed By: Pieter Depree

Subject: **Report of SPT Energy – MACTEC Raleigh CME 55LC Track Hammer Serial No. 331145 Automatic Hammer**
WORK INSTRUCTION VGCOL 101
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on December 20, 2006, during drilling of Boring B-1154 at the referenced site. The testing was performed from approximately 11:10 AM to 12:15 PM under cloudy skies and a temperature of about 50 degrees Fahrenheit. The boring was drilled with personnel and equipment from the Raleigh office of MACTEC. The drilling equipment consisted of a CME 55LC model track-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of AW-J-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the boring below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. David White. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. AW #144/1 and AW#144/2). An AW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.19 square inches and an outside diameter of approximately 1.75 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 1.75 and 1.375 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

17 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 300 foot-pounds to 315 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 86% to 90% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 309.5 foot-pounds, with a weighted average ETR of 88.4%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 101 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 17 PDIPLOT Output – 11 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 and 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
331145 (CME 55LC Track)	MACTEC Raleigh	David White	B-1154	AW-J	12/20/2006	78.5 - 80.0	4 - 7 - 8	18	315	90.0%
						83.5 - 85.0	9 - 14 - 21	42	300	85.7%
						88.5 - 90.0	7 - 14 - 26	47	315	90.0%
						93.5 - 95.0	14 - 24 - 48	85	307	87.7%
						98.5 - 100.0	50 / 3"	48	315	90.0%
							Weighted Average for Rig:		**309.5**	**88.4%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By: [illegible]	Date: 6-27-07	Checked By: WAC	Date: 7/31/07

Work Instructions – SPT Energy MACTEC CME-55LC (White)
(Hammer #331145)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 12/20/06

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 12/20/06 To: 12/20/07

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 12/20/06

No. of Pages: 1 DCN: VGCOL 101

MACTEC

2801 YORKMONT ROAD, SUITE 100 | CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME
LOCATION:	Waynesboro, Georgia	MODEL:	55LC TRACK
PROJECT NO.:	6141-06-0286	SERIAL NO.:	331145
DATE:	12-20-06	HAMMER TYPE:	AUTOMATIC
WEATHER:	CLOUDY COOL 50°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	AW-J
DRILLING COMPANY:	MACTEC RALEIGH	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-1154		
DEPTH DRILLED:	100' PLANNED		
TIME DRIVEN:	12:15 PM		
RIG OPERATOR:	DAVID WHITE		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.19 in²		
ACCEL. SERIAL NOS.:	P5094 / P5953		
STRAIN SERIAL NOS.:	144 AW 1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
78.5/80'	4-7-8										
83.5/85'	9-14-21										
88.5/90'	7-14-26										
93.5/95'	14-24-48										
98.5/100'	50/3"										

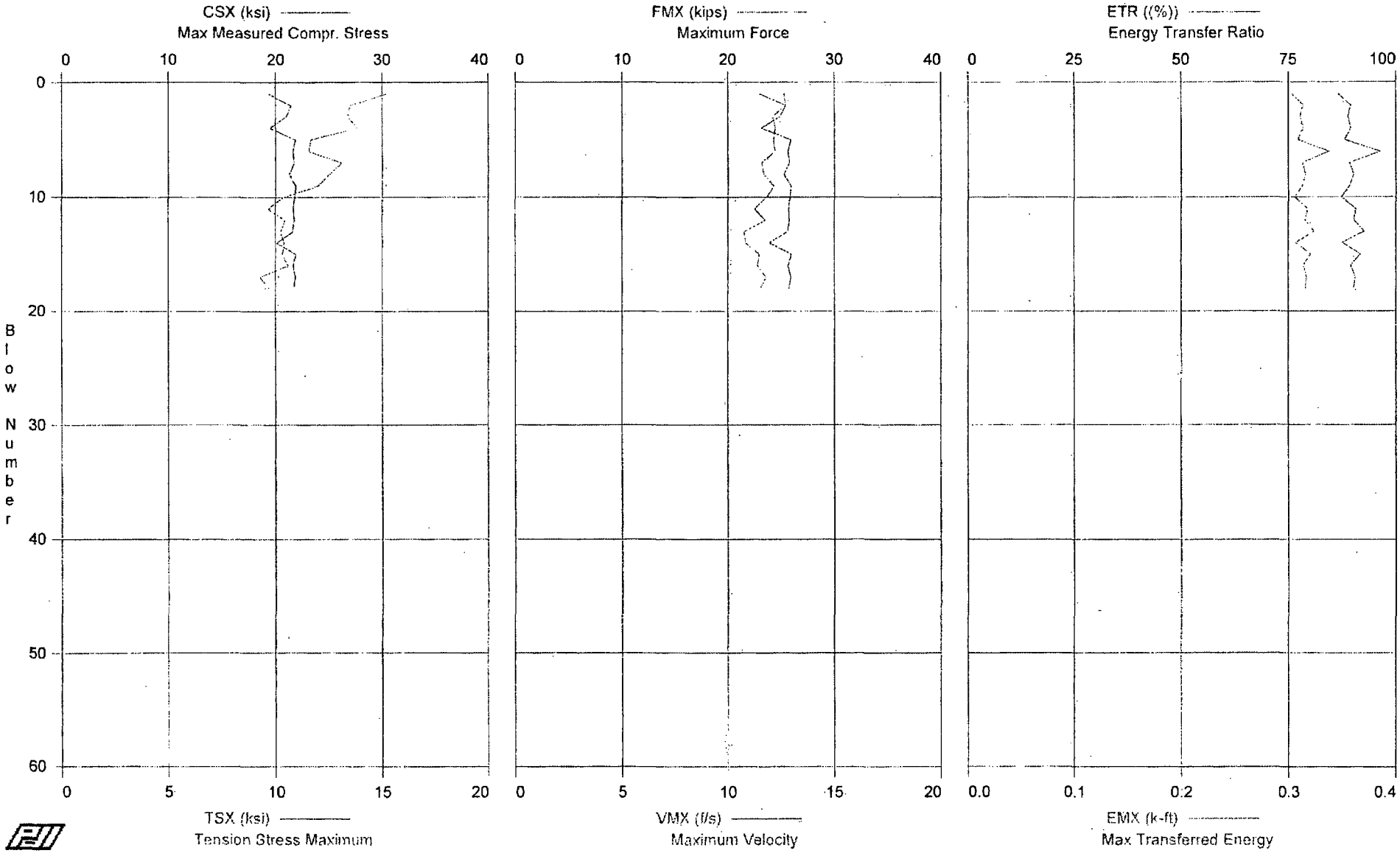
REMARKS:

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-1154; 78.5' - 80' Sample



Vogtle COL Project - Boring B-1154; 78.5' - 80' Sample
OP: SEK

Rig Serial No. 331145(MACTEC Raleigh 55LC)
Test date: 20-Dec-2006

AR: 1.19 in^2
LE: 84.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	19.34	15.21	23	12.7	1.85	0.0	0.000	86.6	0.303
2	0.00	21.42	13.52	25	12.7	2.12	57.4	0.284	89.6	0.314
3	0.00	20.98	13.39	25	12.1	1.93	52.4	0.286	89.0	0.311
4	0.00	19.48	13.82	23	12.3	2.26	52.5	0.289	89.6	0.314
5	0.00	21.80	11.63	26	12.2	2.02	52.4	0.283	88.1	0.309
6	0.00	21.60	11.53	26	12.2	2.08	52.4	0.300	96.5	0.338
7	0.00	21.70	13.11	26	11.6	1.97	52.4	0.285	89.3	0.313
8	0.00	21.26	12.51	25	11.7	2.63	52.5	0.295	90.3	0.316
9	0.00	21.83	11.95	26	12.2	2.69	52.7	0.296	89.4	0.313
10	0.00	21.75	10.35	26	11.8	1.71	52.1	0.281	87.4	0.306
11	0.00	21.63	9.66	26	11.3	1.46	52.4	0.298	90.8	0.318
12	0.00	21.72	10.43	26	11.8	3.56	52.0	0.298	90.4	0.316
13	0.00	21.58	10.22	26	10.8	1.62	52.4	0.296	92.7	0.324
14	0.00	20.10	10.39	24	10.8	2.03	52.2	0.301	87.6	0.307
15	0.00	21.86	10.30	26	11.5	2.05	52.2	0.300	91.8	0.321
16	0.00	21.61	10.57	26	11.4	1.92	52.6	0.294	89.6	0.314
17	0.00	21.81	9.26	26	11.8	0.29	52.3	0.301	90.7	0.317
18	0.00	21.67	9.69	26	11.5	2.00	52.5	0.295	90.3	0.316
	Average	21.29	11.53	25	11.8	2.01	52.7	0.277	90.0	0.315

Total number of blows analyzed: 18

Time Summary

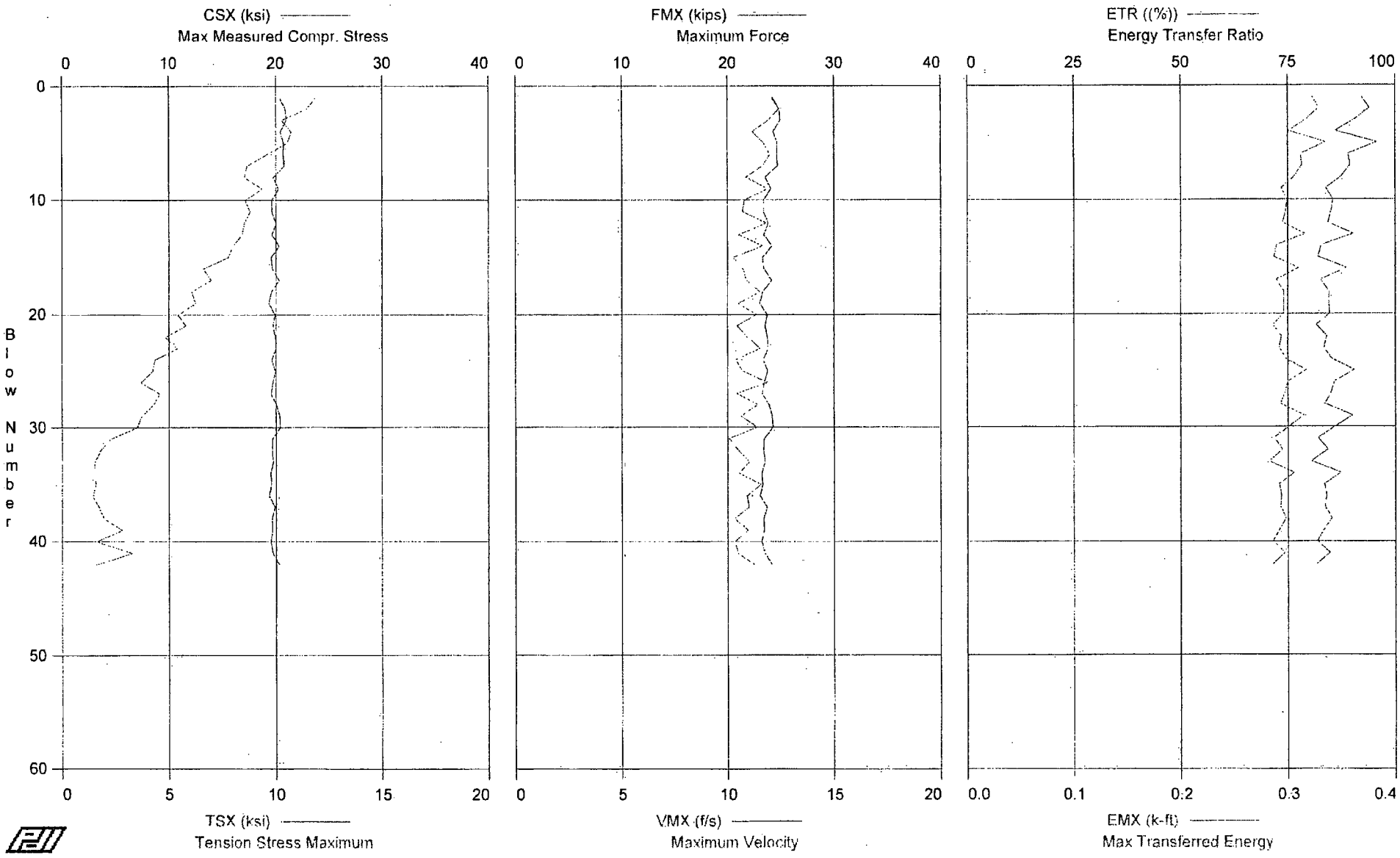
Drive 21 seconds 11:10:12 AM - 11:10:33 AM (12/20/2006) BN 1 - 19

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-1154; 83.5' - 85' Sample



Vogtle COL Project - Boring B-1154; 83.5' - 85' Sample
OP: SEK

Rig Serial No. 331145(MACTEC Raleigh 55LC)
Test date: 20-Dec-2006

AR: 1.19 in^2
LE: 89.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	20.40	11.86	24	12.1	2.19	0.0	0.296	92.2	0.323
2	0.00	20.88	11.44	25	12.4	3.09	55.5	0.273	94.0	0.329
3	0.00	20.98	10.28	25	11.9	1.71	25.8	0.284	90.7	0.317
4	0.00	20.44	10.73	24	11.2	1.87	51.7	0.277	86.1	0.301
5	0.00	20.73	10.53	25	11.7	2.94	51.7	0.275	95.7	0.335
6	0.00	20.72	9.56	25	12.0	1.06	51.5	0.274	89.1	0.312
7	0.00	20.78	8.66	25	11.6	1.43	51.9	0.278	89.5	0.313
8	0.00	19.77	8.55	24	10.9	1.97	51.6	0.276	87.4	0.306
9	0.00	20.25	9.37	24	11.9	0.61	51.6	0.272	83.9	0.294
10	0.00	19.64	8.57	23	10.8	1.49	51.6	0.266	85.5	0.299
11	0.00	19.64	8.81	23	10.7	1.67	51.4	0.272	85.1	0.298
12	0.00	20.02	8.54	24	11.8	1.18	51.7	0.270	84.3	0.295
13	0.00	19.67	8.43	23	10.5	1.61	51.3	0.276	90.3	0.316
14	0.00	20.32	7.99	24	11.6	0.93	51.3	0.275	82.7	0.289
15	0.00	19.56	7.77	23	10.3	1.15	51.7	0.273	82.0	0.287
16	0.00	19.69	6.61	23	10.7	1.09	51.5	0.284	88.7	0.310
17	0.00	20.30	6.98	24	10.9	1.26	51.3	0.279	82.6	0.289
18	0.00	19.58	6.09	23	11.5	1.39	51.5	0.274	84.5	0.296
19	0.00	19.37	6.27	23	10.5	1.13	51.5	0.271	84.6	0.296
20	0.00	19.95	5.45	24	11.4	0.92	51.5	0.275	84.7	0.296
21	0.00	19.75	5.82	23	10.4	1.15	51.7	0.273	81.6	0.286
22	0.00	19.94	4.86	24	10.9	1.07	51.4	0.275	84.0	0.294
23	0.00	20.01	5.42	24	11.5	1.01	51.5	0.267	83.3	0.292
24	0.00	19.62	4.36	23	10.4	0.93	51.5	0.273	85.2	0.298
25	0.00	19.96	4.26	24	10.7	1.23	51.5	0.277	90.5	0.317
26	0.00	19.73	3.70	23	11.9	1.10	51.5	0.269	85.8	0.300
27	0.00	19.54	4.60	23	10.4	1.65	51.5	0.271	85.0	0.297
28	0.00	20.06	4.28	24	11.4	1.30	51.7	0.269	83.6	0.293
29	0.00	20.34	3.74	24	10.6	1.15	51.3	0.284	90.1	0.315
30	0.00	20.40	3.53	24	11.4	1.56	51.6	0.272	86.0	0.301
31	0.00	19.68	2.30	23	10.1	0.58	51.1	0.270	82.0	0.287
32	0.00	19.64	1.82	23	10.5	0.18	51.2	0.271	84.3	0.295
33	0.00	19.75	1.55	23	11.0	0.54	51.4	0.265	80.4	0.282
34	0.00	19.49	1.56	23	10.5	1.06	51.2	0.266	87.4	0.306
35	0.00	19.55	1.60	23	11.6	0.40	51.4	0.264	83.5	0.292
36	0.00	19.37	1.46	23	10.9	0.78	51.3	0.264	84.0	0.294
37	0.00	19.91	1.74	24	11.0	0.83	51.3	0.268	83.6	0.293
38	0.00	19.64	1.98	23	10.3	0.48	51.2	0.278	85.2	0.298
39	0.00	19.68	2.82	23	10.9	0.53	51.4	0.267	83.3	0.292
40	0.00	19.48	1.63	23	10.3	0.58	51.5	0.266	81.8	0.286
41	0.00	19.74	3.28	23	10.5	0.83	51.4	0.278	84.7	0.297
42	0.00	20.30	1.61	24	11.3	0.95	51.2	0.280	81.6	0.286
	Average	19.96	5.72	24	11.1	1.20	50.9	0.273	85.7	0.300

Total number of blows analyzed: 42

Time Summary

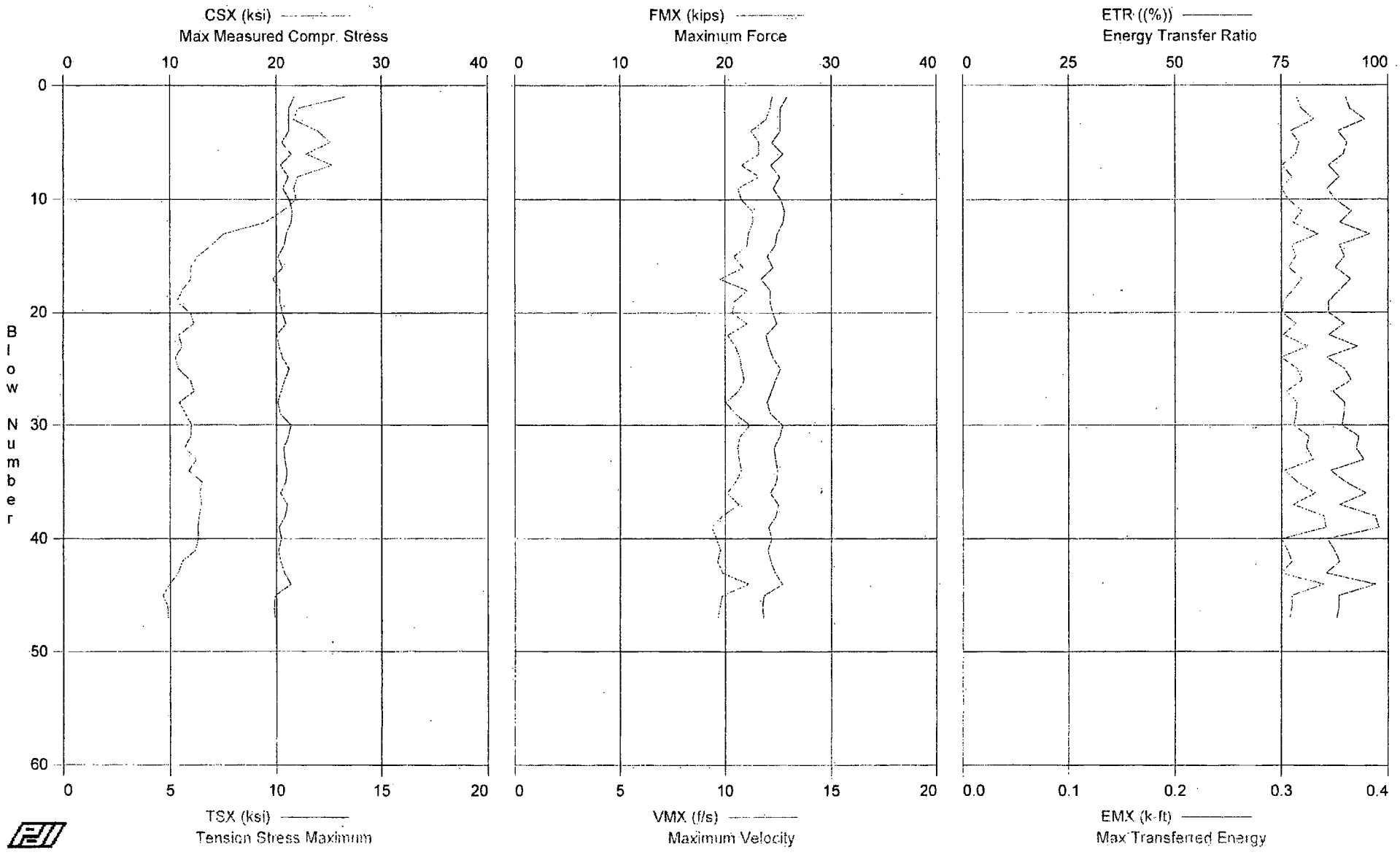
Drive 48 seconds 11:22:54 AM - 11:23:42 AM (12/20/2006) BN 1 - 42

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-1154; 88.5' - 90' Sample



MACTEC Engineering and Consulting, Inc.
Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Vogtle COL Project - Boring B-1154; 88.5' - 90' Sample
OP: SEK

Rig Serial No. 331145(MACTEC Raleigh 55LC)
Test date: 20-Dec-2006

AR: 1.19 in^2
LE: 94.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
1	0.00	21.72	13.26	26	12.2	2.17	0.0	0.319	90.1	0.315
2	0.00	21.21	11.03	25	12.1	3.41	52.9	0.304	91.2	0.319
3	0.00	21.18	10.84	25	11.9	2.70	51.2	0.304	94.6	0.331
4	0.00	21.19	11.97	25	11.2	2.24	51.5	0.305	88.3	0.309
5	0.00	20.53	12.57	24	11.6	2.45	51.2	0.304	90.5	0.317
6	0.00	21.41	11.42	25	11.6	2.07	51.3	0.305	89.7	0.314
7	0.00	20.43	12.66	24	10.8	0.96	50.9	0.307	86.1	0.301
8	0.00	21.14	11.02	25	11.6	1.74	51.3	0.306	88.6	0.310
9	0.00	20.63	10.84	25	10.6	1.66	51.2	0.305	85.8	0.300
10	0.00	21.25	10.95	25	10.8	2.02	51.2	0.306	87.7	0.307
11	0.00	21.52	10.28	26	11.3	1.66	51.5	0.312	91.5	0.320
12	0.00	21.39	9.45	25	11.3	1.51	50.8	0.307	88.8	0.311
13	0.00	20.92	7.49	25	11.1	1.09	51.4	0.311	95.8	0.335
14	0.00	20.77	6.95	25	11.0	1.40	50.9	0.305	88.7	0.310
15	0.00	20.16	6.28	24	10.4	0.75	51.4	0.310	89.8	0.314
16	0.00	20.59	5.96	25	10.9	0.67	50.7	0.304	87.7	0.307
17	0.00	19.67	5.96	23	9.8	1.36	50.8	0.308	91.3	0.320
18	0.00	20.37	5.57	24	11.1	2.01	50.9	0.299	88.8	0.311
19	0.00	20.35	5.32	24	10.4	1.15	51.2	0.302	86.2	0.302
20	0.00	20.59	5.96	24	10.3	1.55	50.9	0.306	86.1	0.301
21	0.00	20.90	6.11	25	11.0	1.65	51.0	0.304	89.7	0.314
22	0.00	20.05	5.40	24	10.1	1.61	50.6	0.300	86.2	0.302
23	0.00	20.28	5.57	24	10.5	1.67	51.1	0.307	92.9	0.325
24	0.00	20.60	5.25	25	10.7	1.19	51.2	0.302	85.7	0.300
25	0.00	21.20	5.39	25	10.8	0.89	50.8	0.305	89.9	0.315
26	0.00	20.80	5.95	25	10.9	1.52	50.8	0.301	91.4	0.320
27	0.00	20.46	6.12	24	10.6	1.57	50.8	0.304	87.1	0.305
28	0.00	20.14	5.43	24	10.0	1.40	51.1	0.306	89.9	0.315
29	0.00	20.39	5.72	24	10.5	1.58	51.2	0.300	89.7	0.314
30	0.00	21.36	6.01	25	11.2	1.13	50.8	0.303	89.2	0.312
31	0.00	21.14	5.96	25	10.7	1.48	50.8	0.308	93.2	0.326
32	0.00	20.70	5.68	25	10.6	1.16	50.8	0.310	92.6	0.324
33	0.00	20.80	6.23	25	10.7	1.63	51.1	0.310	94.4	0.330
34	0.00	20.95	5.86	25	10.8	1.39	50.9	0.305	86.5	0.303
35	0.00	20.87	6.48	25	10.5	1.26	51.0	0.311	90.1	0.315
36	0.00	20.40	6.40	24	10.1	1.38	50.8	0.312	94.9	0.332
37	0.00	21.01	6.47	25	10.6	1.00	50.7	0.309	88.7	0.311
38	0.00	20.84	6.35	25	9.9	1.73	51.4	0.314	97.0	0.340
39	0.00	20.26	6.29	24	9.4	1.90	51.1	0.314	97.8	0.342
40	0.00	20.49	6.32	24	9.6	1.47	51.1	0.308	85.8	0.300
41	0.00	20.19	6.18	24	9.8	1.74	51.0	0.301	87.5	0.306
42	0.00	20.41	5.55	24	9.6	0.80	51.2	0.312	88.6	0.310
43	0.00	20.78	5.37	25	9.9	0.94	51.1	0.314	85.6	0.300
44	0.00	21.35	4.96	25	11.1	2.01	51.2	0.308	97.1	0.340
45	0.00	19.89	4.66	24	9.9	1.26	51.2	0.303	88.5	0.310
46	0.00	19.79	4.88	24	9.8	1.07	50.9	0.308	88.5	0.310
47	0.00	19.85	4.90	24	9.6	0.78	51.2	0.305	88.1	0.308
	Average	20.70	7.26	25	10.7	1.53	51.1	0.307	89.9	0.315

Total number of blows analyzed: 47

Time Summary

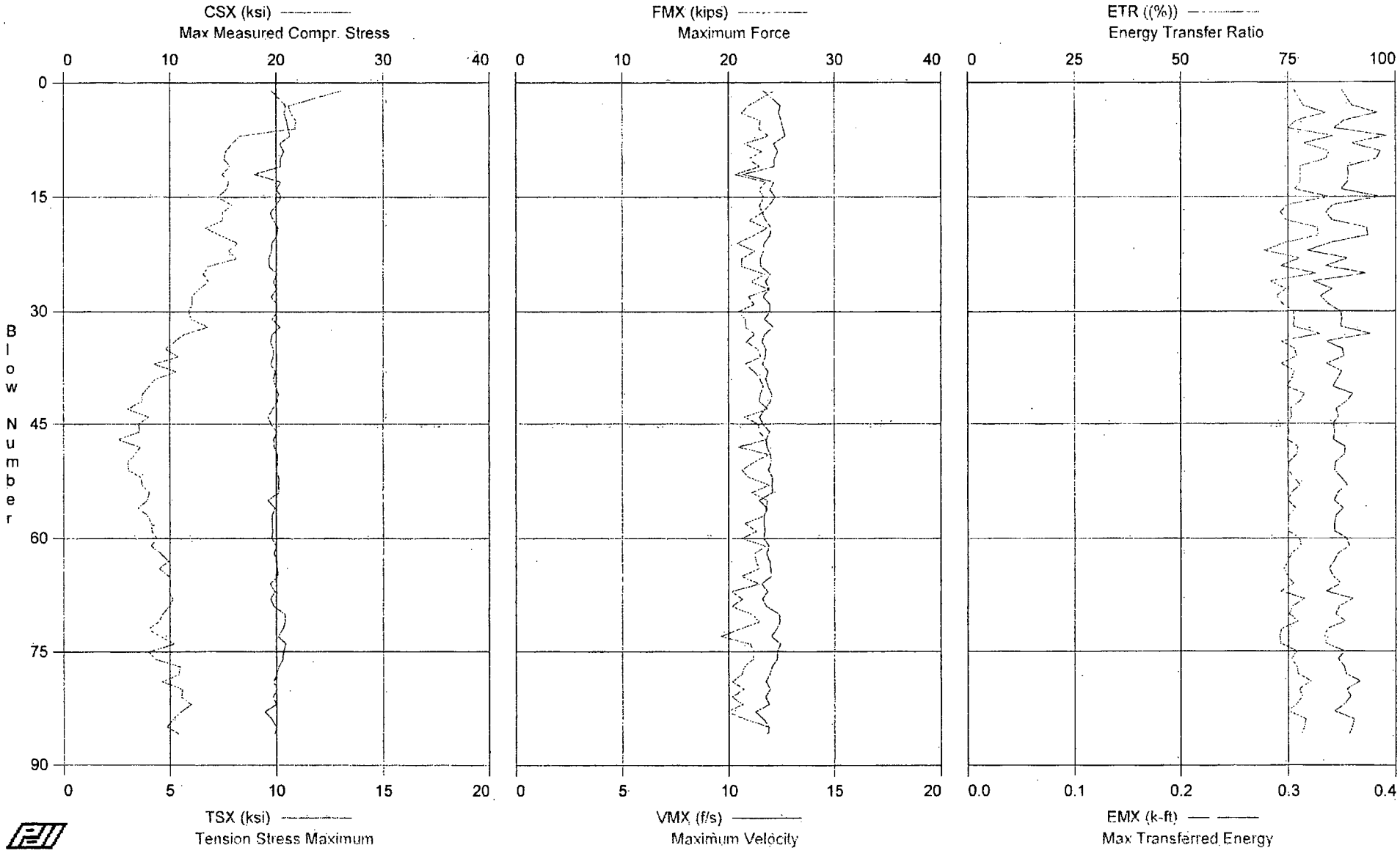
Drive 54 seconds 11:38:33 AM - 11:39:27 AM (12/20/2006) BN 1 - 47

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-1154: 93.5' - 95' Sample



Vogtle COL Project - Boring B-1154; 93.5' - 95' Sample
OP: SEK

Rig Serial No. 331145(MACTEC Raleigh 55LC)
Test date: 20-Dec-2006

AR: 1.19 in^2
LE: 99.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	19.55	13.07	23	12.1	1.28	0.0	0.298	87.5	0.306
3	0.00	20.91	10.59	25	10.9	4.31	51.2	0.301	89.8	0.314
4	0.00	20.77	10.70	25	10.6	2.57	51.0	0.305	95.7	0.335
5	0.00	20.99	10.94	25	11.5	2.22	51.2	0.296	88.1	0.308
6	0.00	21.13	10.89	25	11.4	2.04	51.2	0.301	85.7	0.300
7	0.00	21.30	8.30	25	11.9	2.58	51.2	0.297	97.8	0.342
8	0.00	20.36	7.94	24	10.7	1.73	51.2	0.295	89.7	0.314
9	0.00	20.72	7.65	25	11.5	2.00	51.1	0.297	96.5	0.338
10	0.00	20.42	7.58	24	10.9	1.76	51.0	0.296	95.6	0.335
11	0.00	20.41	7.84	24	11.5	1.86	51.1	0.288	88.9	0.311
12	0.00	17.96	7.47	21	10.3	4.58	50.8	0.232	89.0	0.311
13	0.00	20.39	7.78	24	11.7	1.38	50.9	0.294	88.8	0.311
14	0.00	20.06	7.67	24	11.4	-0.07	51.4	0.285	87.3	0.306
15	0.00	20.48	7.25	24	11.7	3.07	50.9	0.288	96.4	0.338
16	0.00	20.01	7.96	24	11.5	1.79	50.9	0.288	85.4	0.299
17	0.00	19.45	7.50	23	11.6	1.33	51.2	0.280	83.7	0.293
18	0.00	19.75	7.52	23	11.0	0.77	51.0	0.282	85.2	0.298
19	0.00	20.18	6.70	24	11.8	2.25	50.6	0.286	93.3	0.327
20	0.00	20.04	7.41	24	11.1	1.36	51.2	0.286	93.6	0.328
21	0.00	19.60	8.19	23	10.4	1.51	51.2	0.285	84.7	0.297
22	0.00	19.56	7.78	23	11.2	0.99	51.2	0.276	79.4	0.278
23	0.00	19.30	8.17	23	10.6	1.52	50.9	0.284	88.9	0.311
24	0.00	19.36	6.82	23	10.6	4.60	50.8	0.277	83.7	0.293
25	0.00	20.09	6.59	24	11.7	3.29	51.0	0.278	93.2	0.326
26	0.00	19.72	6.84	23	11.0	0.79	50.8	0.280	80.8	0.283
27	0.00	20.04	6.36	24	11.9	0.96	51.2	0.282	85.2	0.298
28	0.00	19.53	6.04	23	10.9	0.75	50.8	0.277	82.5	0.289
29	0.00	20.07	6.05	24	11.2	0.73	50.9	0.284	84.3	0.295
30	0.00	20.07	5.89	24	10.5	1.69	50.8	0.290	87.2	0.305
31	0.00	19.64	6.02	23	10.8	1.55	50.9	0.281	87.5	0.306
32	0.00	20.35	6.79	24	10.8	1.07	51.2	0.292	87.2	0.305
33	0.00	19.67	5.69	23	11.2	2.06	50.9	0.285	94.2	0.330
34	0.00	19.46	5.21	23	10.8	0.05	51.2	0.284	83.9	0.294
35	0.00	19.76	4.81	24	11.4	1.12	50.8	0.285	87.6	0.306
36	0.00	19.71	5.43	23	11.5	1.13	51.3	0.281	88.0	0.308
37	0.00	19.49	4.26	23	10.8	0.49	51.1	0.280	83.9	0.294
38	0.00	19.92	5.33	24	11.2	1.59	50.8	0.283	87.5	0.306
39	0.00	19.74	4.33	23	11.5	1.11	50.9	0.284	86.5	0.303
40	0.00	19.96	4.02	24	11.6	0.37	50.6	0.284	85.4	0.299
41	0.00	20.22	3.72	24	11.5	1.27	50.6	0.289	90.0	0.315
42	0.00	20.11	3.69	24	11.4	1.00	50.8	0.289	88.7	0.311
43	0.00	19.68	3.00	23	11.8	0.44	50.7	0.282	86.2	0.302
44	0.00	19.24	4.01	23	10.7	0.27	50.7	0.286	86.6	0.303
45	0.00	19.50	3.54	23	11.4	0.43	50.7	0.286	85.5	0.299
46	0.00	20.05	3.59	24	11.5	0.10	50.6	0.287	85.9	0.301
47	0.00	19.78	2.57	24	11.7	-0.09	50.5	0.286	85.5	0.299
48	0.00	19.81	3.62	24	10.5	0.68	50.6	0.288	88.3	0.309
49	0.00	20.12	3.35	24	11.9	1.14	51.0	0.289	88.1	0.308
50	0.00	20.17	2.99	24	11.2	0.07	50.7	0.288	86.0	0.301
51	0.00	19.96	3.04	24	10.6	0.28	50.6	0.296	85.8	0.300
52	0.00	20.25	3.65	24	10.9	-0.40	50.3	0.300	87.3	0.305
53	0.00	20.22	3.69	24	11.9	-0.42	50.8	0.296	88.7	0.311
54	0.00	20.25	4.05	24	11.1	0.11	50.8	0.296	86.6	0.303
55	0.00	19.20	3.95	23	11.8	-0.17	50.5	0.291	85.7	0.300
56	0.00	19.87	3.51	24	11.8	0.88	51.0	0.292	87.8	0.307
57	0.00	19.60	3.95	23	11.7	0.02	50.4	0.288	86.1	0.301
58	0.00	19.60	4.14	23	10.8	0.06	50.8	0.293	85.8	0.300
59	0.00	19.68	4.16	23	11.3	0.07	50.4	0.295	85.8	0.300
60	0.00	19.57	4.39	23	10.6	0.24	50.9	0.300	88.6	0.310
61	0.00	19.99	4.13	24	11.7	0.59	50.8	0.301	89.2	0.312
62	0.00	19.80	4.58	24	11.2	-0.59	50.4	0.294	86.6	0.303
63	0.00	20.02	4.97	24	11.3	0.87	50.7	0.293	85.7	0.300
64	0.00	20.09	4.51	24	11.4	0.42	50.6	0.295	84.5	0.296
65	0.00	20.15	4.96	24	10.6	-0.12	51.0	0.295	85.4	0.299
66	0.00	19.41	5.04	23	11.4	1.03	50.5	0.294	87.2	0.305

Vogtle COL Project - Boring B-1154; 93.5' - 95' Sample
OP: SEK

Rig Serial No. 331145(MACTEC Raleigh 55LC)
Test date: 20-Dec-2006

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
67	0.00	19.86	4.94	24	10.1	0.31	50.6	0.300	83.8	0.293
68	0.00	19.45	5.14	23	10.6	1.15	50.8	0.297	90.0	0.315
69	0.00	19.79	4.96	24	10.1	0.60	50.8	0.301	86.9	0.304
70	0.00	20.81	4.67	25	11.1	0.53	50.7	0.304	86.0	0.301
71	0.00	20.86	4.47	25	11.4	1.05	50.5	0.298	88.2	0.309
72	0.00	20.61	3.99	25	10.5	0.79	51.0	0.301	84.1	0.294
73	0.00	20.16	4.57	24	9.6	0.66	50.6	0.306	83.5	0.292
74	0.00	20.92	5.19	25	11.0	0.45	50.6	0.301	83.8	0.293
75	0.00	20.65	4.01	25	11.2	0.50	50.7	0.306	88.1	0.308
76	0.00	20.64	4.33	25	11.1	0.72	50.8	0.302	86.6	0.303
77	0.00	20.22	5.49	24	10.7	0.38	50.5	0.300	88.0	0.308
78	0.00	20.03	5.42	24	10.6	0.90	50.7	0.301	88.4	0.309
79	0.00	19.74	4.64	23	10.2	1.23	51.0	0.299	91.8	0.321
80	0.00	20.06	5.59	24	10.7	0.81	50.5	0.295	88.7	0.310
81	0.00	19.69	5.54	23	10.2	0.68	50.8	0.299	89.5	0.313
82	0.00	19.99	6.00	24	10.6	0.86	50.5	0.299	88.1	0.308
83	0.00	18.90	5.52	22	9.9	-0.13	50.8	0.294	85.7	0.300
84	0.00	19.56	5.15	23	10.8	0.23	50.5	0.300	90.3	0.316
85	0.00	19.98	4.87	24	11.9	0.94	50.7	0.295	89.9	0.315
86	0.00	19.83	5.46	24	11.9	0.87	50.9	0.293	89.2	0.312
	Average	19.98	5.70	24	11.1	1.03	50.8	0.291	87.6	0.307

Total number of blows analyzed: 85

Time Summary

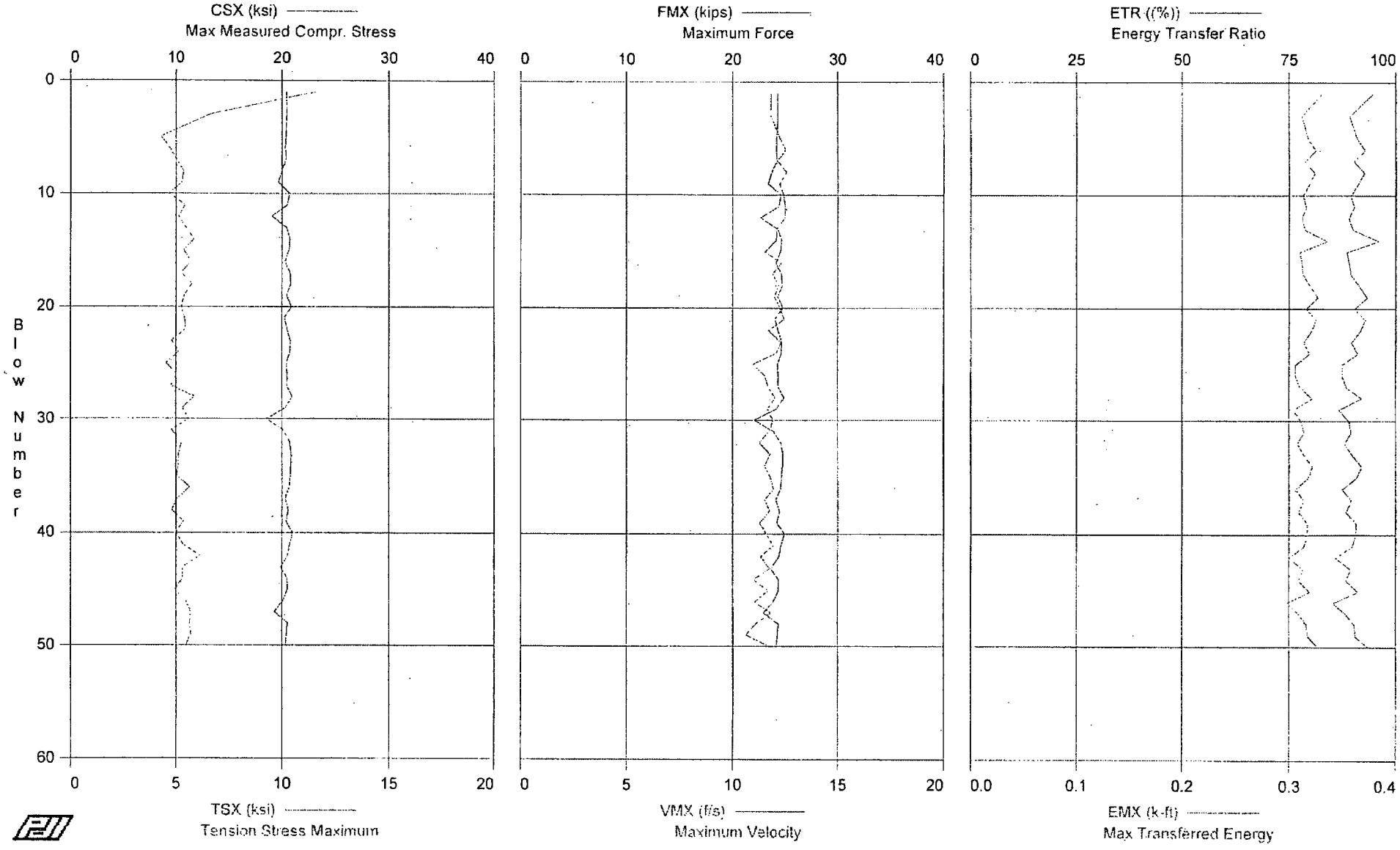
Drive 1 minute 41 seconds 11:54:42 AM - 11:56:23 AM (12/20/2006) BN 1 - 86

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-1154; 98.5' - 100' Sample



Vogtle COL Project - Boring B-1154; 98.5' - 100' Sample
OP: SEK

Rig Serial No. 331145(MACTEC Raleigh 55LC)
Test date: 20-Dec-2006

AR: 1.19 in^2
LE: 104.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	20.44	11.53	24	11.9	3.10	0.0	0.294	94.6	0.331
3	0.00	20.46	6.66	24	11.8	1.02	51.1	0.296	89.2	0.312
5	0.00	20.36	4.28	24	12.3	0.02	41.2	0.292	91.0	0.318
6	0.00	20.32	4.71	24	12.5	1.93	50.8	0.292	92.9	0.325
7	0.00	20.40	5.03	24	12.2	1.06	50.5	0.294	90.1	0.315
8	0.00	19.96	5.36	24	12.6	1.48	50.8	0.293	92.7	0.324
9	0.00	19.67	5.29	23	12.2	0.72	50.7	0.294	91.1	0.319
10	0.00	20.69	4.67	25	12.4	0.81	50.5	0.292	89.5	0.313
11	0.00	20.51	5.44	24	12.5	1.55	50.8	0.293	90.2	0.316
12	0.00	19.06	5.13	23	12.5	1.64	50.7	0.292	89.0	0.312
13	0.00	20.46	5.48	24	12.1	2.01	50.5	0.287	90.0	0.315
14	0.00	20.75	5.86	25	12.1	2.64	50.5	0.289	96.1	0.336
15	0.00	20.66	5.38	25	11.6	0.93	50.7	0.288	88.5	0.310
16	0.00	20.29	5.73	24	12.3	1.11	50.7	0.296	89.0	0.312
17	0.00	20.75	5.25	25	11.9	1.31	50.5	0.293	89.5	0.313
18	0.00	20.81	5.77	25	12.2	1.37	50.9	0.293	91.5	0.320
19	0.00	20.44	5.40	24	12.0	1.85	50.5	0.287	93.3	0.327
20	0.00	20.86	5.26	25	12.3	1.88	50.9	0.295	90.3	0.316
21	0.00	20.22	5.42	24	12.5	1.58	50.5	0.296	92.9	0.325
22	0.00	20.49	5.45	24	11.7	2.17	50.9	0.287	91.7	0.321
23	0.00	20.76	4.80	25	12.3	0.79	50.3	0.292	89.7	0.314
24	0.00	20.73	5.13	25	12.1	0.72	50.8	0.288	91.1	0.319
25	0.00	20.42	4.53	24	11.0	1.45	50.4	0.292	87.4	0.306
26	0.00	20.48	5.03	24	11.5	1.85	50.8	0.284	87.4	0.306
27	0.00	20.46	4.75	24	11.7	0.49	50.6	0.293	88.5	0.310
28	0.00	20.96	5.90	25	12.0	3.42	50.5	0.294	92.0	0.322
29	0.00	20.32	5.32	24	11.7	3.25	50.8	0.288	86.7	0.304
30	0.00	18.53	5.62	22	11.9	1.41	50.3	0.283	88.9	0.311
31	0.00	20.10	4.78	24	11.7	1.16	50.8	0.293	89.6	0.314
32	0.00	20.70	5.27	25	11.3	1.33	50.6	0.293	88.0	0.308
33	0.00	20.86	5.13	25	11.8	1.71	50.5	0.297	89.8	0.314
34	0.00	20.83	5.12	25	11.5	1.63	50.5	0.295	92.1	0.322
35	0.00	20.76	5.04	25	11.8	1.51	50.7	0.291	90.8	0.318
36	0.00	20.68	5.66	25	12.0	1.50	50.5	0.288	87.5	0.306
37	0.00	20.28	5.06	24	11.5	1.40	50.7	0.292	89.7	0.314
38	0.00	20.59	4.79	25	11.8	1.17	50.6	0.293	88.3	0.309
39	0.00	20.37	5.36	24	11.3	1.96	50.6	0.284	90.7	0.317
40	0.00	20.98	4.99	25	11.6	0.90	50.6	0.297	90.6	0.317
41	0.00	20.70	5.33	25	11.9	2.08	50.7	0.289	89.8	0.314
42	0.00	20.54	6.15	24	11.3	0.79	50.7	0.287	85.8	0.300
43	0.00	19.89	5.31	24	11.8	1.32	50.5	0.285	89.4	0.313
44	0.00	20.50	5.32	24	11.0	0.95	50.6	0.290	88.3	0.309
45	0.00	20.50	4.93	24	11.7	2.84	50.7	0.286	91.1	0.319
46	0.00	20.09	5.46	24	11.1	0.85	50.5	0.280	85.3	0.298
47	0.00	19.30	5.70	23	11.8	1.58	50.6	0.285	88.2	0.309
48	0.00	20.50	5.64	24	11.1	2.80	50.8	0.286	90.3	0.316
49	0.00	20.39	5.72	24	10.6	1.92	50.5	0.285	90.4	0.317
50	0.00	20.35	5.48	24	11.8	1.08	50.8	0.292	93.5	0.327
	Average	20.40	5.43	24	11.8	1.54	50.4	0.291	90.1	0.315

Total number of blows analyzed: 48

Time Summary

Drive 58 seconds 12:12:25 PM - 12:13:23 PM (12/20/2006) BN 1 - 50

June 27, 2007

Memorandum to File DCN VGCOL 104
From: Steve Kiser
Reviewed By: Pieter Depree

Subject: **Report of SPT Energy – MACTEC Knoxville CME 75 Truck Hammer Serial No. 211797 Automatic Hammer**
WORK INSTRUCTION VGCOL 104
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on December 20, 2006, during drilling of Boring B-3016 at the referenced site. The testing was performed from approximately 12:50 to 1:50 PM under partly sunny skies and a temperature of about 53 degrees Fahrenheit. The boring was drilled with personnel and equipment from the Knoxville office of MACTEC. The drilling equipment consisted of a CME 75 model truck-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of NW-J-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the boring below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Jimmy Warren. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. NW #146/1 and NW#146/2). An NW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.49 square inches and an outside diameter of approximately 2.625 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 2.625 and 2.25 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

14 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 263 foot-pounds to 281 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 75% to 80% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 271.5 foot-pounds, with a weighted average ETR of 77.6%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 104 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 14 PDIPLOT Output – 8 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 and 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
211797 (CME 75 Truck)	MACTEC Knoxville	Jimmy Warren	B-3016	NW-J	12/20/2006	98.5 - 100.0	16 - 50/3"	68	263	75.1%
						103.5 - 105.0	17 - 50/2"	69	281	80.3%
						108.5 - 110.0	50 / 1"	52	270	77.1%
							Weighted Average for Rig:		**271.5**	**77.6%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By:	Date: 6-27-07	Checked By:	Date: 7/31/07

Work Instructions – SPT Energy MACTEC CME-75 (Warren)
(Hammer #211797)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 12/20/06

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 12/20/06 To: 12/20/07

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 12/20/06

No. of Pages: 1 DCN: VGCOL 104

MACTEC

2801 YORKMONT ROAD, SUITE 100 D, CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME 75
LOCATION:	Waynesboro, Georgia	MODEL:	75 TRUCK
PROJECT NO.:	6141-06-0286	SERIAL NO.:	211797
DATE:	12-20-06	HAMMER TYPE:	AUTOMATIC
WEATHER:	SUNNY - COOL 53°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	NW - J
DRILLING COMPANY:	MACTEC KNOXVILLE	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-3016		
DEPTH DRILLED:	150' PLANNED		
TIME DRIVEN:	1:45 PM		
RIG OPERATOR:	JIMMY WARREN		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.49 in²		
ACCEL. SERIAL NOS.:	P5094 / P5553		
STRAIN SERIAL NOS.:	146 NW 1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
99.5/100'	16-50/3"										
103.5/105'	17-50/2"										
108.5/110'	50/1"										

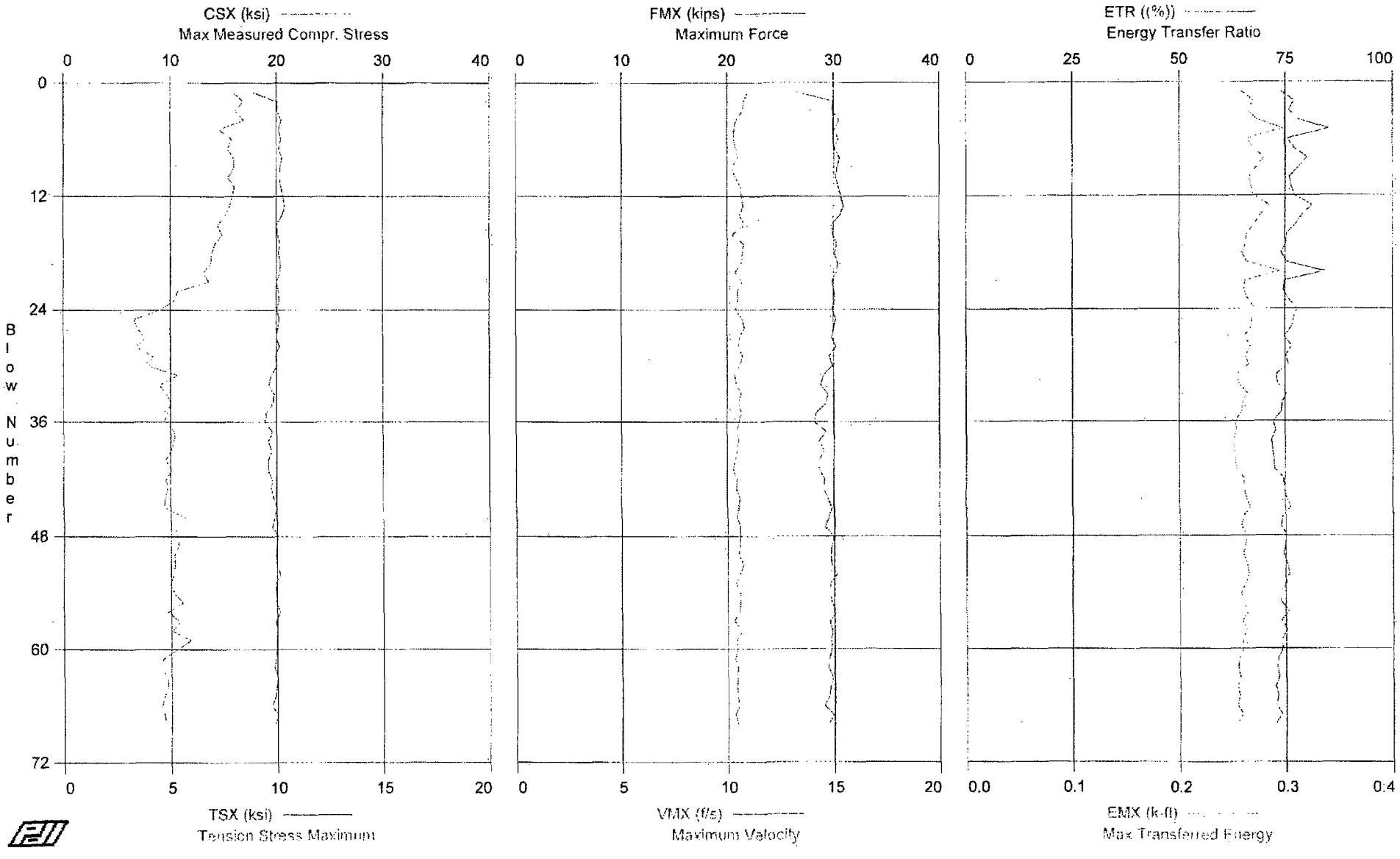
REMARKS:

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-3016; 98.5' - 100' Sample



MACTEC Engineering and Consulting, Inc.
Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Vogtle COL Project - Boring B-3016; 98.5' - 100' Sample

Rig Serial No. 211797 (MACTEC Knoxville CME 75)

OP: SEK

Test date: 20-Dec-2006

AR: 1.49 in^2
LE: 104.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	17.79	7.95	27	11.0	1.10	0.0	0.255	74.0	0.259
2	0.00	20.09	8.41	30	10.8	1.07	47.1	0.260	77.0	0.270
3	0.00	20.05	8.05	30	10.7	1.18	48.7	0.256	75.9	0.265
4	0.00	20.50	8.44	31	10.4	2.00	48.9	0.261	78.0	0.273
5	0.00	20.21	7.29	30	10.3	1.27	48.9	0.261	85.2	0.298
6	0.00	20.44	7.85	30	10.3	1.30	48.2	0.257	75.6	0.265
7	0.00	20.20	7.65	30	10.4	0.71	48.8	0.259	77.0	0.269
8	0.00	20.52	7.96	31	10.5	0.99	48.7	0.261	80.1	0.280
9	0.00	20.35	7.97	30	10.2	1.18	48.5	0.262	78.1	0.273
10	0.00	20.26	7.68	30	10.4	1.01	49.0	0.253	76.0	0.266
11	0.00	20.44	8.01	30	10.6	1.26	49.1	0.257	76.4	0.268
12	0.00	20.59	7.88	31	10.7	1.05	48.6	0.259	77.2	0.270
13	0.00	20.76	7.77	31	10.8	1.12	48.9	0.264	81.3	0.285
14	0.00	20.53	7.57	31	10.6	1.25	48.9	0.261	79.1	0.277
15	0.00	20.01	7.21	30	10.9	1.15	48.8	0.259	77.5	0.271
16	0.00	20.12	7.42	30	10.2	0.60	48.7	0.255	75.4	0.264
17	0.00	20.31	7.05	30	10.8	0.08	48.7	0.254	75.1	0.263
18	0.00	20.18	6.92	30	10.7	0.64	48.7	0.251	74.0	0.259
19	0.00	20.39	6.89	30	10.7	1.23	48.8	0.256	75.3	0.264
20	0.00	20.32	6.54	30	10.4	1.12	48.7	0.265	84.2	0.295
21	0.00	20.02	6.80	30	10.7	1.10	48.8	0.252	74.8	0.262
22	0.00	20.18	5.35	30	10.5	1.02	48.6	0.251	74.6	0.261
23	0.00	20.25	5.18	30	10.5	0.88	48.9	0.253	75.8	0.265
24	0.00	20.04	4.54	30	10.4	1.12	48.7	0.254	77.8	0.272
25	0.00	20.28	3.31	30	10.7	1.05	48.9	0.257	77.0	0.269
26	0.00	20.14	3.46	30	10.8	0.71	48.7	0.252	76.5	0.268
27	0.00	20.00	3.81	30	10.6	1.06	48.5	0.245	74.7	0.261
28	0.00	20.26	3.39	30	10.5	1.49	48.8	0.259	76.4	0.267
29	0.00	19.85	4.16	30	10.7	0.89	48.6	0.250	75.2	0.263
30	0.00	20.07	3.99	30	10.6	0.70	48.7	0.251	75.7	0.265
31	0.00	19.48	5.32	29	10.3	0.70	48.5	0.242	72.9	0.255
32	0.00	19.29	4.49	29	10.4	0.72	48.7	0.246	73.2	0.256
33	0.00	19.76	4.82	29	10.7	0.76	48.5	0.252	75.4	0.264
34	0.00	19.68	5.02	29	10.5	0.79	48.7	0.247	74.2	0.260
35	0.00	19.02	4.86	28	10.7	0.97	48.7	0.245	74.1	0.259
36	0.00	18.90	4.71	28	10.6	0.11	48.6	0.238	72.2	0.253
37	0.00	19.64	5.19	29	10.5	0.71	48.9	0.242	72.7	0.254
38	0.00	19.17	5.15	29	10.5	0.97	48.8	0.237	71.7	0.251
39	0.00	19.52	5.03	29	10.5	0.53	48.6	0.241	72.0	0.252
40	0.00	19.21	4.76	29	10.4	0.25	48.9	0.242	72.3	0.253
41	0.00	19.21	5.05	29	10.3	0.43	48.9	0.240	72.4	0.254
42	0.00	19.56	4.79	29	10.4	0.66	48.7	0.246	74.6	0.261
43	0.00	19.48	4.86	29	10.4	0.99	49.2	0.248	74.7	0.261
44	0.00	19.74	4.74	29	10.6	0.81	48.8	0.251	75.2	0.263
45	0.00	20.00	4.73	30	10.5	1.05	48.7	0.251	76.3	0.267
46	0.00	19.79	5.67	29	10.4	1.04	49.1	0.244	74.2	0.260
47	0.00	19.53	5.18	29	10.6	0.64	48.9	0.245	73.8	0.258
48	0.00	20.08	5.31	30	10.6	0.91	48.5	0.254	75.2	0.263
49	0.00	19.96	5.35	30	10.6	0.67	48.9	0.252	74.8	0.262
50	0.00	19.91	5.15	30	10.5	0.31	48.7	0.250	74.4	0.260
51	0.00	19.96	5.18	30	10.8	0.77	48.9	0.253	75.4	0.264
52	0.00	20.30	5.13	30	10.6	0.88	48.7	0.254	75.8	0.265
53	0.00	19.87	4.97	30	10.4	0.71	48.6	0.255	75.2	0.263
54	0.00	19.91	5.17	30	10.6	0.78	48.7	0.246	73.7	0.258
55	0.00	19.96	5.56	30	10.6	0.75	48.8	0.247	73.9	0.259
56	0.00	20.29	4.84	30	10.6	1.03	48.9	0.255	75.7	0.265
57	0.00	19.84	5.41	30	10.3	1.04	48.7	0.251	73.9	0.259
58	0.00	20.00	5.05	30	10.7	0.85	48.8	0.256	75.2	0.263
59	0.00	19.92	5.89	30	10.4	0.57	48.8	0.251	74.1	0.259
60	0.00	19.96	5.31	30	10.4	0.50	48.9	0.251	74.2	0.260
61	0.00	19.80	4.63	30	10.3	0.50	48.8	0.250	73.2	0.256
62	0.00	19.75	4.55	29	10.5	0.47	48.7	0.248	73.0	0.255
63	0.00	20.02	4.82	30	10.4	0.69	48.9	0.251	73.4	0.257
64	0.00	19.87	4.84	30	10.4	0.46	48.7	0.247	72.4	0.254
65	0.00	19.79	4.67	29	10.4	0.65	49.0	0.247	73.1	0.256

Vogtle COL Project - Boring B-3016; 98.5' - 100' Sample
OP: SEK

Rig Serial No. 211797 (MACTEC Knoxville CME 75)
Test date: 20-Dec-2006

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
66	0.00	19.48	4.55	29	10.5	0.85	48.8	0.246	72.6	0.254
67	0.00	20.05	4.67	30	10.3	0.68	48.8	0.253	73.9	0.259
68	0.00	19.76	4.74	29	10.5	0.61	48.5	0.247	72.5	0.254
	Average	19.92	5.69	30	10.5	0.85	48.7	0.252	75.3	0.263

Total number of blows analyzed: 68

Time Summary

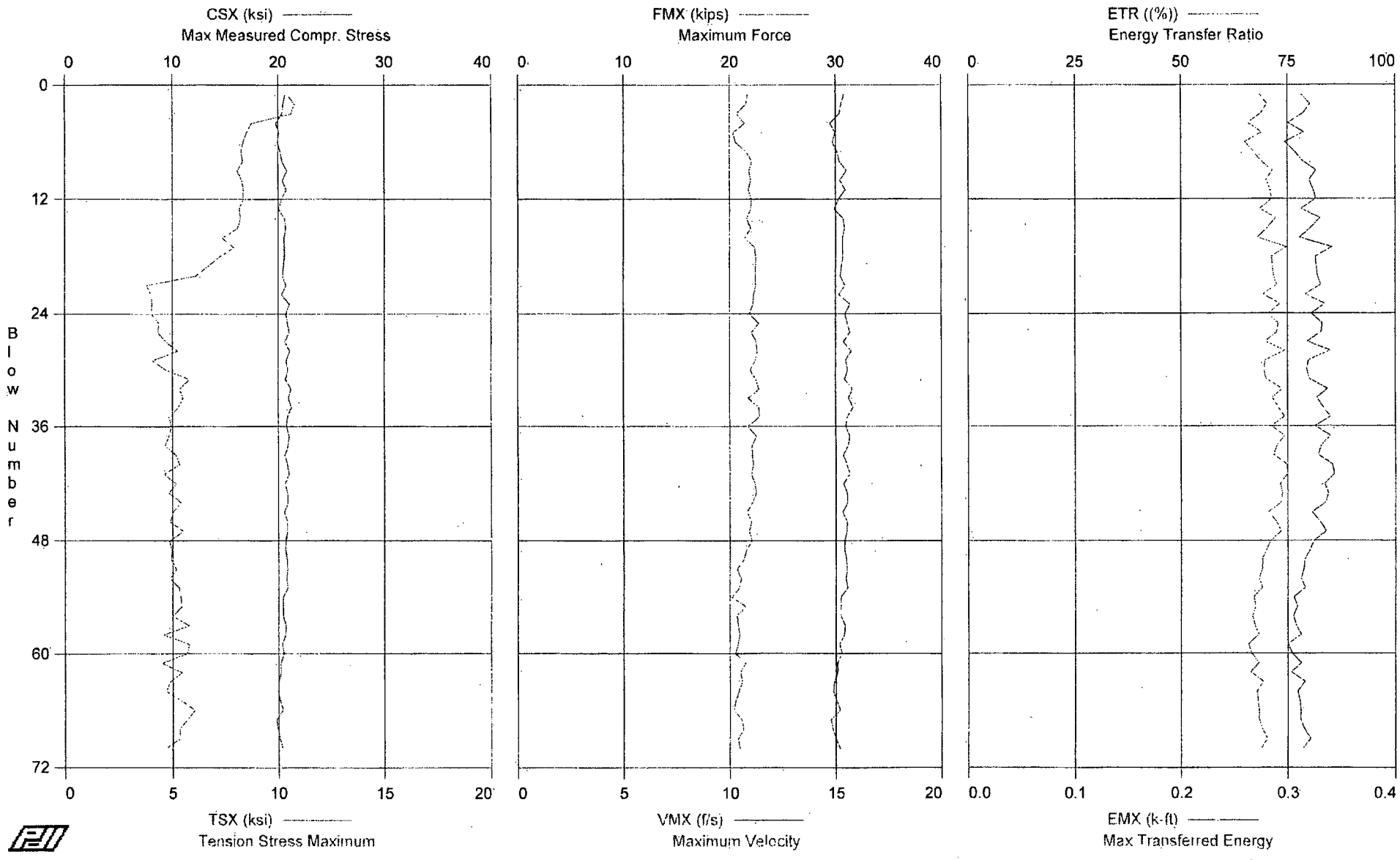
Drive 1 minute 23 seconds 12:50:13 PM - 12:51:36 PM (12/20/2006) BN 1 - 68

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-3016; 103.5' - 105' Sample



Vogtle COL Project - Boring B-3016; 103.5' - 105' Sample
OP: SEK

Rig Serial No. 211797 (MACTEC Knoxville CME 75)
Test date: 20-Dec-2006

AR: 1.49 in^2
LE: 109.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	20.67	10.45	31	10.9	0.98	0.0	0.279	78.2	0.274
2	0.00	20.47	10.78	31	10.8	1.52	50.3	0.274	80.3	0.281
3	0.00	20.37	10.62	30	10.3	1.42	50.5	0.272	78.7	0.275
4	0.00	19.79	8.75	29	10.7	0.33	50.0	0.262	75.2	0.263
5	0.00	20.10	8.53	30	10.2	1.28	50.0	0.265	78.9	0.276
6	0.00	19.95	8.37	30	10.3	0.93	50.1	0.255	74.4	0.260
7	0.00	20.22	8.27	30	10.8	1.07	49.8	0.261	76.6	0.268
8	0.00	20.36	8.35	30	11.1	1.13	50.1	0.270	78.5	0.275
9	0.00	20.82	8.09	31	10.9	1.27	50.5	0.278	81.6	0.286
10	0.00	20.41	8.30	30	11.0	1.36	50.0	0.271	80.1	0.280
11	0.00	20.75	8.39	31	10.9	1.26	50.1	0.277	81.0	0.284
12	0.00	20.31	8.37	30	11.0	1.01	49.9	0.276	81.6	0.285
13	0.00	20.04	8.18	30	11.0	1.15	50.4	0.269	78.2	0.274
14	0.00	20.61	8.24	31	10.8	1.26	49.8	0.279	82.6	0.289
15	0.00	20.71	8.11	31	11.0	0.96	50.1	0.274	80.4	0.281
16	0.00	20.56	7.37	31	10.7	1.19	49.8	0.266	77.8	0.272
17	0.00	20.59	7.93	31	11.2	1.24	50.0	0.280	85.3	0.299
18	0.00	20.60	7.23	31	11.2	1.33	50.3	0.273	81.6	0.285
20	0.00	20.42	6.10	30	11.2	1.24	50.2	0.277	82.0	0.287
21	0.00	20.73	3.81	31	11.2	0.99	49.9	0.274	82.7	0.290
22	0.00	20.33	4.03	30	11.1	0.61	49.9	0.271	79.2	0.277
23	0.00	21.06	4.07	31	11.1	1.17	49.7	0.282	83.7	0.293
24	0.00	20.73	4.04	31	10.9	0.67	49.9	0.275	80.5	0.282
25	0.00	20.88	4.38	31	11.4	0.77	49.5	0.277	83.0	0.291
26	0.00	21.04	4.34	31	11.0	0.91	49.8	0.277	82.9	0.290
27	0.00	20.63	4.71	31	11.3	1.13	49.8	0.271	79.6	0.279
28	0.00	21.11	5.26	31	11.3	1.41	49.5	0.280	84.9	0.297
29	0.00	20.75	4.09	31	11.2	1.01	49.7	0.271	79.9	0.279
30	0.00	20.91	4.72	31	11.0	1.01	49.9	0.268	79.5	0.278
31	0.00	20.70	5.81	31	11.2	1.20	49.6	0.269	80.0	0.280
32	0.00	21.19	5.35	32	11.4	1.27	49.4	0.275	84.2	0.295
33	0.00	20.95	5.49	31	10.9	0.85	49.7	0.269	81.8	0.286
34	0.00	21.23	5.28	32	11.4	1.17	49.6	0.275	83.2	0.291
35	0.00	20.86	4.85	31	11.4	0.83	49.9	0.279	84.9	0.297
36	0.00	20.77	4.98	31	10.9	1.25	49.5	0.266	81.5	0.285
37	0.00	21.01	4.84	31	11.2	1.70	49.6	0.277	84.9	0.297
38	0.00	20.93	4.67	31	11.1	0.81	49.6	0.277	82.9	0.290
39	0.00	20.61	5.18	31	11.1	1.20	49.9	0.270	82.1	0.287
40	0.00	20.84	5.34	31	11.1	0.65	49.8	0.278	85.4	0.299
41	0.00	21.03	4.62	31	11.0	1.14	49.5	0.282	85.8	0.300
42	0.00	20.63	5.16	31	11.2	0.73	49.5	0.275	83.6	0.293
43	0.00	20.85	4.84	31	11.2	0.98	49.6	0.279	84.4	0.295
44	0.00	20.90	5.40	31	11.1	1.14	49.8	0.278	83.9	0.294
45	0.00	20.57	5.03	31	10.8	1.05	49.5	0.267	80.6	0.282
46	0.00	20.86	4.89	31	11.0	1.03	49.8	0.276	82.5	0.289
47	0.00	20.84	5.51	31	10.9	1.31	49.6	0.282	83.9	0.294
48	0.00	20.70	4.85	31	11.0	0.82	49.7	0.275	81.2	0.284
49	0.00	20.68	4.98	31	10.8	1.18	49.8	0.271	80.1	0.280
50	0.00	20.80	4.94	31	10.7	0.79	49.4	0.273	78.9	0.276
51	0.00	20.85	5.19	31	10.3	0.98	49.6	0.281	78.8	0.276
52	0.00	20.77	4.91	31	10.5	0.88	49.7	0.277	78.1	0.273
53	0.00	20.87	5.32	31	10.4	1.36	49.4	0.273	79.0	0.276
54	0.00	20.45	5.40	30	10.1	0.52	49.5	0.271	76.5	0.268
55	0.00	20.44	5.43	30	10.7	1.26	49.6	0.273	77.2	0.270
56	0.00	20.44	5.01	30	10.3	0.71	49.5	0.271	76.3	0.267
57	0.00	20.71	5.77	31	10.4	0.18	49.5	0.274	77.0	0.269
58	0.00	20.67	4.58	31	10.5	0.68	49.9	0.271	78.1	0.273
59	0.00	20.36	5.79	30	10.4	0.77	49.3	0.264	75.1	0.263
60	0.00	20.52	5.69	31	10.2	0.50	50.0	0.269	75.9	0.266
61	0.00	20.22	4.51	30	10.7	1.02	49.3	0.274	78.1	0.273
62	0.00	20.24	5.43	30	10.5	0.50	49.3	0.263	75.8	0.265
63	0.00	20.03	4.89	30	10.6	1.23	49.6	0.268	79.0	0.277
64	0.00	19.96	4.72	30	10.4	1.36	49.4	0.263	77.3	0.271
65	0.00	20.17	5.42	30	10.5	1.21	49.7	0.268	77.8	0.272
66	0.00	20.39	6.02	30	10.2	1.03	49.8	0.270	78.0	0.273

Vogtle COL Project - Boring B-3016; 103.5' - 105' Sample
OP: SEK

Rig Serial No. 211797 (MACTEC Knoxville CME 75)
Test date: 20-Dec-2006

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
67	0.00	19.80	5.69	30	10.5	1.23	49.6	0.270	78.0	0.273
68	0.00	19.93	5.33	30	10.6	0.66	49.3	0.267	78.8	0.276
69	0.00	20.13	5.36	30	10.4	1.45	49.6	0.274	80.3	0.281
70	0.00	20.40	4.69	30	10.5	0.64	49.3	0.270	78.5	0.275
	Average	20.58	5.96	31	10.8	1.03	49.8	0.273	80.3	0.281

Total number of blows analyzed: 69

Time Summary

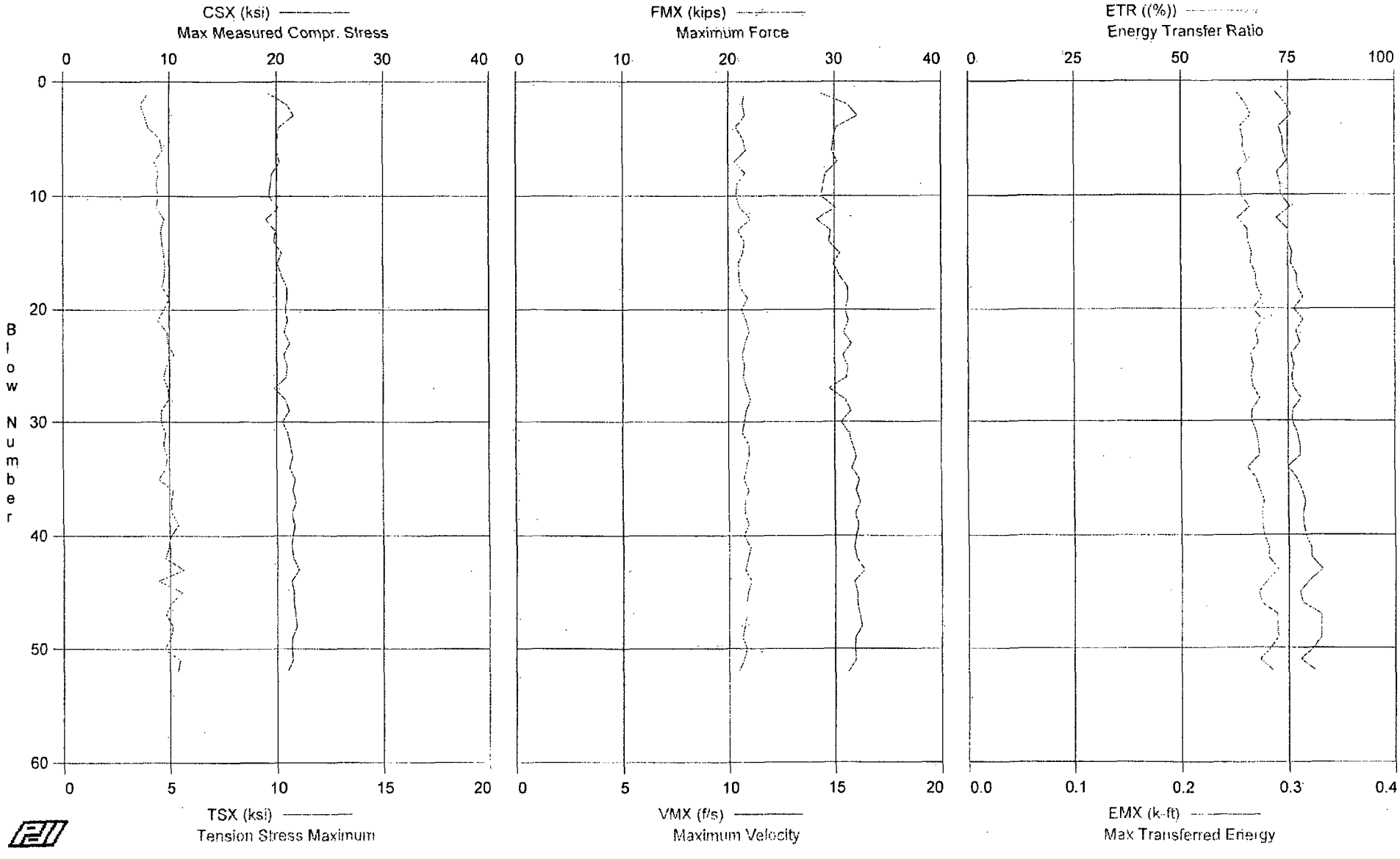
Drive 1 minute 23 seconds 1:16:56 PM - 1:18:19 PM (12/20/2006) BN 1 - 70

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 20-Dec-2006

Vogtle COL Project - Boring B-3016; 108.5' - 110' Sample



MACTEC Engineering and Consulting, Inc.
Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Vogtle COL Project - Boring B-3016; 108.5' - 110' Sample
OP: SEK

Rig Serial No. 211797 (MACTEC Knoxville CME 75)
Test date: 20-Dec-2006

AR: 1.49 in^2
LE: 114.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	19.24	4.01	29	10.7	0.18	0.0	0.254	72.0	0.252
2	0.00	21.00	3.66	31	10.7	0.81	44.4	0.263	74.4	0.260
3	0.00	21.58	3.84	32	10.8	0.94	45.5	0.269	75.7	0.265
4	0.00	20.24	4.02	30	10.3	0.75	46.2	0.252	72.8	0.255
5	0.00	20.08	4.56	30	10.7	0.82	46.3	0.257	73.7	0.258
6	0.00	20.01	4.69	30	10.8	0.97	46.7	0.252	73.8	0.258
7	0.00	20.31	4.32	30	10.3	0.75	46.6	0.257	74.8	0.262
8	0.00	19.57	4.48	29	10.8	0.74	46.7	0.244	72.3	0.253
9	0.00	19.42	4.40	29	10.4	0.42	46.9	0.251	73.2	0.256
10	0.00	19.29	4.49	29	10.4	0.76	46.7	0.253	73.3	0.256
11	0.00	20.21	4.41	30	10.5	0.69	46.9	0.259	75.5	0.264
12	0.00	19.02	4.77	28	11.1	0.69	46.9	0.247	72.3	0.253
13	0.00	19.91	4.60	30	10.4	0.84	46.9	0.258	75.0	0.262
14	0.00	19.79	4.66	29	10.8	0.76	46.8	0.253	74.9	0.262
15	0.00	20.47	4.74	31	10.7	0.84	46.9	0.261	75.9	0.266
16	0.00	20.07	4.80	30	10.5	0.26	46.7	0.258	75.7	0.265
17	0.00	20.44	4.75	30	10.5	1.03	46.7	0.262	77.0	0.269
18	0.00	20.96	4.67	31	10.5	1.17	46.8	0.267	77.1	0.270
19	0.00	20.98	5.01	31	10.9	1.52	46.8	0.270	78.4	0.275
20	0.00	20.81	4.75	31	10.6	0.78	46.9	0.265	76.3	0.267
21	0.00	21.02	4.45	31	10.8	0.97	46.9	0.272	78.5	0.275
22	0.00	20.70	4.89	31	11.0	1.19	47.2	0.268	76.8	0.269
23	0.00	21.20	4.92	32	10.8	0.96	46.6	0.270	77.8	0.272
24	0.00	20.67	5.22	31	10.7	0.85	47.1	0.260	75.7	0.265
25	0.00	20.96	4.85	31	10.7	0.94	46.8	0.265	76.3	0.267
26	0.00	20.86	4.71	31	10.7	0.91	46.8	0.261	75.8	0.265
27	0.00	19.75	4.94	29	10.8	1.19	47.1	0.258	76.3	0.267
28	0.00	20.80	4.96	31	11.0	0.70	46.9	0.268	78.0	0.273
29	0.00	21.14	4.62	32	10.8	0.91	46.9	0.269	76.0	0.266
30	0.00	20.54	4.61	31	10.7	1.10	46.7	0.260	75.9	0.266
31	0.00	21.04	4.83	31	10.7	1.74	46.9	0.268	77.1	0.270
32	0.00	21.28	4.73	32	11.0	1.12	47.2	0.274	77.7	0.272
33	0.00	21.51	4.92	32	11.0	1.57	46.9	0.271	77.9	0.273
34	0.00	21.21	4.83	32	10.9	0.69	46.9	0.267	74.9	0.262
35	0.00	21.66	4.50	32	10.7	0.83	47.1	0.276	77.0	0.269
36	0.00	21.47	5.18	32	10.9	1.43	47.2	0.270	78.1	0.273
37	0.00	21.74	5.08	32	10.8	0.90	47.1	0.277	79.0	0.277
38	0.00	21.43	5.14	32	10.8	0.95	47.2	0.269	78.6	0.275
39	0.00	21.61	5.44	32	10.9	0.60	46.9	0.273	78.5	0.275
40	0.00	21.47	5.06	32	10.7	1.70	47.1	0.267	79.1	0.277
41	0.00	21.34	4.94	32	11.0	1.63	47.0	0.276	80.2	0.281
42	0.00	21.48	4.79	32	10.9	1.54	47.1	0.271	80.4	0.281
43	0.00	21.98	5.65	33	10.8	1.56	47.1	0.280	83.0	0.290
44	0.00	21.33	4.47	32	11.1	1.38	47.1	0.274	79.9	0.280
45	0.00	21.54	5.59	32	10.9	1.02	46.8	0.266	77.6	0.272
46	0.00	21.54	5.05	32	10.8	1.11	46.8	0.269	78.3	0.274
47	0.00	21.68	4.83	32	10.8	2.22	47.3	0.272	82.7	0.289
48	0.00	21.82	5.14	33	10.7	1.63	46.7	0.272	82.7	0.289
49	0.00	21.39	5.06	32	10.6	1.50	46.9	0.273	82.7	0.290
50	0.00	21.37	4.74	32	10.8	1.60	46.8	0.269	80.9	0.283
51	0.00	21.44	5.49	32	10.7	1.17	46.8	0.270	77.9	0.273
52	0.00	20.97	5.38	31	10.5	1.52	46.8	0.268	81.4	0.285
	Average	20.83	4.78	31	10.7	1.05	46.8	0.265	77.1	0.270

Total number of blows analyzed: 52

Time Summary

Drive 1 minute 5 seconds 1:45:47 PM - 1:46:52 PM (12/20/2006) BN 1 - 52

June 27, 2007

Memorandum to File DCN VGCOL 103
From: Steve Kiser
Reviewed By: Pieter Depree

Subject: **Report of SPT Energy – MACTEC Knoxville CME 75 Truck Hammer Serial No. 200587 Automatic Hammer**
WORK INSTRUCTION VGCOL 103
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on January 17, 2007, during drilling of Boring B-4014 at the referenced site. The testing was performed from approximately 12:05 to 1:05 PM under partly cloudy skies and breezy conditions, and a temperature of about 42 degrees Fahrenheit. The boring was drilled with personnel and equipment from the Knoxville office of MACTEC. The drilling equipment consisted of a CME 75 model truck-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of NW-J-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the boring below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Tony Christian. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. NW #146/1 and NW#146/2). An NW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.49 square inches and an outside diameter of approximately 2.625 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 2.625 and 2.25 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

16 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 293 foot-pounds to 303 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 84% to 87% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 294.7 foot-pounds, with a weighted average ETR of 84.2%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 103 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 16 PDIPLOT Output – 10 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 and 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
200587 (CME 75 Truck)	MACTEC Knoxville	Tony Christian	B-4014	NW-J	1/17/2007	33.5 - 35.0	5 - 8 - 7	19	295	84.3%
						38.5 - 40.0	2 - 4 - 7	13	303	86.6%
						43.5 - 45.0	3 - 5 - 6	14	296	84.6%
						48.5 - 50.0	4 - 5 - 6	15	296	84.6%
						53.5 - 55.0	3 - 4 - 9	16	293	83.7%
							Weighted Average for Rig:		**294.7**	**84.2%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By: SKV	Date: 6-27-07	Checked By: WAL	Date: 7/31/07

Work Instructions – SPT Energy MACTEC CME-75 (Christian)
(Hammer #200587)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 12/20/06

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 12/20/06 To: 12/20/07

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 12/20/06

No. of Pages: 1 DCN: VGCOL 103

MACTEC

2801 YORKMONT ROAD, SUITE 100 D CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME 75
LOCATION:	Waynesboro, Georgia	MODEL:	75 TRUCK
PROJECT NO.:	6141-06-0286	SERIAL NO.:	200587
DATE:	1-17-07	HAMMER TYPE:	AUTOMATIC
WEATHER:	PARTLY CLOUDY ; BREEZY ; COLD 42°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	NW-J
DRILLING COMPANY:	MACTEC KNOXVILLE	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-4014		
DEPTH DRILLED:	100' PLANNED		
TIME DRIVEN:	1:15 PM		
RIG OPERATOR:	TONY CHRISTIAN		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.49 in²		
ACCEL. SERIAL NOS.:	P5094 / P5953		
STRAIN SERIAL NOS.:	146 NW #1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
33.5/35	5-8-7										
38.5/40	2-4-7										
43.5/45	3-5-6										
48.5/50	4-5-6										
53.5/55	3-4-9										

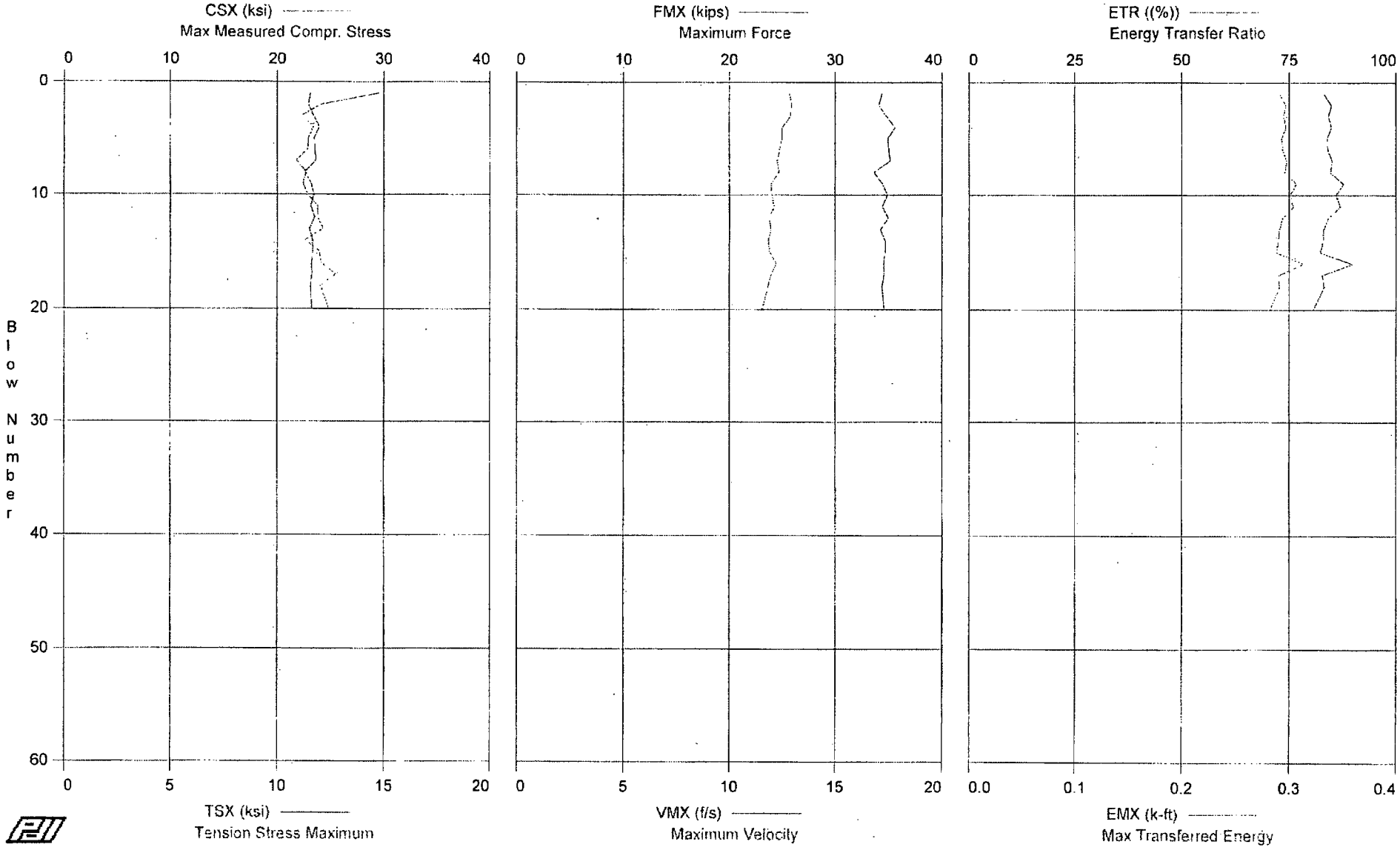
REMARKS:

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-4014: 33.5' - 35' Sample



Plant Vogtle COL Project - Boring B-4014; 33.5' - 35' Sample
Rig Serial No. 200587 (MACTEC Knoxville CME 75 Truck)
OP: SEK
Test date: 17-Jan-2007

AR: 1.49 in^2
LE: 39.00 ft
WS: 16,807.9 f/s
SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement
BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	23.08	14.78	34	12.9	1.97	0.0	0.303	83.1	0.291
2	0.00	22.89	12.02	34	12.9	2.41	54.3	0.308	84.8	0.297
3	0.00	23.35	11.14	35	12.9	2.19	54.7	0.308	84.2	0.295
4	0.00	23.89	11.68	36	12.5	2.31	55.7	0.304	84.8	0.297
5	0.00	23.43	11.45	35	12.5	2.45	55.2	0.297	83.8	0.293
6	0.00	23.50	11.41	35	12.4	2.65	55.5	0.298	84.0	0.294
7	0.00	23.58	10.88	35	12.3	2.05	55.1	0.309	85.1	0.298
8	0.00	22.58	11.33	34	12.4	1.98	55.4	0.299	84.6	0.296
9	0.00	23.12	11.20	34	12.0	2.51	55.8	0.301	87.7	0.307
10	0.00	23.41	11.40	35	12.0	2.63	55.4	0.304	85.9	0.301
11	0.00	23.11	11.88	34	12.1	2.73	55.5	0.302	86.9	0.304
12	0.00	23.46	11.89	35	11.9	3.14	55.0	0.305	84.1	0.294
13	0.00	22.98	12.12	34	12.0	2.84	55.4	0.300	83.0	0.291
14	0.00	23.28	11.27	35	11.9	2.89	55.5	0.300	82.9	0.290
15	0.00	23.27	11.96	35	11.9	3.23	55.2	0.296	82.2	0.288
16	0.00	23.19	12.04	35	12.2	3.45	54.9	0.300	89.8	0.314
17	0.00	23.20	12.73	35	12.0	2.93	54.8	0.296	82.7	0.290
18	0.00	23.08	12.00	34	11.8	2.80	55.2	0.296	83.2	0.291
20	0.00	23.21	12.42	35	11.6	2.51	55.7	0.295	80.6	0.282
	Average	23.24	11.87	35	12.2	2.61	55.2	0.301	84.4	0.295

Total number of blows analyzed: 19

Time Summary

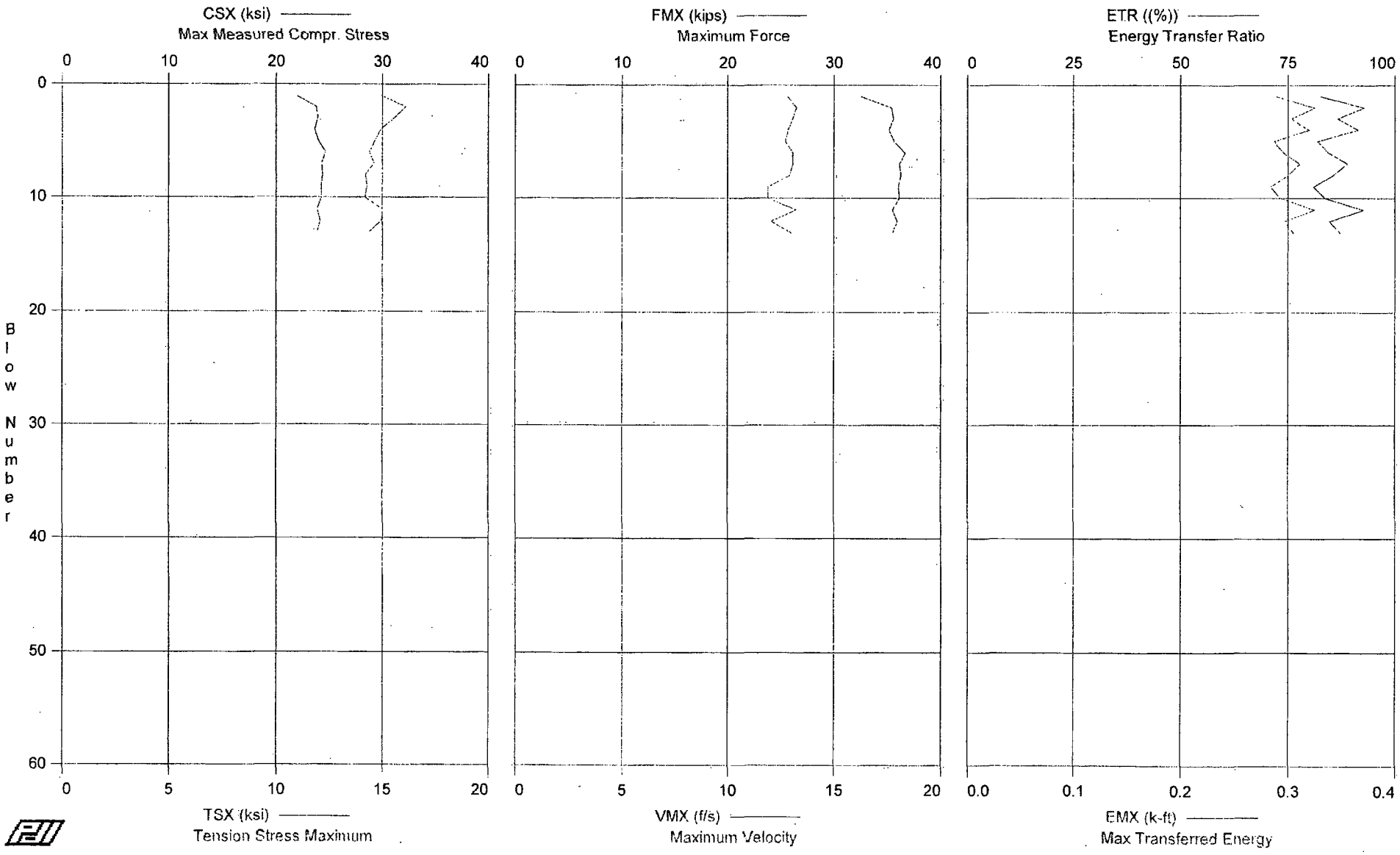
Drive 21 seconds 12:08:08 PM - 12:08:29 PM (1/17/2007) BN 1 - 20

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-4014; 38.5' - 40' Sample



Plant Vogtle COL Project - Boring B-4014; 38.5' - 40' Sample
Rig Serial No. 200587 (MACTEC Knoxville CME 75 Truck)
OP: SEK
Test date: 17-Jan-2007

AR: 1.49 in^2
LE: 44.00 ft
WS: 16,807.9 f/s
SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement
BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
1	0.00	21.85	14.94	33	12.8	3.12	0.0	0.316	82.7	0.289
2	0.00	23.75	16.09	35	13.3	3.64	53.8	0.305	92.9	0.325
3	0.00	23.87	15.57	36	13.1	3.54	53.7	0.303	86.7	0.303
4	0.00	23.59	14.93	35	12.9	3.13	54.5	0.321	91.5	0.320
5	0.00	23.93	14.66	36	12.7	2.68	55.6	0.312	82.0	0.287
6	0.00	24.61	14.40	37	13.1	2.98	27.3	0.317	84.6	0.296
7	0.00	24.26	14.62	36	13.1	4.10	54.3	0.315	88.9	0.311
8	0.00	24.34	14.21	36	12.9	4.04	54.4	0.316	85.6	0.300
9	0.00	24.19	14.29	36	11.9	3.08	54.6	0.316	81.0	0.284
10	0.00	24.24	14.19	36	11.9	3.95	55.1	0.315	83.7	0.293
11	0.00	23.81	15.00	35	13.2	5.83	54.7	0.309	92.8	0.325
12	0.00	24.11	14.96	36	12.1	7.26	54.6	0.309	84.8	0.297
13	0.00	23.81	14.39	35	13.0	4.62	54.2	0.306	87.3	0.305
	Average	23.87	14.79	36	12.8	4.00	52.2	0.312	86.5	0.303

Total number of blows analyzed: 13

Time Summary

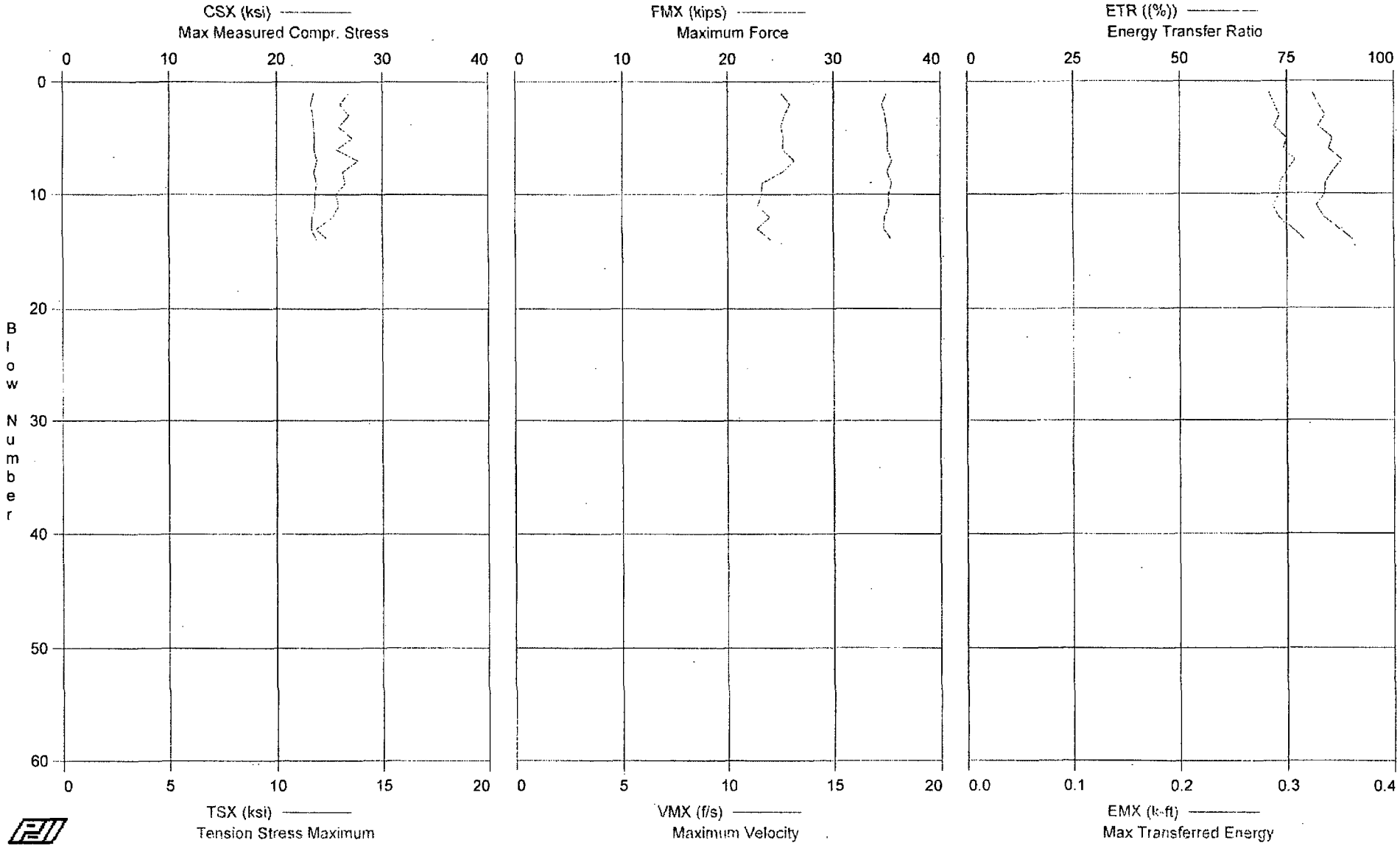
Drive 14 seconds 12:23:04 PM - 12:23:18 PM (1/17/2007) BN 1 - 13

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-4014; 43.5' - 45' Sample



Plant Vogtle COL Project - Boring B-4014; 43.5' - 45' Sample
OP: SEK

Rig Serial No. 200587 (MACTEC Knoxville CME 75 Truck)
Test date: 17-Jan-2007

AR: 1.49 in^2
LE: 49.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
1	0.00	23.46	13.40	35	12.5	2.63	0.0	0.302	80.9	0.283
2	0.00	23.17	12.99	35	13.0	3.00	52.8	0.293	82.3	0.288
3	0.00	23.36	13.43	35	12.7	2.55	52.8	0.299	83.8	0.293
4	0.00	23.47	12.93	35	12.5	3.35	54.2	0.297	82.3	0.288
5	0.00	23.54	13.57	35	12.7	2.56	53.9	0.312	85.6	0.300
6	0.00	23.52	12.82	35	12.6	2.44	54.5	0.297	84.8	0.297
7	0.00	23.80	13.86	35	13.2	2.80	53.3	0.314	87.9	0.308
8	0.00	23.51	13.13	35	12.6	3.12	53.8	0.308	85.8	0.300
9	0.00	23.80	13.27	35	11.7	2.85	53.4	0.307	84.1	0.294
10	0.00	23.63	12.82	35	11.6	1.61	53.6	0.308	84.0	0.294
11	0.00	23.64	12.96	35	11.4	5.32	54.5	0.307	82.0	0.287
12	0.00	23.35	12.67	35	12.0	2.39	53.7	0.305	83.6	0.293
13	0.00	23.29	11.87	35	11.4	2.46	54.5	0.306	87.1	0.305
14	0.00	23.76	12.41	35	12.0	2.91	53.0	0.313	90.3	0.316
	Average	23.52	13.01	35	12.3	2.86	53.7	0.305	84.6	0.296

Total number of blows analyzed: 14

Time Summary

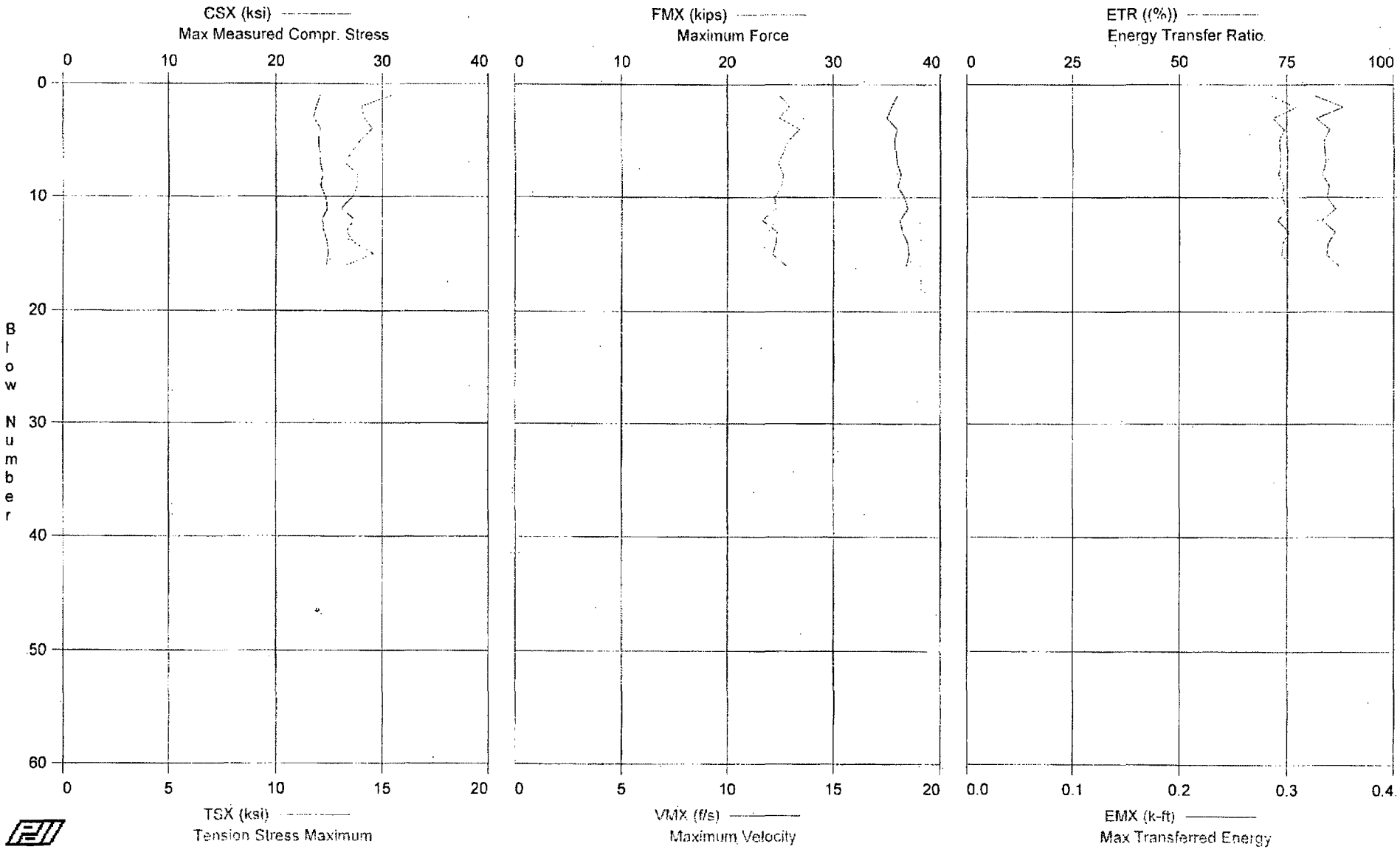
Drive 15 seconds 12:36:17 PM - 12:36:32 PM (1/17/2007) BN 1 - 14

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-4014; 48.5' - 50' Sample



Plant Vogtle COL Project - Boring B-4014; 48.5' - 50' Sample
OP: SEK

Rig Serial No. 200587 (MACTEC Knoxville CME 75 Truck)
Test date: 17-Jan-2007

AR: 1.49 in^2
LE: 54.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	24.19	15.51	36	12.5	2.23	0.0	0.311	81.8	0.286
2	0.00	23.82	14.02	35	13.0	2.58	52.6	0.313	88.2	0.309
3	0.00	23.54	14.14	35	12.5	2.85	54.6	0.297	82.0	0.287
4	0.00	24.19	14.54	36	13.4	2.98	52.9	0.308	85.0	0.298
5	0.00	24.01	13.97	36	12.9	2.55	54.1	0.304	83.7	0.293
7	0.00	24.15	13.19	36	12.4	2.89	53.8	0.308	84.0	0.294
8	0.00	24.40	13.81	36	12.7	3.16	54.5	0.306	83.3	0.292
9	0.00	24.18	13.82	36	12.6	2.47	53.9	0.313	84.9	0.297
10	0.00	24.61	13.59	37	12.3	2.43	54.2	0.309	84.3	0.295
11	0.00	24.81	13.06	37	12.3	2.22	53.7	0.318	86.3	0.302
12	0.00	24.34	13.67	36	11.7	1.57	54.6	0.305	83.1	0.291
13	0.00	24.48	13.30	36	12.4	2.38	54.4	0.306	86.3	0.302
14	0.00	24.81	13.63	37	12.3	2.80	53.8	0.309	84.6	0.296
15	0.00	24.90	14.59	37	12.1	2.30	54.2	0.317	84.3	0.295
16	0.00	24.73	13.31	37	12.8	2.86	53.9	0.312	87.1	0.305
	Average	24.34	13.88	36	12.5	2.55	53.9	0.309	84.6	0.296

Total number of blows analyzed: 15

Time Summary

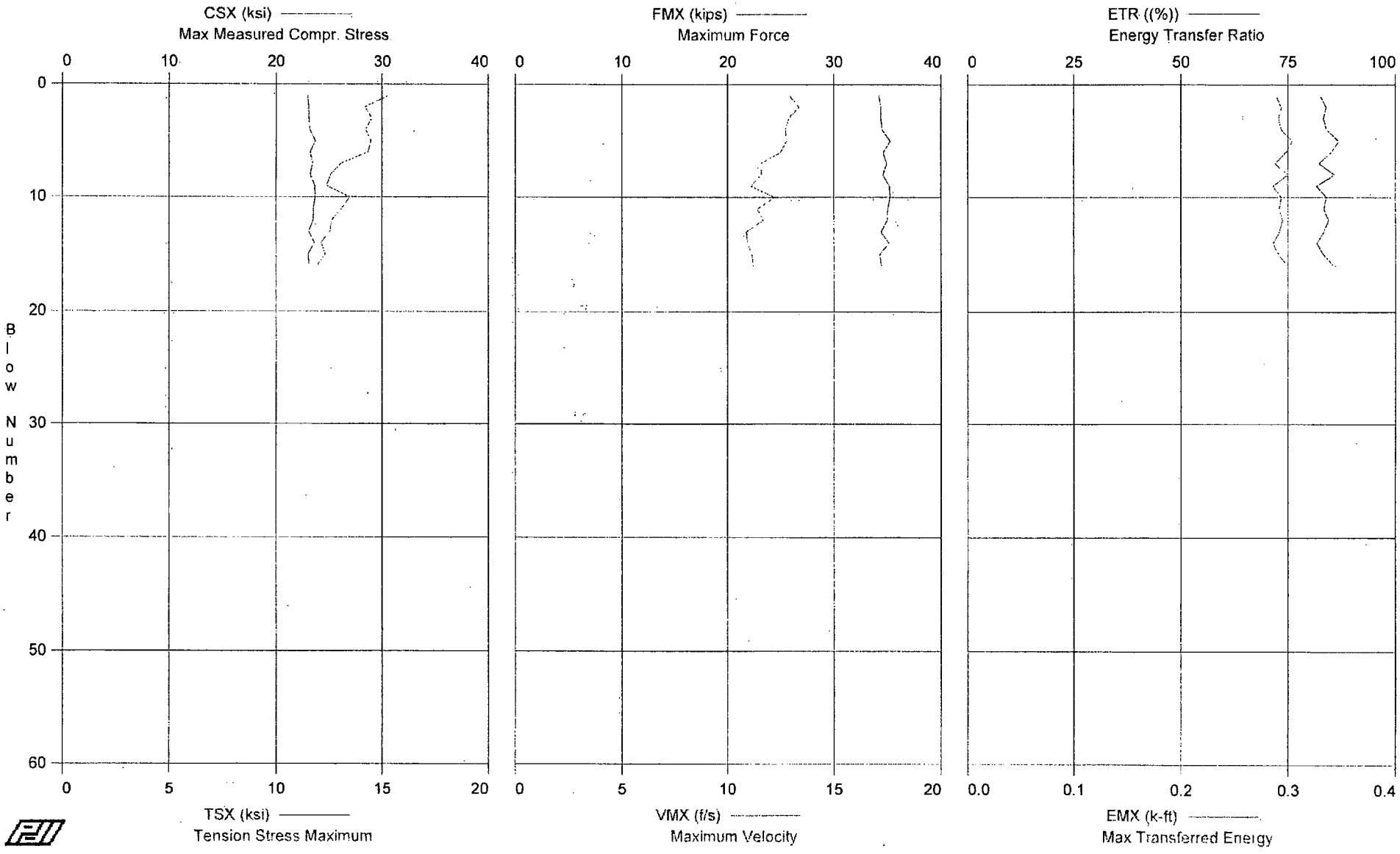
Drive 17 seconds 12:50:25 PM - 12:50:42 PM (1/17/2007) BN 1 - 16

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-4014; 53.5' - 55' Sample



Plant Vogtle COL Project - Boring B-4014; 53.5' - 55' Sample
OP: SEK

Rig Serial No. 200587 (MACTEC Knoxville CME 75 Truck)
Test date: 17-Jan-2007

AR: 1.49 in^2
LE: 59.00 ft
WS: 16,807.9 f/s

SP. 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
1	0.00	22.97	15.30	34	12.9	3.17	0.0	0.304	82.6	0.289
2	0.00	23.08	14.18	34	13.4	3.48	53.1	0.299	83.9	0.294
3	0.00	23.08	14.52	34	12.9	2.99	54.1	0.296	83.2	0.291
4	0.00	23.17	14.21	35	12.7	2.63	54.0	0.299	84.0	0.294
5	0.00	23.68	14.47	35	12.8	2.17	54.0	0.308	86.8	0.304
6	0.00	23.23	14.34	35	12.5	2.91	54.2	0.302	85.0	0.298
7	0.00	23.43	13.07	35	11.6	1.45	54.3	0.304	82.2	0.288
8	0.00	23.21	12.56	35	11.6	2.45	54.5	0.299	85.8	0.300
9	0.00	23.64	12.38	35	11.1	3.50	53.9	0.302	81.7	0.286
10	0.00	23.67	13.48	35	12.2	4.07	54.4	0.300	84.0	0.294
11	0.00	23.51	13.08	35	11.4	2.69	54.2	0.305	83.3	0.292
12	0.00	23.49	12.62	35	11.7	4.03	55.6	0.294	84.4	0.295
13	0.00	23.08	12.53	34	10.9	2.58	53.2	0.305	83.3	0.292
14	0.00	23.59	12.11	35	11.0	2.22	54.2	0.299	81.7	0.286
15	0.00	23.01	12.31	34	11.2	2.15	53.1	0.297	83.2	0.291
16	0.00	23.11	11.93	34	11.2	1.53	54.2	0.298	85.6	0.300
	Average	23.31	13.32	35	11.9	2.75	54.1	0.301	83.8	0.293

Total number of blows analyzed: 16

Time Summary

Drive 17 seconds 1:04:10 PM - 1:04:27 PM (1/17/2007) BN 1 - 16

June 27, 2007

Memorandum to File DCN VGCOL 152
From: Steve Kiser
Reviewed By: Pieter Depree

Subject: **Report of SPT Energy – MACTEC Charlotte Diedrich D-50 ATV Hammer Serial No. 100 Automatic Hammer**
WORK INSTRUCTION VGCOL 152
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on January 17, 2007, during drilling of Boring B-1195 at the referenced site. The testing was performed from approximately 9:55 to 11:10 AM under cloudy skies and a temperature of about 40 degrees Fahrenheit. The boring was drilled with personnel and equipment from the Charlotte office of MACTEC. The drilling equipment consisted of a Diedrich D-50 model ATV-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of AW-J-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the boring below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Gary Skoglund. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. AW #144/1 and AW#144/2). An AW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.19 square inches and an outside diameter of approximately 1.75 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 1.75 and 1.375 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

18 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 242 foot-pounds to 263 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 69% to 75% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 253.5 foot-pounds, with a weighted average ETR of 72.4%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 152 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 18 PDIPLOT Output – 12 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 and 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
100 (Diedrich D-50 ATV)	MACTEC Charlotte	Gary Skoglund	B-1195	AW-J	1/17/2007	18.5 - 20.0	18 - 19 - 22	57	242	69.1%
						23.5 - 25.0	17 - 15 - 18	45	252	72.0%
						28.5 - 30.0	8 - 11 - 11	30	263	75.1%
						33.5 - 35.0	9 - 8 - 9	26	257	73.4%
						38.5 - 40.0	6 - 6 - 9	20	261	74.6%
						43.5 - 45.0	7 - 7 - 8	22	262	74.9%
							Weighted Average for Rig:		**253.5**	**72.4%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By:	Date: 6-27-07	Checked By:	Date: 7/31/07

Work Instructions – SPT Energy MACTEC Dietrich D-50 (Skoglund) (Hammer #100)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 1/17/07

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 1/17/07 To: 1/17/08

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 1/17/07

No. of Pages: 1 DCN: VGCOL 152

MACTEC

2801 YORKMONT ROAD, SUITE 100 D CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	DIEDRICH
LOCATION:	Waynesboro, Georgia	MODEL:	D-50 ~~ATV~~ SK ATV
PROJECT NO.:	6141-06-0286	SERIAL NO.:	100
DATE:	1-17-07	HAMMER TYPE:	AUTOMATIC
WEATHER:	CLOUDY COLD 40°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	AW-J
DRILLING COMPANY:	MACTEC CHARLOTTE	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-1195		
DEPTH DRILLED:	50' PLANNED		
TIME DRIVEN:	11:00 AM		
RIG OPERATOR:	GARY SKOGLUND		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.19 in²		
ACCEL. SERIAL NOS.:	P5094 / P5953		
STRAIN SERIAL NOS.:	144 AW 1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
18.5/20	18-19-22										
23.5/25	17-15-18										
28.5/30	8-11-11										
33.5/35	9-8-9										
38.5/40	6-6-9										
43.5/45	7-7-8										

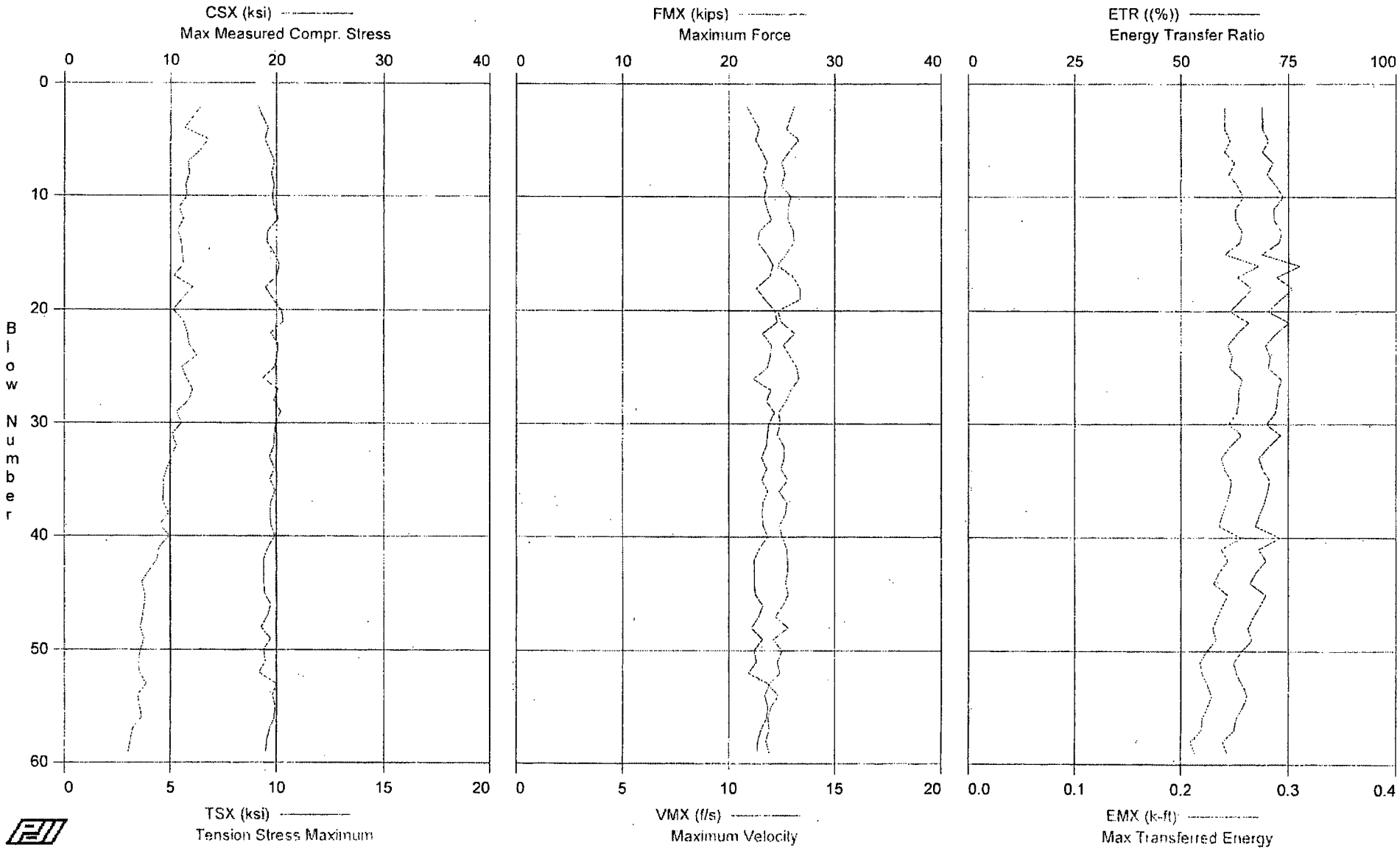
REMARKS:

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-1195; 18.5' - 20' Sample



Plant Vogtle COL Project - Boring B-1195; 18.5' - 20' Sample
Rig Serial No. 100 (MACTEC Charlotte D-50 ATV)
OP: SEK
Test date: 17-Jan-2007

AR: 1.19 in^2
LE: 24.00 ft
WS: 16,807.9 f/s
SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement
BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
2	0.00	18.22	6.46	22	13.1	0.93	42.7	0.171	68.9	0.241
4	0.00	19.21	5.68	23	12.7	0.76	43.2	0.171	68.9	0.241
5	0.00	18.91	6.78	23	13.3	1.02	47.4	0.173	70.3	0.246
6	0.00	19.43	6.40	23	12.8	1.09	47.7	0.175	68.9	0.241
7	0.00	19.82	5.82	24	12.5	0.20	47.5	0.179	71.4	0.250
8	0.00	19.53	5.90	23	12.6	0.76	48.1	0.178	70.0	0.245
9	0.00	19.81	5.74	24	12.5	1.33	47.8	0.179	72.2	0.253
10	0.00	19.60	5.79	23	12.9	1.23	47.6	0.182	73.8	0.258
11	0.00	19.80	5.42	24	12.8	1.36	47.8	0.181	71.6	0.251
12	0.00	20.16	5.61	24	12.8	1.18	47.8	0.180	71.7	0.251
13	0.00	19.20	5.35	23	13.1	0.93	48.0	0.184	73.4	0.257
14	0.00	19.08	5.52	23	13.1	0.61	47.8	0.185	72.8	0.255
15	0.00	19.77	5.56	24	12.7	0.58	47.9	0.182	68.8	0.241
16	0.00	20.28	5.61	24	12.3	1.39	48.0	0.185	77.7	0.272
17	0.00	20.03	5.18	24	13.0	0.74	47.9	0.186	72.3	0.253
18	0.00	18.96	6.06	23	13.4	1.13	47.8	0.190	76.0	0.266
19	0.00	19.65	5.57	23	13.4	0.84	48.1	0.190	73.0	0.256
20	0.00	20.44	5.13	24	12.3	0.41	48.1	0.185	70.2	0.246
21	0.00	20.63	5.61	25	12.5	0.86	47.5	0.191	75.2	0.263
22	0.00	19.48	5.81	23	13.1	0.36	47.5	0.189	72.0	0.252
23	0.00	20.17	5.87	24	12.6	0.67	46.9	0.184	69.6	0.244
24	0.00	20.07	6.27	24	12.9	0.68	47.6	0.185	70.8	0.248
25	0.00	19.87	5.57	24	13.2	0.40	47.3	0.187	70.4	0.246
26	0.00	18.72	5.76	22	13.3	0.66	47.2	0.188	73.3	0.257
27	0.00	20.13	6.05	24	12.9	1.14	47.5	0.184	72.6	0.254
28	0.00	19.78	5.87	24	12.7	0.92	47.4	0.186	72.5	0.254
29	0.00	20.42	5.30	24	12.3	0.82	47.4	0.185	71.9	0.252
30	0.00	19.96	5.53	24	12.4	0.21	47.4	0.183	69.9	0.245
31	0.00	19.86	5.08	24	12.3	0.98	47.6	0.184	73.2	0.256
32	0.00	19.76	5.28	24	12.6	0.37	47.2	0.184	70.4	0.246
33	0.00	19.38	5.03	23	12.6	0.80	47.6	0.178	68.1	0.238
34	0.00	19.80	4.85	24	12.5	0.78	47.2	0.176	69.0	0.241
35	0.00	19.43	4.68	23	12.8	0.97	47.4	0.179	70.7	0.247
36	0.00	19.88	4.67	24	12.4	0.74	47.3	0.179	70.2	0.246
37	0.00	19.50	4.64	23	12.7	1.00	47.2	0.184	69.4	0.243
38	0.00	19.43	4.91	23	12.7	0.41	47.5	0.180	68.3	0.239
39	0.00	19.50	4.50	23	12.4	0.63	47.5	0.175	67.4	0.236
40	0.00	19.87	4.94	24	12.5	1.40	47.0	0.179	73.2	0.256
41	0.00	19.20	4.46	23	12.7	0.13	47.4	0.179	68.1	0.238
42	0.00	18.80	4.36	22	12.8	0.54	47.6	0.176	69.8	0.244
43	0.00	18.81	3.99	22	12.8	0.95	47.5	0.176	67.5	0.236
44	0.00	18.81	3.63	22	12.7	0.46	47.7	0.175	66.1	0.231
45	0.00	18.87	3.77	22	12.8	1.12	47.1	0.176	69.7	0.244
46	0.00	19.48	3.76	23	12.6	1.73	47.3	0.174	68.3	0.239
47	0.00	19.17	3.66	23	12.2	0.77	47.7	0.170	66.8	0.234
48	0.00	18.58	3.57	22	12.8	0.93	47.4	0.170	65.6	0.230
49	0.00	19.46	3.72	23	12.1	0.50	47.2	0.171	66.5	0.233
50	0.00	18.79	3.58	22	12.5	0.35	47.1	0.167	64.1	0.224
51	0.00	18.96	3.48	23	12.3	0.78	47.5	0.164	62.4	0.218
52	0.00	18.35	3.52	22	12.4	0.18	47.5	0.162	63.0	0.220
53	0.00	20.01	3.83	24	11.9	0.43	47.3	0.176	64.4	0.225
54	0.00	19.63	3.43	23	12.3	0.41	47.2	0.181	65.4	0.229
55	0.00	19.89	3.54	24	12.0	0.46	47.5	0.179	64.4	0.225
56	0.00	19.79	3.62	24	11.8	1.48	47.4	0.170	62.8	0.220
57	0.00	19.34	3.20	23	11.9	1.19	47.5	0.170	62.5	0.219
58	0.00	19.10	3.09	23	11.8	0.44	47.0	0.168	59.8	0.209
59	0.00	19.01	3.01	23	11.9	0.16	47.9	0.167	60.9	0.213
	Average	19.50	4.89	23	12.6	0.78	47.4	0.179	69.3	0.242

Total number of blows analyzed: 57

Time Summary

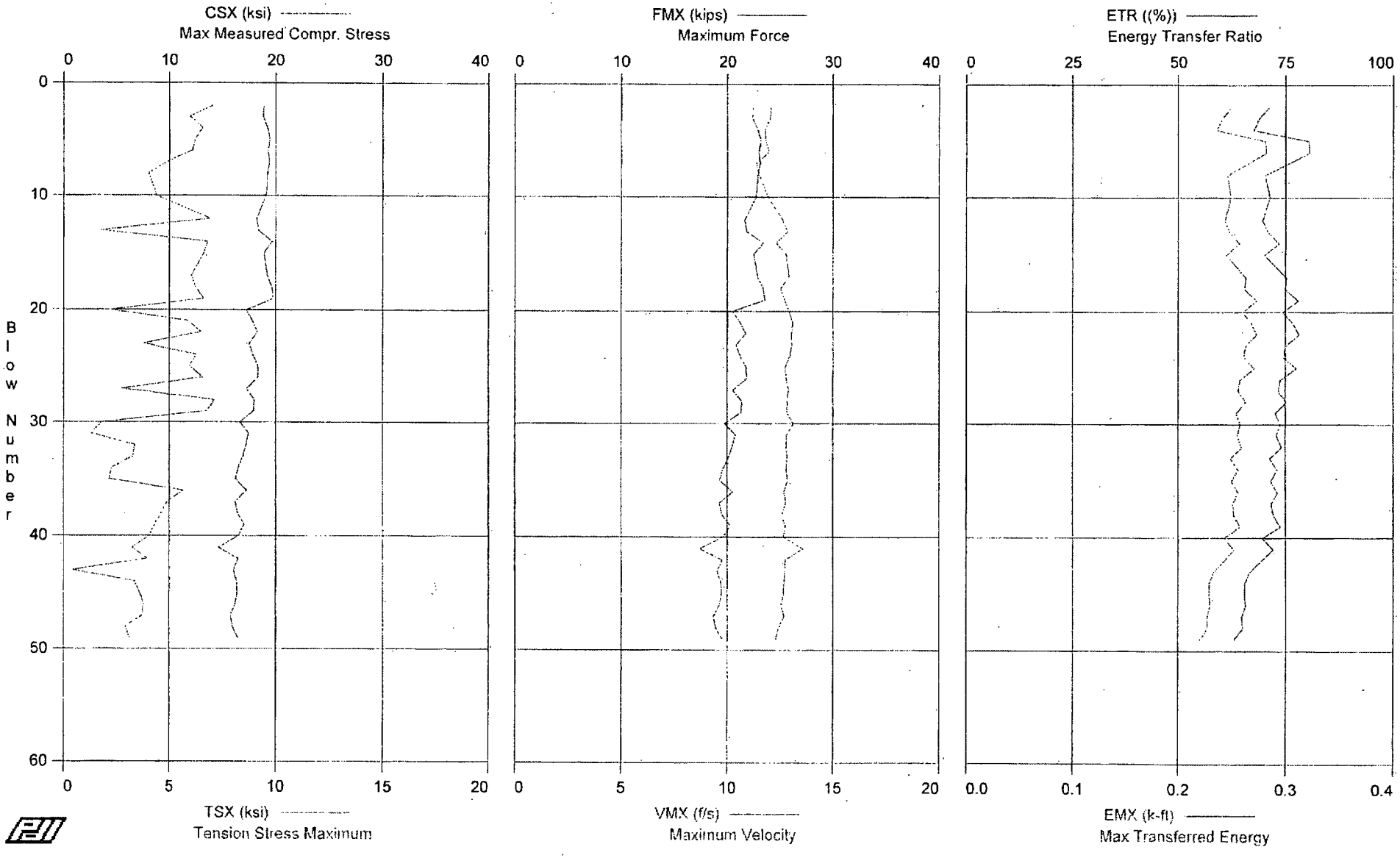
Drive 1 minute 14 seconds 9:59:39 AM - 10:00:53 AM (1/17/2007) BN 1 - 60

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-1195; 23.5' - 25' Sample



Plant Vogtle COL Project - Boring B-1195; 23.5' - 25' Sample
OP: SEK

Rig Serial No. 100 (MACTEC Charlotte D-50 ATV)
Test date: 17-Jan-2007

AR: 1.19 in^2
LE: 29.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
2	0.00	18.86	7.03	22	12.0	1.18	46.0	0.186	71.0	0.249
3	0.00	18.82	5.96	22	12.0	1.08	47.6	0.187	68.8	0.241
4	0.00	19.21	6.56	23	11.8	-0.37	47.8	0.183	67.6	0.236
5	0.00	19.44	6.21	23	11.8	1.67	48.6	0.192	80.4	0.281
6	0.00	19.28	6.07	23	12.0	1.56	51.1	0.193	80.6	0.282
7	0.00	19.40	4.93	23	11.4	1.08	51.9	0.187	75.7	0.265
8	0.00	19.24	3.99	23	11.5	0.28	52.0	0.182	70.3	0.246
10	0.00	19.09	4.38	23	11.9	0.82	44.2	0.182	71.2	0.249
12	0.00	18.19	6.92	22	12.6	0.60	40.2	0.198	69.6	0.244
13	0.00	18.35	1.72	22	12.8	1.10	51.5	0.000	70.9	0.248
14	0.00	19.67	6.78	23	12.3	0.98	51.9	0.201	73.4	0.257
15	0.00	18.90	6.61	22	12.8	1.23	52.1	0.197	70.1	0.245
17	0.00	19.21	6.04	23	12.9	-0.39	42.1	0.202	75.2	0.263
18	0.00	19.65	6.22	23	12.5	-0.07	51.6	0.202	74.9	0.262
19	0.00	19.79	6.61	24	12.7	1.87	51.9	0.203	78.0	0.273
20	0.00	17.22	2.19	20	12.9	1.08	52.2	0.000	74.3	0.260
21	0.00	17.80	5.87	21	13.1	0.74	51.8	0.195	76.7	0.268
22	0.00	18.28	6.48	22	13.1	1.11	52.0	0.201	78.1	0.273
23	0.00	17.49	3.76	21	13.1	0.87	51.5	0.204	75.0	0.263
24	0.00	17.82	6.28	21	13.0	1.28	52.2	0.198	74.5	0.261
25	0.00	18.31	5.94	22	12.7	1.23	51.7	0.201	77.5	0.271
26	0.00	18.33	6.56	22	12.8	1.03	51.9	0.195	73.7	0.258
27	0.00	17.24	2.72	21	12.9	1.55	51.9	0.000	73.3	0.256
28	0.00	17.96	7.10	21	12.8	1.03	51.2	0.198	75.2	0.263
29	0.00	17.89	6.75	21	12.8	1.17	51.9	0.192	72.6	0.254
30	0.00	16.59	1.82	20	13.1	1.01	51.9	0.000	73.8	0.258
31	0.00	17.45	1.29	21	12.8	0.62	52.0	0.199	72.8	0.255
32	0.00	17.19	3.35	20	12.8	0.78	51.5	0.198	74.0	0.259
33	0.00	16.90	3.25	20	12.8	0.72	51.9	0.196	71.3	0.249
34	0.00	16.44	2.26	20	12.8	0.35	51.6	0.000	73.0	0.256
35	0.00	16.19	2.15	19	12.9	0.77	51.6	0.000	71.5	0.250
36	0.00	17.24	5.67	21	12.7	0.81	51.9	0.189	73.1	0.256
37	0.00	16.17	4.91	19	12.8	0.64	51.6	0.187	71.6	0.251
38	0.00	16.37	4.61	19	12.6	2.11	51.7	0.189	72.1	0.252
39	0.00	17.03	4.28	20	12.7	1.17	51.2	0.191	73.8	0.258
40	0.00	16.45	4.03	20	12.7	0.61	52.2	0.183	69.6	0.243
41	0.00	14.60	3.21	17	13.6	-0.44	50.1	0.176	72.1	0.252
42	0.00	16.42	3.93	20	12.7	1.01	51.5	0.182	69.3	0.243
43	0.00	15.99	0.40	19	12.7	1.02	26.0	0.000	66.6	0.233
44	0.00	16.29	3.32	19	12.7	0.92	51.5	0.176	65.5	0.229
45	0.00	16.35	3.56	19	12.7	0.85	51.6	0.173	65.5	0.229
46	0.00	16.18	3.73	19	12.5	0.86	51.3	0.175	65.7	0.230
47	0.00	15.71	3.74	19	12.7	0.71	51.5	0.171	64.8	0.227
48	0.00	15.87	2.89	19	12.4	0.88	51.4	0.171	65.0	0.227
49	0.00	16.38	3.06	19	12.3	1.11	51.9	0.167	63.0	0.220
	Average	17.63	4.56	21	12.6	0.89	50.1	0.160	72.1	0.252

Total number of blows analyzed: 45

Time Summary

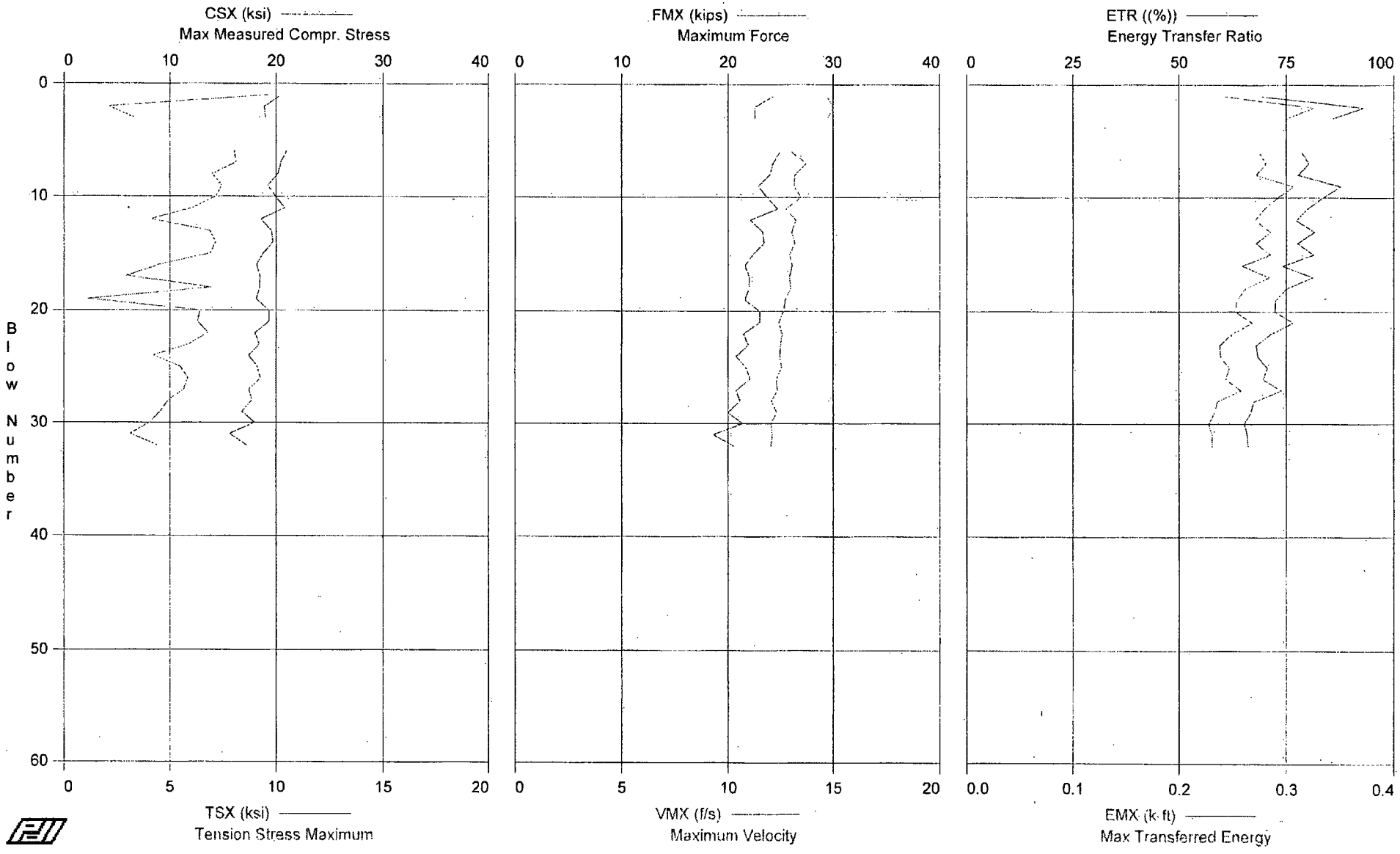
Drive 59 seconds 10:12:39 AM - 10:13:38 AM (1/17/2007) BN 1 - 50

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-1195; 28.5' - 30' Sample



Plant Vogtle COL Project - Boring B-1195; 28.5' - 30' Sample
OP: SEK

Rig Serial No. 100 (MACTEC Charlotte D-50 ATV)
Test date: 17-Jan-2007

AR: 1.19 in^2
LE: 34.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	20.51	9.62	24	14.7	2.93	0.0	0.213	69.4	0.243
2	0.00	18.93	2.11	23	15.0	1.81	41.4	0.230	93.1	0.326
3	0.00	18.97	3.28	23	14.7	2.12	42.4	0.000	85.7	0.300
6	0.00	20.98	8.05	25	13.1	0.81	42.9	0.232	78.6	0.275
7	0.00	20.44	8.12	24	13.7	0.44	42.9	0.236	80.3	0.281
8	0.00	20.18	7.00	24	13.2	0.96	43.1	0.230	77.8	0.272
9	0.00	19.23	7.44	23	13.2	1.80	43.2	0.244	87.6	0.307
10	0.00	19.93	7.16	24	13.5	1.94	42.9	0.238	83.5	0.292
11	0.00	20.82	6.08	25	12.8	1.71	43.1	0.238	79.8	0.279
12	0.00	18.58	4.10	22	13.2	1.18	42.8	0.000	77.3	0.271
13	0.00	19.55	6.89	23	13.0	1.43	42.9	0.236	81.5	0.285
14	0.00	19.70	7.15	23	13.2	1.08	43.1	0.237	77.6	0.272
15	0.00	18.81	6.91	22	12.9	1.18	42.9	0.239	81.4	0.285
16	0.00	18.17	4.53	22	13.1	0.12	43.0	0.000	74.1	0.259
17	0.00	18.50	2.95	22	12.9	1.53	43.0	0.235	81.2	0.284
18	0.00	18.47	6.96	22	13.0	1.70	43.2	0.226	75.0	0.262
19	0.00	18.16	1.13	22	12.7	0.80	43.0	0.000	72.5	0.254
20	0.00	19.33	6.43	23	12.7	0.39	43.0	0.221	72.4	0.253
21	0.00	19.34	6.31	23	12.4	1.27	43.2	0.223	76.6	0.268
22	0.00	18.02	6.79	21	12.6	0.89	43.1	0.216	71.2	0.249
23	0.00	18.44	5.91	22	12.5	1.03	43.2	0.210	68.0	0.238
24	0.00	17.45	4.22	21	12.5	0.45	43.1	0.212	68.3	0.239
25	0.00	18.23	5.51	22	12.6	0.47	43.1	0.214	70.6	0.247
26	0.00	18.56	5.86	22	12.3	0.97	43.3	0.211	69.6	0.244
27	0.00	17.46	5.67	21	12.4	1.37	43.2	0.206	73.8	0.258
28	0.00	17.74	4.94	21	12.1	0.32	43.2	0.203	67.5	0.236
29	0.00	16.80	4.55	20	12.3	0.51	43.1	0.195	66.7	0.233
30	0.00	17.97	4.05	21	12.1	0.87	43.2	0.191	65.2	0.228
31	0.00	15.64	3.12	19	12.1	1.05	43.3	0.000	65.9	0.231
32	0.00	17.26	4.40	21	12.1	1.30	43.1	0.184	66.1	0.231
	Average	18.74	5.57	22	12.9	1.15	43.0	0.184	75.3	0.263

Total number of blows analyzed: 30

Time Summary

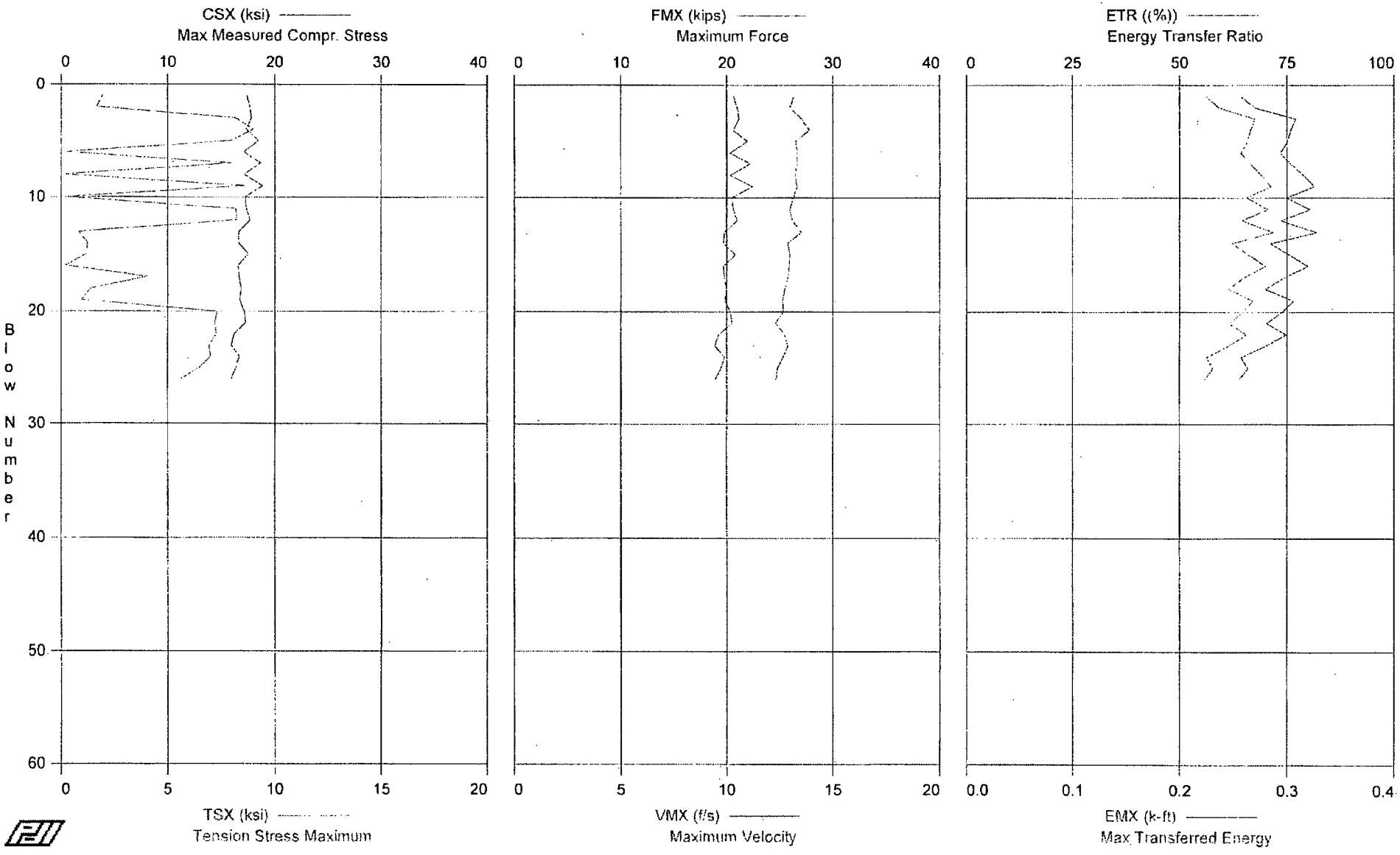
Drive 43 seconds 10:24:22 AM - 10:25:05 AM (1/17/2007) BN 1 - 32

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-1195; 33.5' - 35' Sample



Plant Vogtle COL Project - Boring B-1195; 33.5' - 35' Sample
OP: SEK

Rig Serial No. 100 (MACTEC Charlotte D-50 ATV)
Test date: 17-Jan-2007

AR: 1.19 in^2
LE: 39.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	17.36	1.95	21	13.2	1.57	0.0	0.000	64.3	0.225
2	0.00	17.64	1.68	21	13.0	1.94	54.5	0.000	67.6	0.237
3	0.00	17.79	8.14	21	13.5	1.98	50.8	0.191	77.0	0.270
4	0.00	17.32	8.97	21	13.9	1.82	51.5	0.189	75.9	0.266
5	0.00	18.43	7.99	22	13.3	1.96	51.1	0.187	75.1	0.263
6	0.00	17.09	0.24	20	13.3	1.27	51.3	0.000	73.4	0.257
7	0.00	18.65	8.01	22	13.3	1.87	51.4	0.196	76.0	0.266
8	0.00	17.10	0.09	20	13.2	2.58	51.5	0.197	78.9	0.276
9	0.00	18.83	8.59	22	13.3	2.30	51.1	0.199	81.4	0.285
10	0.00	17.21	0.21	20	13.2	0.66	51.2	0.000	74.9	0.262
11	0.00	17.32	8.16	21	13.0	1.99	51.5	0.203	80.5	0.282
12	0.00	17.65	8.23	21	13.1	1.53	51.3	0.194	73.6	0.258
13	0.00	16.60	0.82	20	13.5	1.27	51.2	0.205	82.1	0.287
14	0.00	16.55	1.24	20	12.9	1.37	51.6	0.000	71.1	0.249
15	0.00	17.49	1.20	21	13.0	1.36	51.3	0.000	75.6	0.264
16	0.00	16.55	0.18	20	13.0	1.66	51.3	0.201	80.0	0.280
17	0.00	16.61	4.05	20	12.9	0.81	51.3	0.000	74.4	0.260
18	0.00	16.81	1.38	20	12.7	1.46	51.5	0.000	69.9	0.245
19	0.00	16.68	0.96	20	12.7	1.93	51.3	0.194	76.5	0.268
20	0.00	17.10	7.31	20	12.7	0.87	51.0	0.191	73.9	0.259
21	0.00	17.23	7.20	21	12.3	0.83	51.5	0.186	70.2	0.246
22	0.00	16.18	7.27	19	12.7	2.15	51.1	0.185	74.8	0.262
23	0.00	15.88	6.93	19	12.9	1.00	51.2	0.177	69.9	0.245
24	0.00	16.63	7.01	20	12.7	0.72	51.4	0.170	64.3	0.225
25	0.00	16.35	6.49	19	12.4	1.55	50.8	0.167	65.9	0.231
26	0.00	15.90	5.62	19	12.3	1.28	51.0	0.165	63.7	0.223
	Average	17.11	4.61	20	13.0	1.53	51.4	0.131	73.5	0.257

Total number of blows analyzed: 26

Time Summary

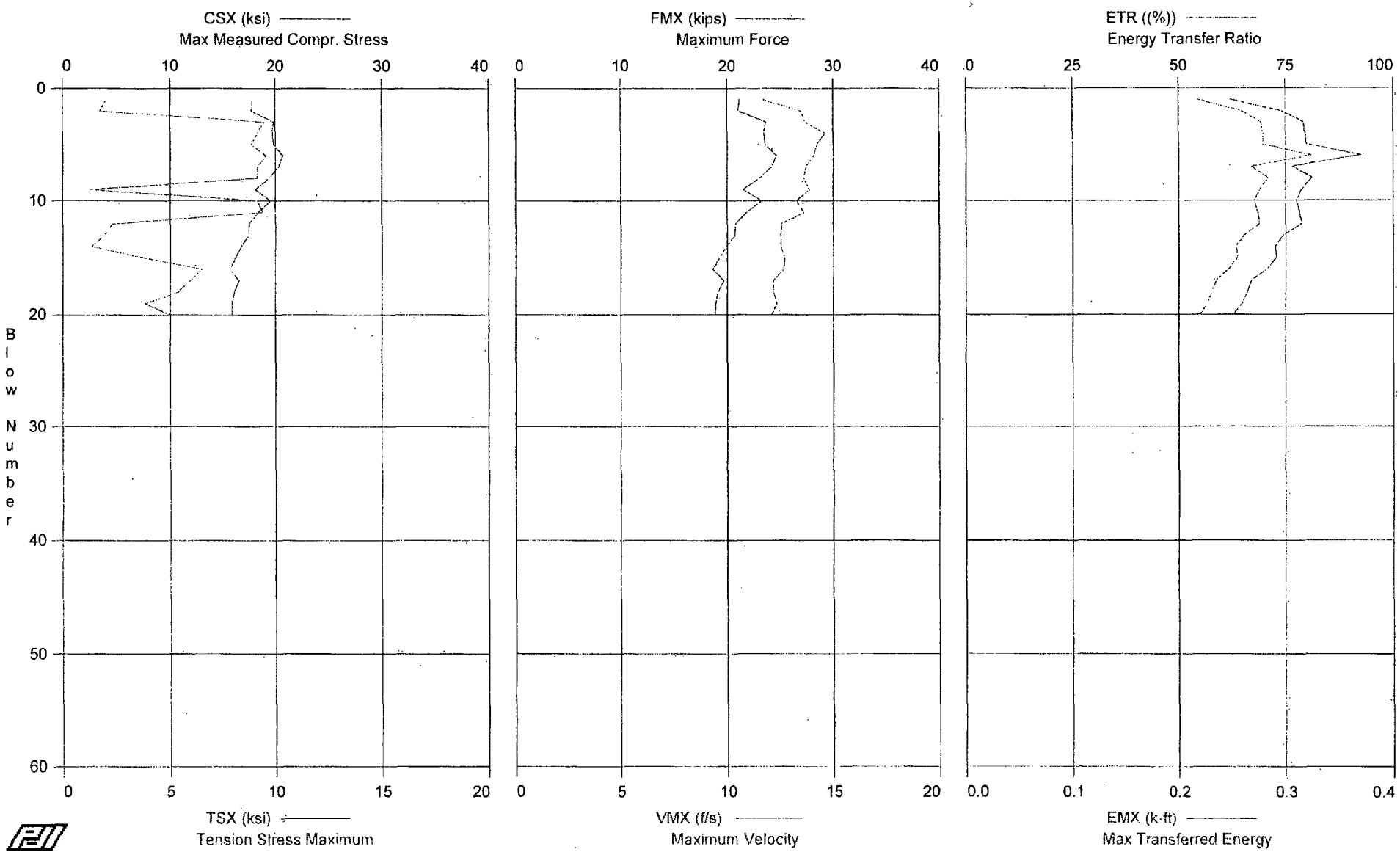
Drive 30 seconds 10:38:47 AM - 10:39:17 AM (1/17/2007) BN 1 - 27

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-1195; 38.5' - 40' Sample



MACTEC Engineering and Consulting, Inc.
Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Plant Vogtle COL Project - Boring B-1195; 38.5' - 40' Sample

Rig Serial No. 100 (MACTEC Charlotte D-50 ATV)

OP: SEK

Test date: 17-Jan-2007

AR: 1.19 in^2
LE: 44.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	17.79	2.04	21	11.7	1.66	0.0	0.189	62.2	0.218
2	0.00	17.71	1.72	21	13.5	1.54	54.2	0.000	74.0	0.259
3	0.00	19.89	9.47	24	13.7	3.07	54.2	0.202	79.2	0.277
4	0.00	19.70	9.12	23	14.6	2.50	53.8	0.204	79.6	0.279
5	0.00	19.82	8.84	24	14.2	1.96	53.7	0.211	79.8	0.279
6	0.00	20.69	9.52	25	14.1	2.81	54.2	0.224	92.5	0.324
7	0.00	20.29	9.14	24	13.7	2.22	54.1	0.218	76.6	0.268
8	0.00	19.39	9.13	23	13.6	1.93	53.9	0.222	81.2	0.284
9	0.00	18.07	1.28	21	13.9	2.38	53.6	0.000	78.8	0.276
10	0.00	19.54	9.13	23	13.3	1.43	53.6	0.218	77.5	0.271
11	0.00	18.36	9.40	22	13.6	1.10	53.6	0.218	78.3	0.274
12	0.00	17.47	2.31	21	12.5	1.81	26.8	0.212	78.8	0.276
13	0.00	17.40	1.95	21	12.5	1.99	53.5	0.000	74.5	0.261
14	0.00	16.72	1.33	20	12.5	2.13	26.7	0.000	72.5	0.254
15	0.00	16.17	3.77	19	12.7	1.35	53.4	0.000	72.8	0.255
16	0.00	15.65	6.51	19	12.6	2.41	53.1	0.000	70.7	0.247
17	0.00	16.52	5.97	20	12.2	1.63	53.9	0.180	67.0	0.235
18	0.00	16.07	5.36	19	12.2	2.13	53.3	0.173	66.1	0.231
19	0.00	15.86	3.81	19	12.3	1.50	53.3	0.169	64.8	0.227
20	0.00	15.85	5.01	19	12.1	1.95	53.2	0.163	62.9	0.220
	Average	17.95	5.74	21	13.1	1.97	50.8	0.140	74.5	0.261

Total number of blows analyzed: 20

Time Summary

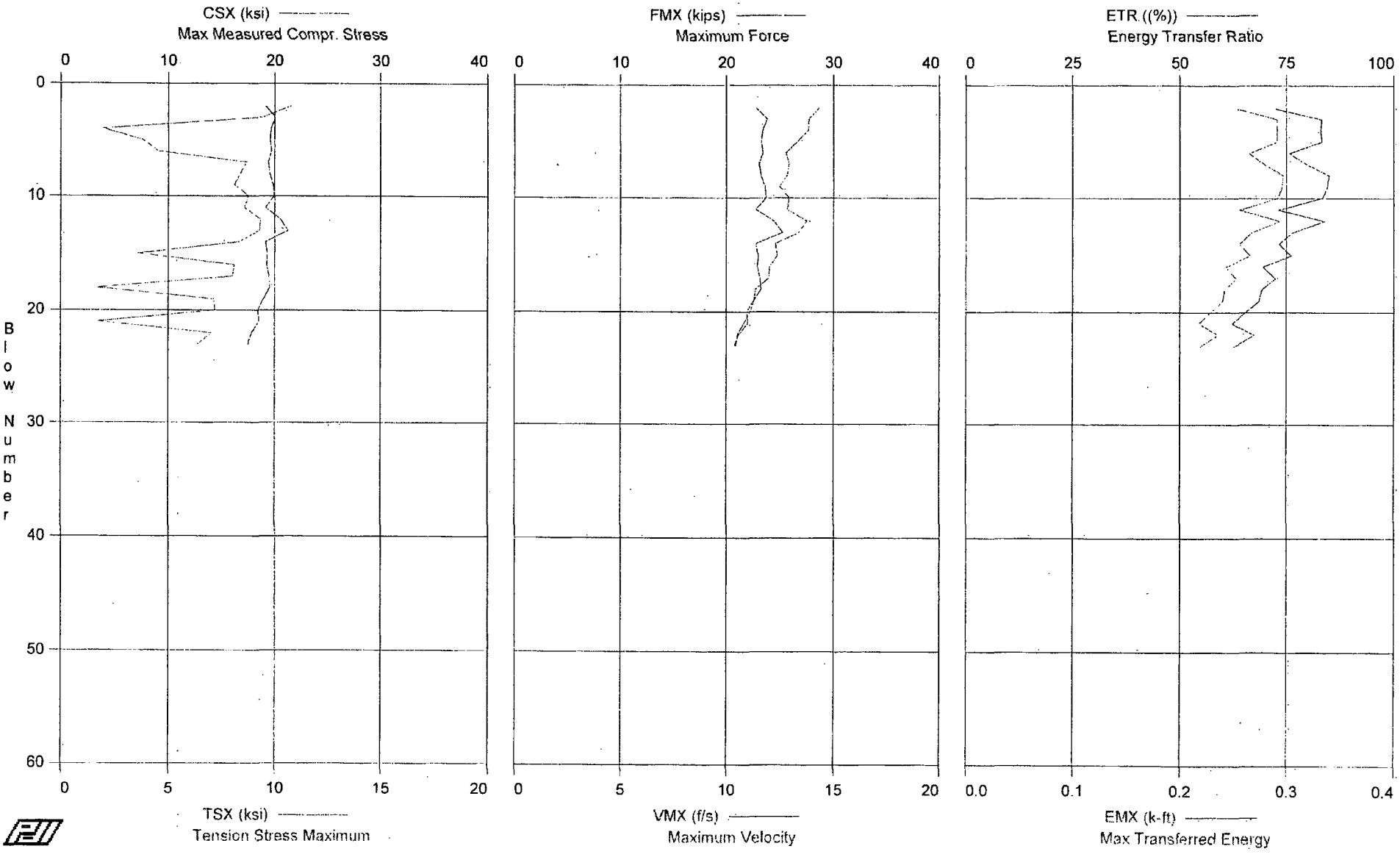
Drive 23 seconds 10:52:12 AM - 10:52:35 AM (1/17/2007) BN 1 - 20

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-1195; 43.5' - 45' Sample



Plant Vogtle COL Project - Boring B-1195; 43.5' - 45' Sample
OP: SEK

Rig Serial No. 100 (MACTEC Charlotte D-50 ATV)
Test date: 17-Jan-2007

AR: 1.19 in^2
LE: 49.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
2	0.00	19.15	10.76	23	14.3	2.11	57.8	0.218	72.2	0.253
3	0.00	20.03	9.42	24	13.9	1.94	54.9	0.226	83.2	0.291
4	0.00	19.68	1.99	23	13.8	2.06	54.1	0.000	83.1	0.291
5	0.00	19.55	3.82	23	13.3	2.25	54.3	0.000	83.3	0.291
6	0.00	19.69	4.55	23	12.8	1.70	54.1	0.000	75.8	0.265
7	0.00	19.37	8.66	23	12.9	2.22	54.9	0.232	79.7	0.279
8	0.00	19.54	8.36	23	12.9	2.42	53.7	0.243	85.0	0.297
9	0.00	19.83	8.08	24	12.5	1.66	54.1	0.243	84.6	0.296
10	0.00	19.94	8.75	24	12.9	1.79	54.0	0.241	83.4	0.292
11	0.00	19.13	8.55	23	12.9	1.79	54.4	0.232	73.2	0.256
12	0.00	20.54	9.31	24	13.8	1.76	53.7	0.238	83.9	0.294
13	0.00	21.25	9.27	25	13.4	1.80	54.7	0.240	76.3	0.267
14	0.00	19.12	8.30	23	12.3	1.21	54.1	0.231	73.2	0.256
15	0.00	19.30	3.56	23	12.4	1.61	54.0	0.227	76.1	0.266
16	0.00	19.25	8.09	23	12.0	0.29	53.9	0.220	69.4	0.243
17	0.00	19.44	8.01	23	12.0	1.35	53.6	0.224	72.4	0.253
18	0.00	19.52	1.71	23	11.4	1.12	53.6	0.000	69.2	0.242
19	0.00	18.93	7.13	23	11.3	0.84	53.4	0.208	68.4	0.240
20	0.00	18.39	7.19	22	11.1	0.20	53.8	0.201	65.3	0.229
21	0.00	18.50	1.74	22	10.8	1.85	53.5	0.000	62.2	0.218
22	0.00	17.79	7.03	21	10.5	1.41	54.1	0.193	67.4	0.236
23	0.00	17.44	6.38	21	10.5	1.67	53.6	0.185	62.7	0.219
	Average	19.34	6.85	23	12.4	1.59	54.2	0.173	75.0	0.262

Total number of blows analyzed: 22

Time Summary

Drive 25 seconds 11:05:06 AM - 11:05:31 AM (1/17/2007) BN 1 - 23

June 27, 2007

Memorandum to File DCN VGCOL 105
From: Steve Kiser SK
Reviewed By: Pieter Depree PD

Subject: **Report of SPT Energy – MACTEC Atlanta CME 75 Truck Hammer Serial No. 219907 Automatic Hammer**
WORK INSTRUCTION VGCOL 105
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on March 8, 2007, during drilling of Boring B-4017 at the referenced site. The testing was performed from approximately 10:05 to 11:50 AM under sunny skies and a temperature of about 60 degrees Fahrenheit. The boring was drilled with personnel and equipment from the Atlanta office of MACTEC. The drilling equipment consisted of a CME 75 model truck-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of N3-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the boring below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Jimmy Oglesby. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. NW #146/1 and NW#146/2). An NW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.49 square inches and an outside diameter of approximately 2.625 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 2.625 and 2.25 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

14 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 268 foot-pounds to 296 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 77% to 85% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 280.9 foot-pounds, with a weighted average ETR of 80.2%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 105 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 14 PDIPLOT Output – 8 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 and 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
219907 (CME 75 Truck)	MACTEC Atlanta	Jimmy Oglesby	B-4017	N3	3/8/2007	138.5 - 140.0	13 - 14 - 43	71	268	76.6%
						143.5 - 145.0	21 - 35 - 50/4"	109	283	80.9%
						148.5 - 150.0	12 - 12 - 21	45	296	84.6%
							Weighted Average for Rig:		**280.9**	**80.2%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By:	Date:	Checked By:	Date:
[illegible]	6-27-07	WAC	7/31/07

Work Instructions – SPT Energy MACTEC CME-75 (Oglesby)
(Hammer #219907)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 12/20/06

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 12/20/06 To: 12/20/07

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 12/20/06

No. of Pages: 1 DCN: VGCOL 105

MACTEC

2801 YORKMONT ROAD, SUITE 100 D CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME
LOCATION:	Waynesboro, Georgia	MODEL:	75 TRUCK
PROJECT NO.:	6141-06-0286	SERIAL NO.:	219907
DATE:	3-8-07	HAMMER TYPE:	AUTOMATIC
WEATHER:	SUNNY; NICE 60°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	N3
DRILLING COMPANY:	MACTEC ATLANTA	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-4017		
DEPTH DRILLED:	150' PLANNED		
TIME DRIVEN:	9:40 AM		
RIG OPERATOR:	JIMMY OGLESBY		
HAMMER OPERATOR:	N.R		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.49 in²		
ACCEL. SERIAL NOS.:	P5094 / P5953		
STRAIN SERIAL NOS.:	NW # 146 1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
138.5/140'	13-14-43										
143.5/145'	21-35-50/4"										
148.5/150'	12-12-21										

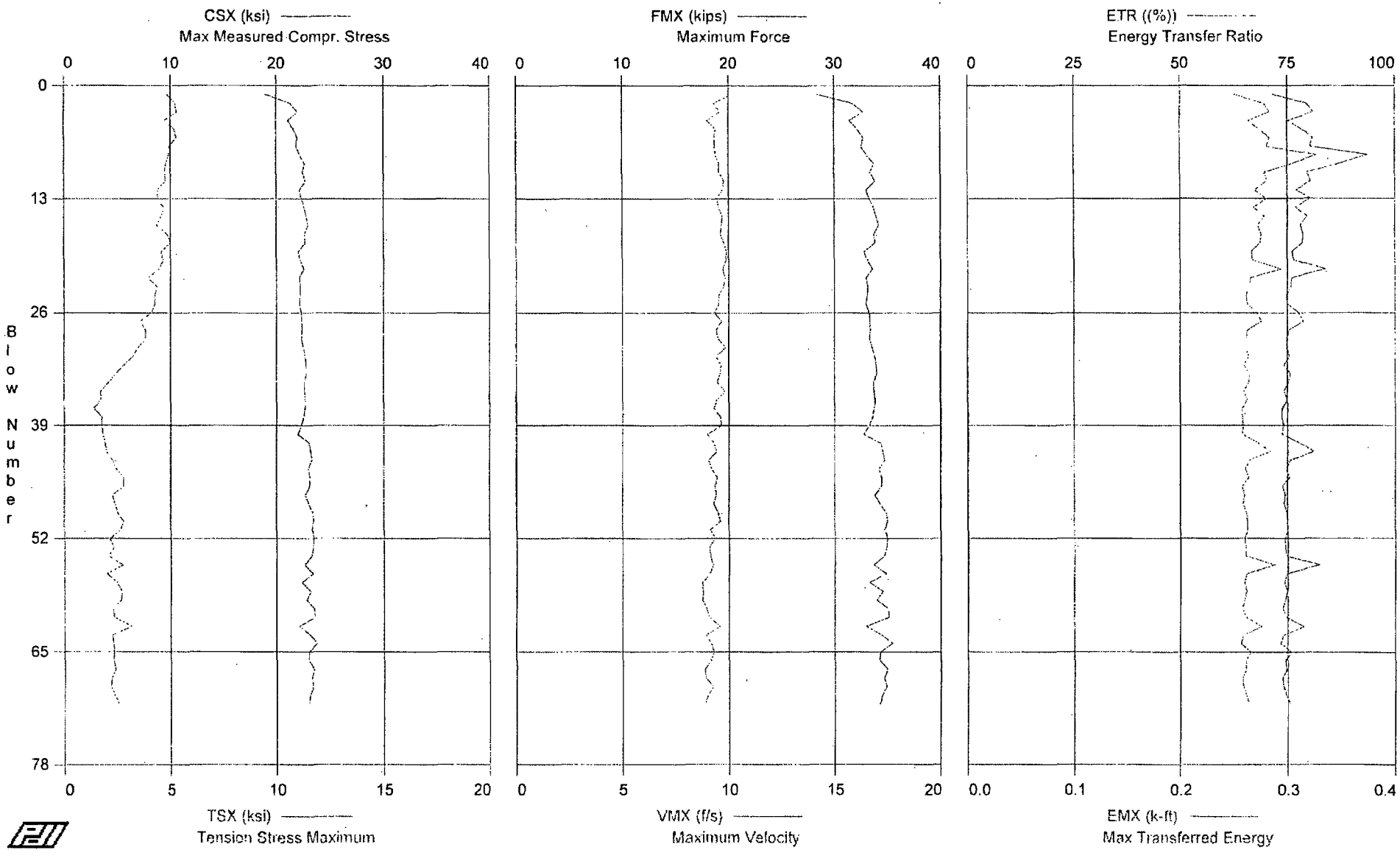
REMARKS:

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 8-Mar-2007

Plant Vogtle COL Project - Boring B-4017; 138.5' - 140' Sample



MACTEC Engineering and Consulting, Inc.
Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Plant Vogtle COL Project - Boring B-4017; 138.5' - 140' Sample

Rig Serial No. 219907 (MACTEC Atlanta CME 75 Truck)

OP: SEK

Test date: 8-Mar-2007

AR: 1.49 in^2
LE: 144.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	19.03	4.84	28	10.2	1.09	0.0	0.228	71.8	0.251
2	0.00	21.30	5.22	32	9.3	1.86	47.2	0.267	79.5	0.278
3	0.00	21.97	5.31	33	9.6	1.26	48.0	0.285	81.1	0.284
4	0.00	21.10	4.71	31	9.0	1.01	53.1	0.264	75.3	0.264
5	0.00	21.61	5.19	32	9.4	0.84	48.3	0.279	78.4	0.274
6	0.00	21.99	5.27	33	9.3	1.63	49.3	0.277	81.1	0.284
7	0.00	21.85	4.94	33	9.3	1.77	48.8	0.280	80.3	0.281
8	0.00	22.20	4.91	33	9.4	2.40	48.5	0.277	93.8	0.328
9	0.00	22.68	4.79	34	9.6	2.21	48.5	0.289	87.2	0.305
10	0.00	22.43	4.74	33	9.6	1.48	48.3	0.284	79.7	0.279
11	0.00	22.70	4.75	34	9.8	1.54	48.2	0.288	80.4	0.281
12	0.00	22.14	4.38	33	9.7	1.39	48.2	0.277	77.1	0.270
13	0.00	22.36	4.37	33	9.5	1.24	48.2	0.282	80.4	0.281
14	0.00	22.62	4.69	34	9.5	1.93	48.2	0.284	77.0	0.269
15	0.00	22.79	4.56	34	9.7	2.49	48.2	0.284	79.7	0.279
16	0.00	22.95	4.34	34	9.7	1.29	48.2	0.284	78.0	0.273
17	0.00	22.64	4.83	34	9.6	1.58	48.1	0.282	78.7	0.276
18	0.00	22.72	5.02	34	9.8	1.38	48.2	0.287	78.6	0.275
19	0.00	22.04	4.57	33	9.9	0.63	48.2	0.276	76.2	0.267
20	0.00	22.23	4.64	33	9.9	1.60	48.2	0.275	76.5	0.268
21	0.00	22.54	4.44	34	9.7	1.73	48.2	0.284	83.9	0.294
22	0.00	22.14	3.90	33	9.8	0.76	48.2	0.274	76.1	0.266
23	0.00	22.25	4.36	33	9.8	1.81	48.2	0.276	75.8	0.265
24	0.00	22.21	4.25	33	9.5	1.33	48.2	0.274	74.8	0.262
25	0.00	22.14	4.24	33	9.5	1.12	48.2	0.271	75.1	0.263
26	0.00	22.33	4.09	33	9.3	1.31	48.2	0.280	77.7	0.272
27	0.00	22.37	3.53	33	9.7	1.32	48.3	0.280	78.7	0.276
28	0.00	22.41	3.80	33	9.4	1.33	48.2	0.277	75.2	0.263
29	0.00	22.35	3.80	33	9.5	0.91	48.3	0.281	75.0	0.262
30	0.00	22.52	3.46	34	9.8	1.41	48.3	0.280	74.9	0.262
31	0.00	22.70	3.21	34	9.4	0.76	48.3	0.283	75.5	0.264
32	0.00	22.79	2.76	34	9.6	0.72	48.3	0.281	74.2	0.260
33	0.00	22.81	2.41	34	9.6	0.69	48.3	0.283	75.7	0.265
34	0.00	22.61	2.06	34	9.4	0.88	48.4	0.280	75.3	0.264
35	0.00	22.63	1.70	34	9.8	0.76	48.4	0.282	74.2	0.260
36	0.00	22.73	1.71	34	9.4	0.43	48.5	0.282	75.0	0.263
37	0.00	22.64	1.36	34	9.3	0.33	48.4	0.281	73.8	0.258
38	0.00	22.54	1.73	34	9.6	0.71	48.4	0.276	73.7	0.258
39	0.00	22.34	1.73	33	9.6	0.80	48.3	0.276	74.1	0.259
40	0.00	21.98	1.79	33	9.0	0.22	48.4	0.278	73.8	0.258
41	0.00	23.06	1.90	34	9.3	1.04	48.3	0.286	77.9	0.273
42	0.00	23.19	1.95	35	9.4	0.89	48.4	0.291	81.2	0.284
43	0.00	23.31	2.23	35	9.0	0.79	48.5	0.290	75.7	0.265
44	0.00	22.95	2.39	34	9.2	0.64	48.5	0.287	74.6	0.261
45	0.00	23.12	2.76	34	9.5	1.06	48.4	0.288	75.4	0.264
46	0.00	23.10	2.76	34	9.4	0.54	48.4	0.286	73.8	0.258
47	0.00	22.68	2.22	34	9.4	0.49	48.5	0.287	74.4	0.260
48	0.00	23.00	2.35	34	9.3	0.24	48.3	0.288	74.1	0.259
49	0.00	23.39	2.47	35	9.5	0.59	48.5	0.291	74.9	0.262
50	0.00	23.50	2.77	35	9.6	0.70	48.4	0.292	75.0	0.263
51	0.00	23.32	2.61	35	9.1	0.62	48.4	0.292	75.1	0.263
52	0.00	23.46	2.10	35	9.3	0.73	48.5	0.293	74.3	0.260
53	0.00	23.41	2.29	35	9.1	0.70	48.6	0.294	74.5	0.261
54	0.00	23.26	2.03	35	9.1	0.84	48.5	0.290	74.6	0.261
55	0.00	22.61	2.72	34	9.2	1.23	48.5	0.289	82.4	0.288
56	0.00	23.41	1.96	35	9.1	0.65	48.6	0.293	74.8	0.262
57	0.00	22.34	2.43	33	8.8	0.13	48.7	0.294	74.2	0.260
58	0.00	23.19	2.66	35	8.8	0.29	48.6	0.295	74.9	0.262
59	0.00	22.80	2.64	34	8.8	0.47	48.5	0.294	74.4	0.260
60	0.00	23.52	2.28	35	8.9	-1.15	48.5	0.295	73.9	0.258
61	0.00	23.56	2.30	35	9.1	0.39	48.6	0.296	74.8	0.262
62	0.00	22.12	3.16	33	9.6	-0.96	48.5	0.000	78.8	0.276
63	0.00	23.12	2.22	34	8.9	0.02	48.6	0.294	74.0	0.259
64	0.00	23.80	2.28	35	9.2	-0.06	48.5	0.296	73.4	0.257
65	0.00	23.04	2.30	34	9.3	-0.03	48.7	0.292	75.9	0.266

Plant Vogtle COL Project - Boring B-4017; 138.5' - 140' Sample
OP: SEK

Rig Serial No. 219907 (MACTEC Atlanta CME 75 Truck)
Test date: 8-Mar-2007

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
66	0.00	22.99	2.28	34	9.1	-0.01	48.6	0.294	74.5	0.261
67	0.00	23.46	2.36	35	8.8	0.63	48.5	0.297	74.7	0.261
68	0.00	23.26	2.17	35	8.9	0.35	48.5	0.294	73.7	0.258
69	0.00	23.41	2.14	35	9.2	-0.07	48.5	0.295	74.0	0.259
70	0.00	23.13	2.33	34	9.0	0.18	48.6	0.290	74.7	0.262
71	0.00	23.01	2.52	34	8.9	-0.59	48.5	0.286	75.6	0.264
	Average	22.65	3.24	34	9.4	0.86	48.5	0.280	76.6	0.268

Total number of blows analyzed: 71

Time Summary

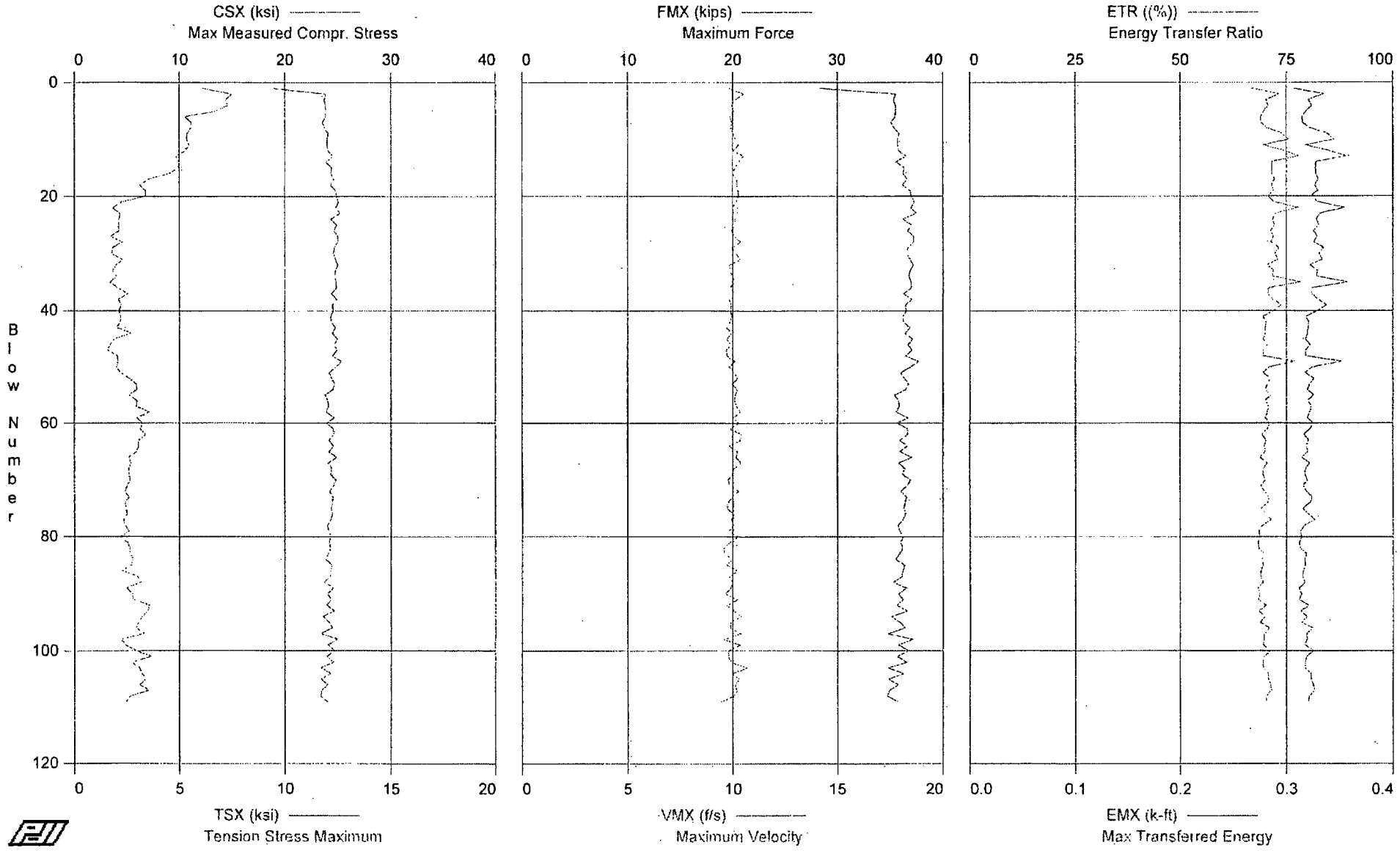
Drive 1 minute 27 seconds 10:05:13 AM - 10:06:40 AM (3/8/2007) BN 1 - 71

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 8-Mar-2007

Plant Vogtle COL Project - Boring B-4017; 143.5' - 145' Sample



Plant Vogtle COL Project - Boring B-4017; 143.5' - 145' Sample
OP: SEK

Rig Serial No. 219907 (MACTEC Atlanta CME 75 Truck)
Test date: 8-Mar-2007

AR: 1.49 in^2
LE: 149.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
1	0.00	18.98	6.09	28	9.8	1.69	0.0	0.238	76.6	0.268
2	0.00	23.89	7.51	36	10.5	1.82	42.5	0.308	83.8	0.293
3	0.00	23.72	7.20	35	10.1	1.65	54.2	0.293	80.2	0.281
4	0.00	23.85	7.32	36	10.0	1.53	53.0	0.297	81.0	0.283
5	0.00	23.85	6.69	36	10.1	1.03	52.8	0.293	79.7	0.279
6	0.00	23.85	5.27	36	9.9	0.64	52.8	0.296	78.7	0.276
7	0.00	23.57	5.57	35	10.0	1.02	52.9	0.295	78.7	0.276
8	0.00	23.75	5.54	35	9.9	0.84	52.8	0.294	80.5	0.282
9	0.00	24.08	5.36	36	10.0	0.75	52.7	0.300	84.6	0.296
10	0.00	23.98	5.36	36	10.1	0.95	53.0	0.304	86.2	0.302
11	0.00	23.98	5.46	36	10.3	0.75	52.7	0.296	79.5	0.278
12	0.00	24.05	5.29	36	10.0	0.76	52.9	0.303	85.0	0.298
13	0.00	24.54	4.84	37	10.5	1.00	52.7	0.308	89.0	0.312
14	0.00	23.87	4.99	36	10.3	0.78	52.8	0.302	81.8	0.286
15	0.00	24.42	4.95	36	10.1	0.90	52.8	0.300	81.8	0.286
16	0.00	24.34	4.52	36	10.0	1.00	52.8	0.301	81.8	0.286
17	0.00	24.59	3.54	37	10.2	0.93	52.7	0.303	82.5	0.289
18	0.00	24.29	3.12	36	10.2	1.01	52.7	0.297	81.6	0.286
19	0.00	24.79	3.41	37	10.2	0.69	52.8	0.303	82.4	0.288
20	0.00	24.86	3.38	37	10.3	0.73	52.8	0.300	80.8	0.283
21	0.00	25.04	2.24	37	10.1	0.86	52.7	0.306	82.3	0.288
22	0.00	24.82	1.83	37	10.0	0.95	52.8	0.309	88.8	0.311
23	0.00	25.18	2.18	38	10.1	0.86	52.9	0.307	83.0	0.290
24	0.00	24.31	2.11	36	10.1	0.97	52.6	0.303	82.1	0.287
25	0.00	24.87	2.12	37	10.1	0.77	52.7	0.305	82.7	0.289
26	0.00	24.62	2.13	37	9.9	0.74	52.6	0.302	81.4	0.285
27	0.00	25.00	1.72	37	10.1	0.94	52.7	0.305	82.2	0.288
28	0.00	25.00	2.28	37	10.4	1.03	52.8	0.302	81.3	0.285
29	0.00	24.64	1.82	37	10.0	0.83	52.8	0.308	83.7	0.293
30	0.00	24.56	1.77	37	10.2	0.85	52.7	0.305	82.6	0.289
31	0.00	24.78	2.30	37	10.4	1.22	52.7	0.302	83.4	0.292
32	0.00	24.98	1.99	37	9.8	1.09	52.8	0.301	80.5	0.282
33	0.00	24.77	1.82	37	9.9	1.26	52.7	0.302	82.3	0.288
34	0.00	24.70	2.01	37	10.0	0.89	52.8	0.301	82.1	0.287
35	0.00	24.84	1.69	37	10.1	1.16	52.7	0.305	89.4	0.313
36	0.00	24.85	2.07	37	9.9	1.42	52.8	0.301	81.0	0.283
37	0.00	24.36	2.55	36	10.1	0.88	52.8	0.302	81.0	0.283
38	0.00	24.89	2.09	37	9.8	1.05	52.8	0.304	82.4	0.288
39	0.00	24.47	2.24	36	9.9	1.55	52.7	0.302	84.4	0.295
40	0.00	24.53	2.12	37	9.9	1.22	52.5	0.296	82.3	0.288
41	0.00	24.31	2.19	36	10.0	1.03	53.0	0.303	79.6	0.278
42	0.00	24.36	2.19	36	9.9	0.76	52.5	0.298	80.3	0.281
43	0.00	24.75	2.02	37	9.7	0.94	52.7	0.301	80.1	0.280
44	0.00	24.47	2.73	36	9.9	0.88	52.7	0.300	80.0	0.280
45	0.00	24.95	1.91	37	9.7	0.83	52.5	0.302	79.5	0.278
46	0.00	24.64	1.71	37	9.9	0.77	52.7	0.309	80.6	0.282
47	0.00	24.90	1.58	37	9.7	0.63	52.8	0.305	79.5	0.278
48	0.00	24.47	2.07	36	9.7	0.60	52.7	0.301	79.6	0.278
49	0.00	25.32	2.08	38	10.1	1.03	52.4	0.310	88.0	0.308
50	0.00	24.79	2.01	37	9.8	1.09	52.5	0.304	81.1	0.284
51	0.00	24.17	2.19	36	10.1	0.59	52.4	0.299	79.4	0.278
52	0.00	24.40	2.62	36	10.2	0.45	52.4	0.298	81.5	0.285
53	0.00	24.68	2.94	37	10.0	0.74	52.4	0.300	80.5	0.282
54	0.00	24.48	2.98	36	10.2	0.61	52.4	0.295	79.9	0.280
55	0.00	23.78	2.61	35	10.1	0.30	52.4	0.291	81.4	0.285
56	0.00	24.03	2.98	36	10.1	0.61	52.5	0.290	80.1	0.280
57	0.00	24.09	2.94	36	10.2	0.46	52.4	0.296	80.8	0.283
58	0.00	23.88	3.59	36	10.3	0.15	52.4	0.296	80.5	0.282
59	0.00	24.66	2.97	37	10.0	0.60	52.4	0.299	80.0	0.280
60	0.00	23.94	3.26	36	10.3	0.07	52.4	0.304	81.2	0.284
61	0.00	24.61	3.14	37	9.9	0.02	52.6	0.305	80.5	0.282
62	0.00	24.62	3.40	37	10.4	0.43	52.4	0.298	79.1	0.277
63	0.00	24.13	3.08	36	10.4	0.40	52.6	0.298	80.2	0.281
64	0.00	24.59	3.06	37	9.8	0.82	52.3	0.299	79.7	0.279
65	0.00	24.14	2.96	36	10.2	0.22	52.5	0.300	80.1	0.280

Plant Vogtle COL Project - Boring B-4017; 143.5' - 145' Sample
OP: SEK

Rig Serial No. 219907 (MACTEC Atlanta CME 75 Truck)
Test date: 8-Mar-2007

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
66	0.00	24.89	2.60	37	10.1	0.28	52.4	0.302	78.6	0.275
67	0.00	24.06	2.71	36	10.4	0.68	52.3	0.300	80.5	0.282
68	0.00	24.45	2.59	36	10.0	0.45	52.4	0.300	79.5	0.278
69	0.00	24.29	2.61	36	10.0	0.60	52.4	0.299	79.4	0.278
70	0.00	24.79	2.66	37	9.8	0.94	52.5	0.304	79.9	0.280
71	0.00	24.61	2.53	37	9.8	0.12	52.4	0.302	78.9	0.276
72	0.00	24.19	2.42	36	10.3	0.49	52.4	0.299	79.7	0.279
73	0.00	24.53	2.60	37	10.0	0.93	52.4	0.306	81.1	0.284
74	0.00	24.45	2.42	36	9.8	0.94	52.4	0.299	80.5	0.282
75	0.00	24.37	2.46	36	9.7	0.84	52.3	0.299	78.9	0.276
76	0.00	24.48	2.52	36	10.1	0.89	52.4	0.303	80.2	0.281
77	0.00	24.31	2.35	36	10.0	1.19	52.3	0.299	81.8	0.286
78	0.00	24.00	2.43	36	10.0	0.82	52.3	0.291	79.1	0.277
79	0.00	24.13	2.60	36	9.8	0.84	52.5	0.299	78.3	0.274
80	0.00	24.33	2.19	36	10.3	0.76	52.3	0.299	78.5	0.275
81	0.00	24.15	2.52	36	9.9	0.75	52.3	0.295	78.0	0.273
82	0.00	24.30	2.66	36	9.6	0.55	52.3	0.296	78.3	0.274
83	0.00	24.11	2.69	36	9.6	1.05	52.3	0.301	79.7	0.279
84	0.00	23.85	2.77	36	10.0	0.93	52.3	0.299	79.2	0.277
85	0.00	24.43	2.74	36	9.7	1.04	52.0	0.303	79.5	0.278
86	0.00	24.32	2.29	36	10.2	0.85	52.4	0.297	79.0	0.276
87	0.00	24.26	3.02	36	9.8	1.08	52.1	0.301	78.8	0.276
88	0.00	23.69	3.20	35	10.0	0.54	52.5	0.295	79.4	0.278
89	0.00	24.54	2.49	37	9.9	0.34	52.2	0.298	78.0	0.273
90	0.00	24.02	2.79	36	9.6	0.54	52.6	0.295	78.5	0.275
91	0.00	24.31	2.80	36	10.2	0.57	52.0	0.298	78.0	0.273
92	0.00	23.92	3.58	36	9.7	1.14	52.2	0.297	80.3	0.281
93	0.00	24.62	3.49	37	10.1	0.85	52.2	0.298	78.4	0.274
94	0.00	23.56	3.23	35	10.4	0.85	52.1	0.292	79.9	0.280
95	0.00	24.14	3.07	36	9.9	0.87	52.5	0.292	78.6	0.275
96	0.00	24.45	2.94	36	9.9	0.57	52.0	0.302	81.2	0.284
97	0.00	23.34	3.34	35	10.4	0.66	52.2	0.290	79.7	0.279
98	0.00	24.98	2.23	37	9.6	0.73	52.2	0.304	79.8	0.279
99	0.00	24.04	2.42	36	10.3	0.69	52.4	0.289	79.3	0.278
100	0.00	24.67	2.96	37	9.8	0.83	52.1	0.305	81.4	0.285
101	0.00	23.96	3.69	36	9.8	1.03	52.4	0.294	79.7	0.279
102	0.00	24.58	2.71	37	9.9	0.23	52.0	0.305	79.5	0.278
103	0.00	23.36	3.11	35	10.7	-0.05	52.2	0.285	79.4	0.278
104	0.00	24.37	3.20	36	10.0	0.51	52.1	0.293	80.8	0.283
105	0.00	23.38	3.44	35	10.3	-0.08	52.3	0.284	80.8	0.283
106	0.00	24.01	3.09	36	10.1	0.73	52.1	0.294	81.3	0.285
107	0.00	23.43	3.54	35	10.2	-0.04	52.2	0.292	81.6	0.286
108	0.00	23.31	2.68	35	10.1	0.40	52.2	0.283	80.4	0.281
109	0.00	24.00	2.46	36	9.4	0.66	52.1	0.294	80.2	0.281
	Average	24.29	3.07	36	10.0	0.79	52.4	0.299	80.8	0.283

Total number of blows analyzed: 109

Time Summary

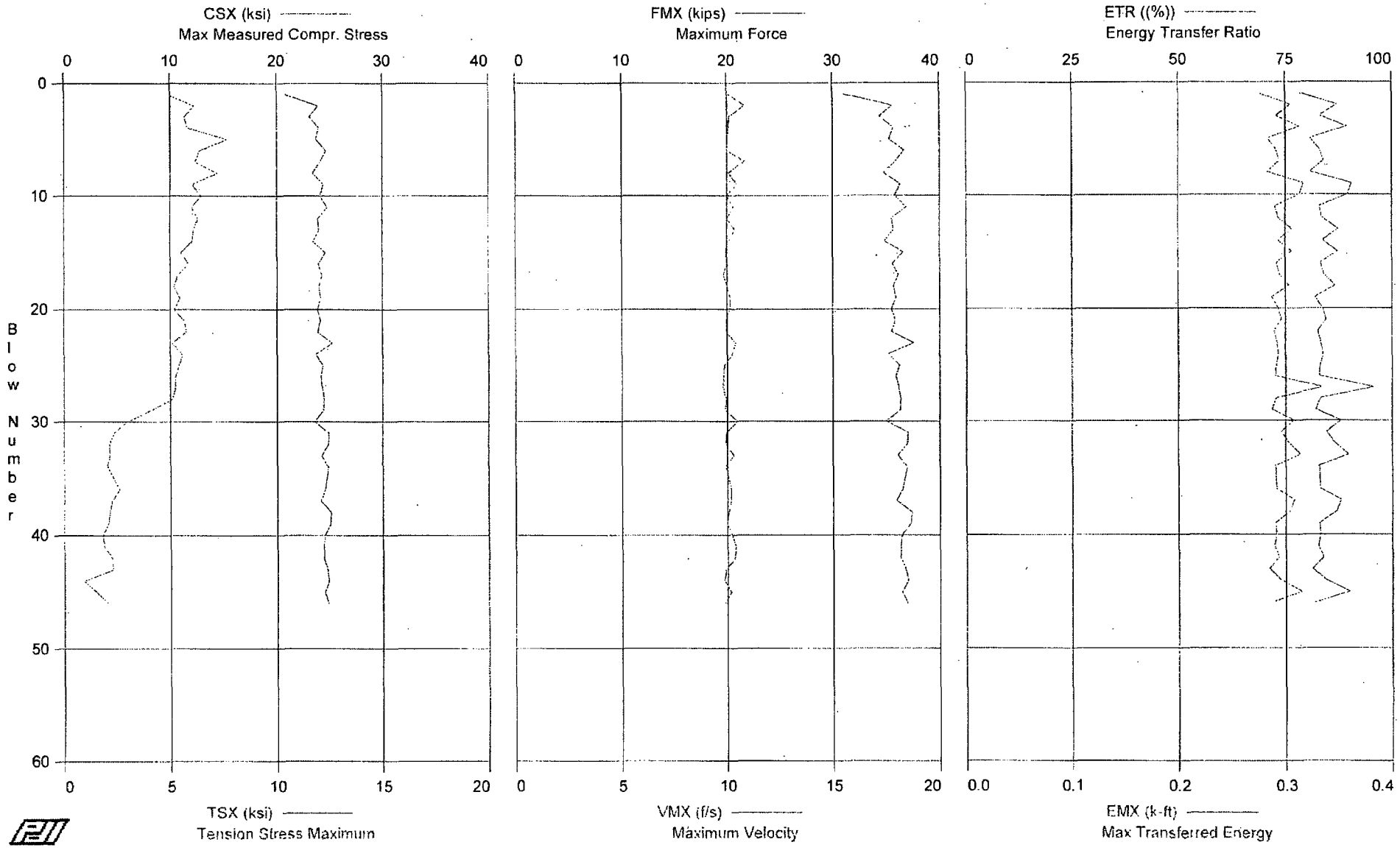
Drive 2 minutes 4 seconds 10:51:19 AM - 10:53:23 AM (3/8/2007) BN 1 - 109

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 16-May-2007

Test date: 8-Mar-2007

Plant Vogtle COL Project - Boring B-4017; 148.5' - 150' Sample



Plant Vogtle COL Project - Boring B-4017; 148.5' - 150' Sample
OP: SEK

Rig Serial No. 219907 (MACTEC Atlanta CME 75 Truck)
Test date: 8-Mar-2007

AR: 1.49 in^2
LE: 154.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	20.81	4.88	31	10.1	3.98	0.0	0.251	78.5	0.275
2	0.00	23.87	6.15	36	10.8	2.70	45.5	0.287	87.1	0.305
3	0.00	23.07	5.68	34	10.1	1.25	51.4	0.288	83.0	0.291
4	0.00	23.93	5.82	36	10.1	1.72	51.1	0.301	89.4	0.313
5	0.00	23.67	7.67	35	10.0	1.02	51.1	0.291	80.9	0.283
6	0.00	24.62	6.41	37	10.0	0.95	51.2	0.301	83.0	0.291
7	0.00	24.08	6.21	36	10.8	1.48	51.2	0.290	84.0	0.294
8	0.00	23.34	7.23	35	10.1	1.49	51.2	0.289	80.8	0.283
9	0.00	24.37	6.05	36	10.5	1.42	51.0	0.302	90.5	0.317
10	0.00	24.02	6.48	36	10.0	1.60	52.6	0.308	89.6	0.313
11	0.00	24.74	6.02	37	10.3	1.80	52.7	0.296	83.0	0.290
12	0.00	23.84	6.33	36	10.0	1.73	52.3	0.299	83.6	0.293
13	0.00	23.95	6.12	36	10.4	1.62	52.4	0.303	87.4	0.306
14	0.00	23.41	6.06	35	10.1	1.26	52.6	0.299	83.8	0.293
15	0.00	24.57	5.52	37	9.9	1.58	52.5	0.301	87.3	0.306
16	0.00	23.86	5.88	36	10.0	1.29	52.5	0.301	83.2	0.291
17	0.00	24.22	5.35	36	9.8	1.33	52.4	0.299	83.9	0.294
18	0.00	23.93	5.19	36	10.0	1.25	52.6	0.303	86.7	0.303
19	0.00	24.11	5.47	36	10.2	1.01	52.4	0.292	82.0	0.287
20	0.00	23.80	5.20	35	10.1	1.62	52.4	0.300	83.8	0.293
21	0.00	24.07	5.66	36	10.0	1.36	52.4	0.301	84.6	0.296
22	0.00	23.82	5.77	35	10.0	1.64	52.4	0.298	82.7	0.289
23	0.00	25.21	5.09	38	10.4	1.29	52.5	0.304	83.3	0.292
24	0.00	23.62	5.59	35	10.3	1.62	52.6	0.305	83.8	0.293
25	0.00	24.29	5.40	36	9.9	1.89	52.5	0.296	83.2	0.291
26	0.00	24.08	5.24	36	9.8	1.46	52.5	0.301	82.8	0.290
27	0.00	24.26	5.24	36	9.8	1.44	52.4	0.306	95.8	0.335
28	0.00	24.40	5.10	36	10.0	1.48	52.6	0.304	83.2	0.291
29	0.00	24.34	4.05	36	9.9	0.64	52.5	0.299	82.1	0.287
30	0.00	23.48	2.98	35	10.5	1.15	52.3	0.304	87.9	0.308
31	0.00	24.85	2.38	37	10.0	1.16	52.5	0.303	84.7	0.296
32	0.00	24.80	2.16	37	9.9	1.08	52.4	0.306	86.6	0.303
33	0.00	24.20	2.17	36	10.3	1.41	52.6	0.308	89.7	0.314
34	0.00	24.77	2.05	37	9.9	1.09	52.4	0.303	82.8	0.290
36	0.00	24.49	2.62	36	10.2	1.45	52.4	0.303	83.0	0.291
37	0.00	24.09	2.27	36	10.2	1.39	52.6	0.301	87.9	0.308
38	0.00	25.06	2.17	37	10.1	1.44	52.4	0.307	86.9	0.304
39	0.00	25.01	2.09	37	10.0	1.10	52.3	0.307	83.0	0.290
40	0.00	24.44	1.83	36	10.2	1.10	52.5	0.303	83.2	0.291
41	0.00	24.38	1.91	36	10.4	1.00	52.4	0.309	82.6	0.289
42	0.00	24.34	2.27	36	10.3	1.07	52.4	0.303	83.8	0.293
43	0.00	24.68	2.29	37	9.9	1.17	52.3	0.302	81.2	0.284
44	0.00	24.82	0.93	37	9.9	1.20	52.6	0.307	84.4	0.295
45	0.00	24.45	1.53	36	10.2	1.09	52.2	0.313	90.0	0.315
46	0.00	24.78	2.11	37	9.9	0.81	52.5	0.302	81.7	0.286
	Average	24.15	4.46	36	10.1	1.41	52.1	0.300	84.7	0.296

Total number of blows analyzed: 45

Time Summary

Drive 52 seconds 11:46:57 AM - 11:47:49 AM (3/8/2007) BN 1 - 46

June 27, 2007

Memorandum to File DCN VGCOL 106
From: Steve Kiser
Reviewed By: Pieter Depree

Subject: **Report of SPT Energy – MACTEC Atlanta CME 55 Truck Hammer Serial No. 219505 Automatic Hammer WORK INSTRUCTION VGCOL 106**
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on January 17, 2007, during drilling of Boring B-3033, and on February 7, 2007, during drilling of Boring B-4028, at the referenced site. The testing was performed from approximately 3:35 to 4:00 PM under partly cloudy skies and a temperature of about 40 degrees Fahrenheit on January 17, and from approximately 8:20 to 8:30 AM under partly cloudy skies and a temperature of about 40 degrees Fahrenheit on February 7. The borings were drilled with personnel and equipment from the Atlanta office of MACTEC. The drilling equipment consisted of a CME 55 model truck-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of N3-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the borings below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Wayne Melvin. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. NW #146/1 and NW#146/2). An NW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.49 square inches and an outside diameter of approximately 2.625 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 2.625 and 2.25 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

13 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 235 foot-pounds to 282 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 67% to 80% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 245.4 foot-pounds, with a weighted average ETR of 70.1%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 106 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 13 PDIPLOT Output – 7 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 and 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
219505 (CME 55 Truck)	MACTEC Atlanta	Wayne Melvin	B-3033	N3	1/17/2007	18.5 - 20.0	5 - 5 - 7	16	282	80.6%
						23.5 - 25.0	5 - 8 - 6	20	259	74.0%
			B-4028		2/7/2007	123.5 - 125.0	20 - 23 - 37	82	235	67.1%
							Weighted Average for Rig:		**245.4**	**70.1%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By:	Date: 6-27-07	Checked By:	Date: 7/3/07

Work Instructions – SPT Energy MACTEC CME-55 (Melvin)
(Hammer #219505)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 12/20/06

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 12/20/06 To: 12/20/07

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 12/20/06

No. of Pages: 1 DCN: VGCOL 106

MACTEC

2801 YORKMONT ROAD, SUITE 100 D CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME
LOCATION:	Waynesboro, Georgia	MODEL:	55 TRUCK
PROJECT NO.:	6141-06-0286	SERIAL NO.:	219505
DATE:	~~1-17-07~~ 1-17-07 ; 2-7-07	HAMMER TYPE:	AUTOMATIC
WEATHER:	PARTLY CLOUDY ; 40°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	N3
DRILLING COMPANY:	MACTEC ATLANTA	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-3033 (1-17-07)	B-4028 (2-7-07)	
DEPTH DRILLED:	150' PLANNED	150' PLANNED	
TIME DRIVEN:	4:00 PM	9:10 AM	
RIG OPERATOR:	WAYNE MELVIN	WAYNE MELVIN	
HAMMER OPERATOR:	N.R.	N.R.	
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.49 in²	1.49 in²	
ACCEL. SERIAL NOS.:	P5094 / P5953	P5094 / P5953	
STRAIN SERIAL NOS.:	146 NW 1/2	146 NW 1/2	

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
18.5/20'	5-5-7			123.5/125'	20-23-37						
23.5/25'	5-8-6										

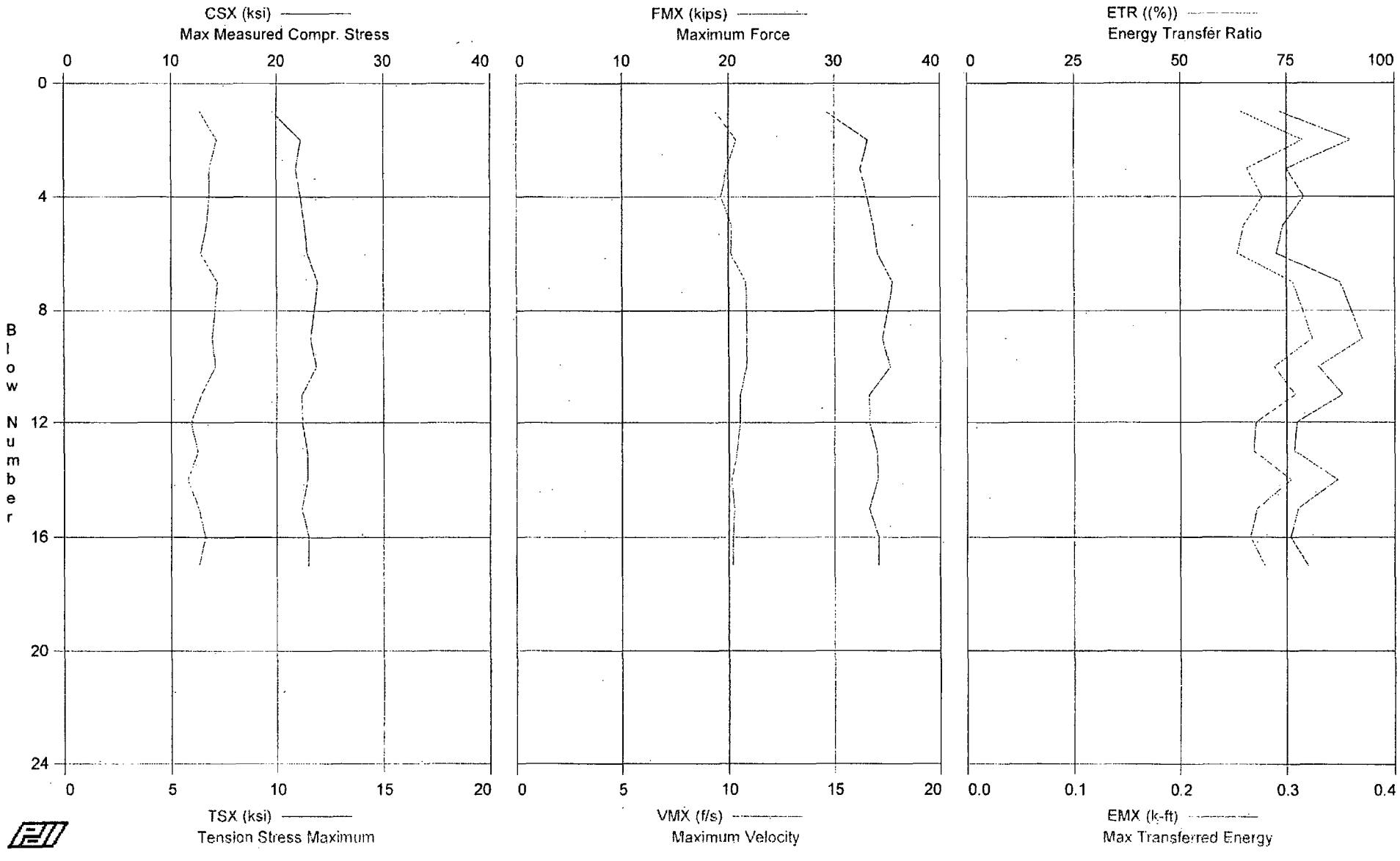
REMARKS:

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 10-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-3033; 18.5' - 20' Sample



Plant Vogtle COL Project - Boring B-3033; 18.5' - 20' Sample
OP: SEK

Rig Serial No. 219505 (MACTEC Atlanta CME 55 Truck)
Test date: 17-Jan-2007

AR: 1.49 in^2
LE: 24.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	19.61	6.36	29	9.4	1.94	0.0	0.228	73.4	0.257
2	0.00	22.29	7.17	33	10.4	2.32	55.9	0.267	89.9	0.315
3	0.00	21.82	6.83	33	9.9	2.14	55.3	0.255	75.1	0.263
4	0.00	22.21	6.79	33	9.6	1.74	53.7	0.256	79.0	0.277
5	0.00	22.62	6.69	34	10.2	2.29	54.7	0.268	74.2	0.260
6	0.00	22.90	6.41	34	10.1	2.38	54.3	0.258	72.7	0.254
7	0.00	23.86	7.20	36	10.8	2.35	53.9	0.281	87.4	0.306
9	0.00	23.20	6.95	35	10.9	2.32	53.6	0.271	92.5	0.324
10	0.00	23.68	7.08	35	10.8	2.79	54.3	0.276	82.4	0.288
11	0.00	22.35	6.42	33	10.5	2.10	53.3	0.257	87.9	0.308
12	0.00	22.38	5.93	33	10.5	2.69	54.1	0.254	77.4	0.271
13	0.00	22.86	6.26	34	10.4	2.50	53.9	0.256	76.8	0.269
14	0.00	22.87	5.78	34	10.1	2.34	53.6	0.255	86.7	0.304
15	0.00	22.36	6.29	33	10.3	2.45	54.2	0.257	77.6	0.272
16	0.00	22.96	6.60	34	10.2	2.26	53.7	0.258	76.0	0.266
17	0.00	22.95	6.31	34	10.2	2.03	54.3	0.263	80.1	0.280
	Average	22.56	6.57	34	10.3	2.29	54.2	0.260	80.6	0.282

Total number of blows analyzed: 16

Time Summary

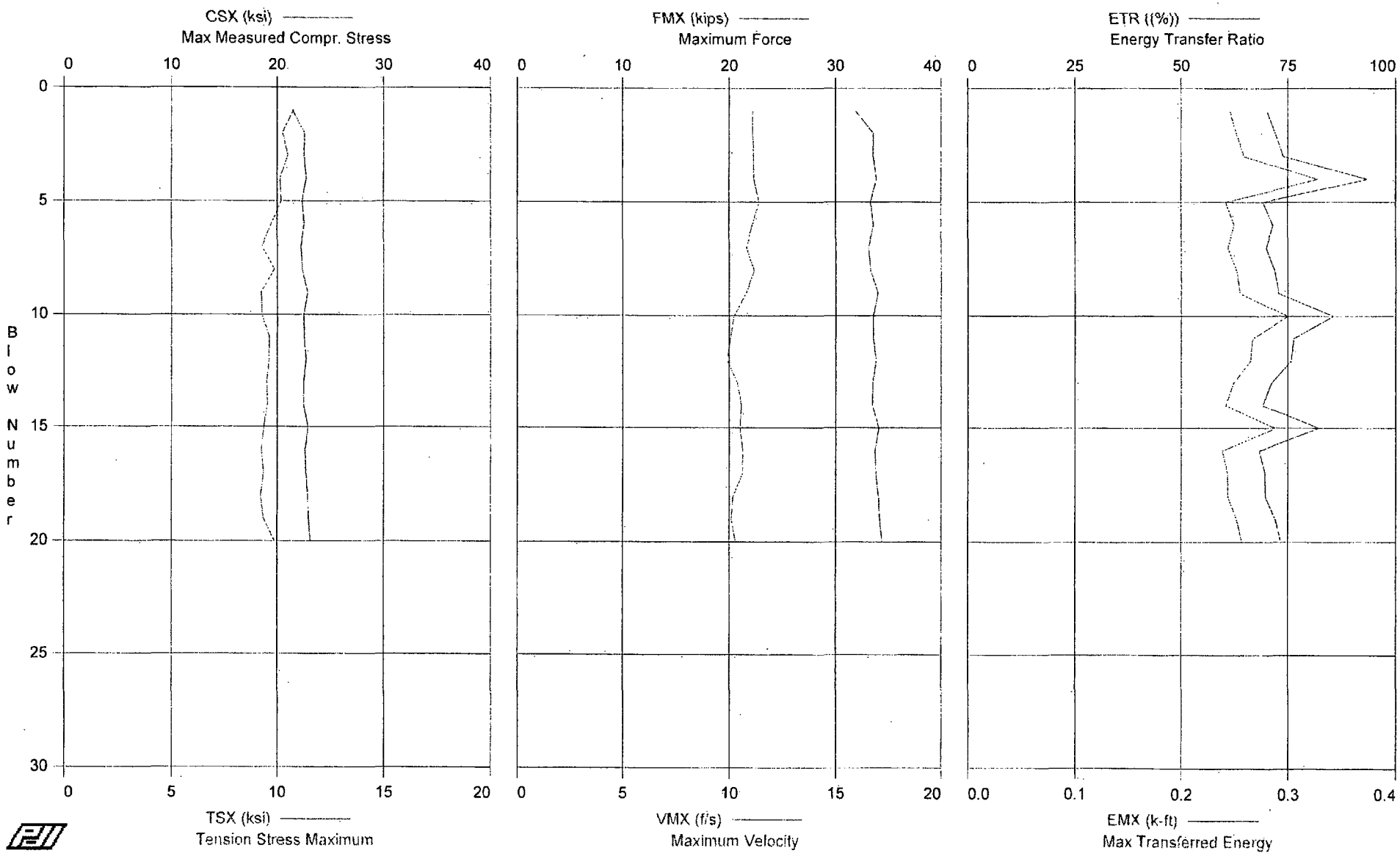
Drive 17 seconds 3:38:52 PM - 3:39:09 PM (1/17/2007) BN 1 - 17

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 10-May-2007

Test date: 17-Jan-2007

Plant Vogtle COL Project - Boring B-3033; 23.5' - 25' Sample



Plant Vogtle COL Project - Boring B-3033; 23.5' - 25' Sample
OP: SEK

Rig Serial No. 219505 (MACTEC Atlanta CME 55 Truck)
Test date: 17-Jan-2007

AR: 1.49 in^2
LE: 29.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	21.42	10.78	32	11.1	2.26	0.0	0.251	70.1	0.246
2	0.00	22.57	10.25	34	11.1	3.25	55.2	0.259	72.1	0.252
3	0.00	22.54	10.51	34	11.1	2.58	52.7	0.257	73.9	0.259
4	0.00	22.75	10.13	34	11.2	2.96	53.1	0.260	93.6	0.328
5	0.00	22.36	10.20	33	11.4	3.01	52.8	0.252	69.1	0.242
6	0.00	22.56	9.72	34	11.1	2.65	53.1	0.261	71.5	0.250
7	0.00	22.23	9.27	33	10.8	2.51	53.1	0.249	69.8	0.244
8	0.00	22.36	9.86	33	11.2	2.88	52.8	0.261	71.9	0.252
9	0.00	22.85	9.24	34	10.8	2.46	53.2	0.263	72.8	0.255
10	0.00	22.53	9.28	34	10.2	2.28	52.0	0.256	85.6	0.300
11	0.00	22.55	9.63	34	10.0	2.09	53.0	0.255	76.4	0.267
12	0.00	22.71	9.62	34	9.9	1.53	52.8	0.260	75.8	0.265
13	0.00	22.50	9.51	34	10.4	2.16	52.7	0.255	71.0	0.249
14	0.00	22.48	9.54	34	10.6	2.11	52.7	0.253	69.1	0.242
15	0.00	22.90	9.36	34	10.5	2.05	52.5	0.263	82.3	0.288
16	0.00	22.64	9.25	34	10.6	2.43	52.9	0.251	68.3	0.239
17	0.00	22.71	9.36	34	10.6	2.27	52.3	0.254	69.6	0.244
18	0.00	22.86	9.21	34	10.2	2.24	53.1	0.252	69.7	0.244
19	0.00	22.96	9.35	34	10.1	2.20	52.5	0.259	72.0	0.252
20	0.00	23.12	9.86	34	10.3	2.17	52.8	0.266	73.4	0.257
	Average	22.58	9.70	34	10.7	2.40	52.9	0.257	73.9	0.259

Total number of blows analyzed: 20

Time Summary

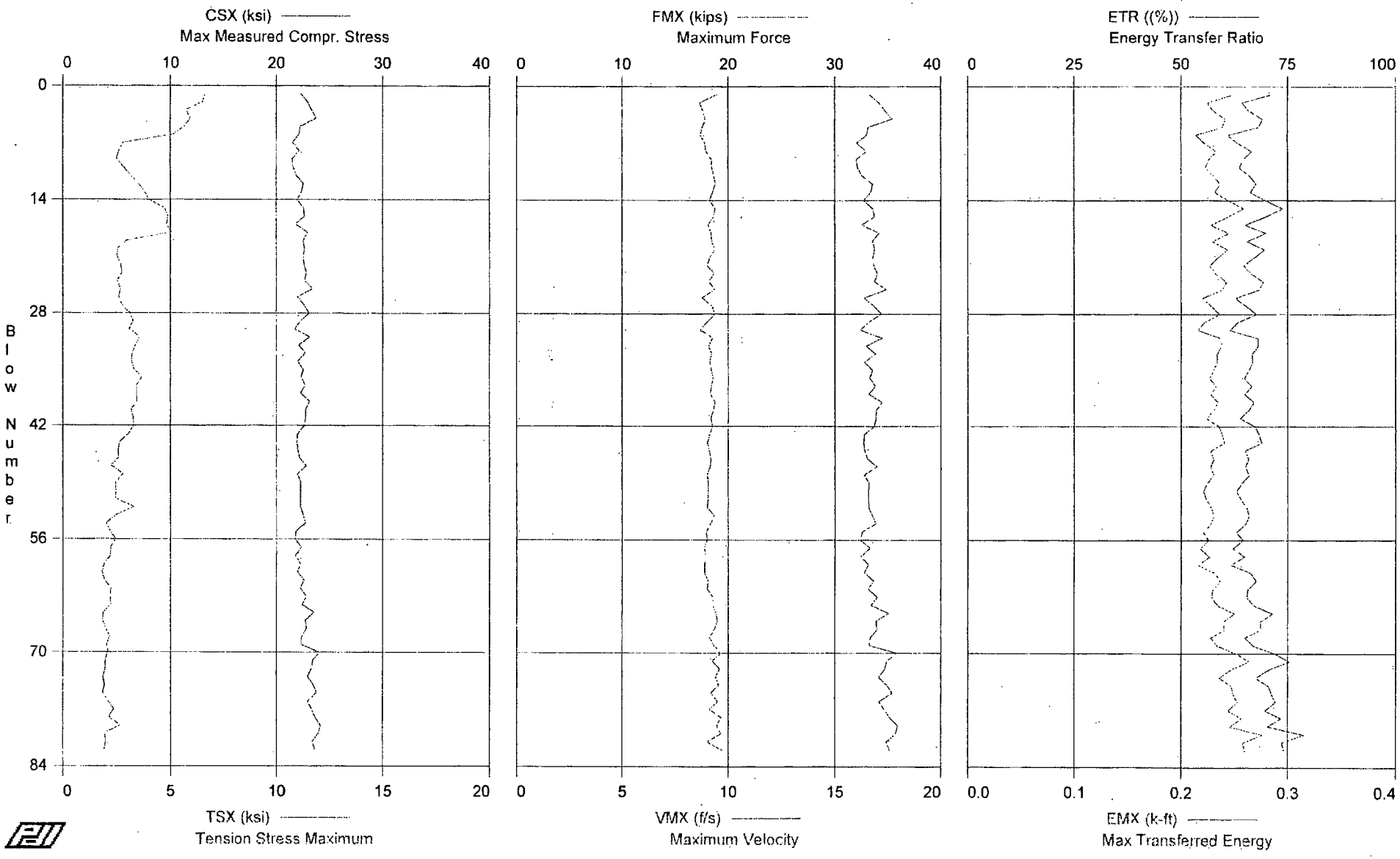
Drive 21 seconds 3:55:42 PM - 3:56:03 PM (1/17/2007) BN 1 - 20

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 15-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-4028; 123.5' - 125' Sample



MACTEC Engineering and Consulting, Inc.
Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 15-May-2007

Plant Vogtle COL Project - Boring B-4028; 123.5' - 125' Sample

Rig Serial No. 219505 (MACTEC Atlanta CME 55 Truck)

OP: SEK

Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 129.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
1	0.00	22.31	6.64	33	9.5	1.03	0.0	0.251	71.0	0.248
2	0.00	22.93	6.49	34	8.7	0.92	52.3	0.261	64.4	0.225
3	0.00	23.33	5.73	35	8.8	1.32	51.0	0.258	66.1	0.231
4	0.00	23.77	5.94	35	8.9	1.15	51.3	0.270	69.2	0.242
5	0.00	22.26	5.67	33	8.8	1.09	51.0	0.251	68.2	0.239
6	0.00	22.14	5.15	33	8.7	1.11	25.6	0.239	61.1	0.214
7	0.00	21.52	2.78	32	8.9	0.63	51.5	0.242	63.4	0.222
8	0.00	22.13	2.58	33	9.0	0.75	51.3	0.251	66.6	0.233
9	0.00	21.48	2.47	32	9.2	0.34	51.4	0.238	64.5	0.226
10	0.00	21.57	2.79	32	9.2	0.67	51.2	0.235	63.8	0.223
11	0.00	21.84	3.11	33	9.3	0.27	51.3	0.246	66.1	0.231
12	0.00	22.51	3.49	34	9.4	0.37	51.4	0.250	67.7	0.237
13	0.00	22.40	3.78	33	9.3	0.03	51.3	0.247	66.3	0.232
14	0.00	21.93	3.99	33	9.1	1.07	50.8	0.249	69.9	0.245
15	0.00	22.53	4.72	34	9.4	1.28	51.1	0.257	73.9	0.259
16	0.00	22.62	4.89	34	9.3	1.24	51.3	0.254	69.8	0.244
17	0.00	21.81	4.82	33	9.1	0.98	51.2	0.240	65.1	0.228
18	0.00	22.94	5.04	34	9.2	1.27	50.5	0.252	70.0	0.245
19	0.00	22.49	2.96	34	9.2	1.02	51.3	0.243	65.6	0.230
20	0.00	22.66	2.52	34	9.4	0.51	50.8	0.258	69.6	0.244
21	0.00	22.52	2.51	34	9.2	0.68	51.1	0.253	67.2	0.235
22	0.00	22.58	2.67	34	9.0	1.07	51.0	0.240	64.8	0.227
23	0.00	22.83	2.72	34	9.3	0.81	51.4	0.251	66.6	0.233
24	0.00	22.64	2.51	34	9.1	0.62	50.6	0.260	69.4	0.243
25	0.00	23.40	2.66	35	9.4	1.05	51.2	0.254	68.4	0.239
26	0.00	21.98	2.58	33	8.8	1.00	50.6	0.231	62.8	0.220
27	0.00	22.61	2.72	34	9.2	1.17	50.8	0.246	65.5	0.229
28	0.00	23.09	3.09	34	9.4	0.28	51.1	0.253	67.8	0.237
29	0.00	22.24	3.24	33	9.0	0.96	50.1	0.239	63.4	0.222
30	0.00	21.73	3.05	32	8.7	0.73	51.0	0.230	61.6	0.216
31	0.00	23.14	3.55	34	9.3	1.18	50.4	0.252	68.1	0.238
32	0.00	22.10	3.36	33	9.1	0.85	51.2	0.247	68.1	0.238
33	0.00	22.71	3.20	34	9.2	0.54	50.3	0.251	66.7	0.234
34	0.00	21.99	3.18	33	9.1	0.93	50.7	0.249	66.9	0.234
35	0.00	22.51	3.28	34	9.2	1.08	50.5	0.245	66.0	0.231
36	0.00	22.34	3.66	33	9.3	0.67	50.3	0.243	65.0	0.227
37	0.00	22.69	3.42	34	9.2	0.66	50.5	0.253	66.6	0.233
38	0.00	22.28	3.40	33	9.2	0.82	50.4	0.243	65.1	0.228
39	0.00	23.11	3.42	34	9.4	1.03	50.7	0.251	67.2	0.235
40	0.00	22.74	3.15	34	9.3	0.85	50.0	0.245	65.9	0.231
41	0.00	22.73	3.25	34	9.2	0.58	50.8	0.239	63.9	0.224
42	0.00	22.62	3.27	34	9.3	0.59	50.3	0.254	67.4	0.236
43	0.00	21.99	3.04	33	9.1	1.03	50.6	0.251	68.3	0.239
44	0.00	21.93	2.63	33	9.0	1.09	50.3	0.253	69.0	0.241
45	0.00	22.00	2.54	33	9.1	0.20	50.5	0.245	65.1	0.228
46	0.00	22.18	2.56	33	9.2	0.11	50.2	0.254	65.9	0.231
47	0.00	22.79	2.23	34	9.2	0.48	50.1	0.248	65.2	0.228
48	0.00	21.97	2.78	33	9.0	0.74	50.5	0.248	66.1	0.231
49	0.00	22.28	2.44	33	9.1	0.50	50.0	0.244	64.4	0.225
50	0.00	22.26	2.44	33	9.1	0.90	50.4	0.239	63.1	0.221
51	0.00	22.25	2.43	33	9.0	0.84	50.4	0.241	64.1	0.224
52	0.00	22.26	3.27	33	9.0	0.56	49.9	0.243	65.5	0.229
53	0.00	22.50	2.49	34	9.3	0.95	50.5	0.252	66.0	0.231
54	0.00	22.73	2.00	34	9.2	0.24	49.9	0.245	65.2	0.228
55	0.00	21.84	2.16	33	9.0	0.78	50.0	0.238	63.0	0.221
56	0.00	21.75	2.44	32	9.0	0.51	50.0	0.244	64.6	0.226
57	0.00	22.33	2.21	33	8.9	0.39	50.2	0.238	62.2	0.218
58	0.00	21.79	2.19	32	9.0	0.59	50.0	0.249	65.0	0.227
59	0.00	22.23	1.91	33	8.9	0.38	50.4	0.237	61.8	0.216
60	0.00	21.99	1.81	33	8.9	0.79	49.6	0.249	66.4	0.232
61	0.00	22.58	1.93	34	9.0	0.63	50.3	0.252	67.7	0.237
62	0.00	22.24	2.22	33	9.0	0.45	50.2	0.253	65.8	0.230
63	0.00	22.81	2.17	34	9.3	0.47	50.0	0.252	65.5	0.229
64	0.00	22.42	2.22	33	9.3	0.58	50.2	0.258	67.1	0.235
65	0.00	23.53	1.87	35	9.4	0.64	50.0	0.264	71.5	0.250

Plant Vogtle COL Project - Boring B-4028; 123.5' - 125' Sample
OP: SEK

Rig Serial No. 219505 (MACTEC Atlanta CME 55 Truck)
Test date: 7-Feb-2007

BL#	depth	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ft	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
66	0.00	22.72	1.83	34	9.5	0.47	50.3	0.258	68.7	0.240
67	0.00	22.81	1.98	34	9.4	0.88	50.1	0.252	68.8	0.241
68	0.00	22.37	2.16	33	9.1	0.47	50.0	0.243	65.0	0.228
69	0.00	22.27	2.03	33	9.3	0.58	50.5	0.253	67.0	0.234
70	0.00	24.07	2.08	36	9.7	0.53	50.2	0.273	72.0	0.252
71	0.00	23.43	1.95	35	9.3	0.97	50.1	0.270	75.5	0.264
72	0.00	23.29	1.95	35	9.6	0.61	49.7	0.269	70.7	0.247
73	0.00	22.90	1.85	34	9.4	0.69	50.2	0.256	67.5	0.236
74	0.00	23.45	1.90	35	9.6	0.42	50.3	0.265	70.5	0.247
75	0.00	23.76	1.85	35	9.2	0.77	49.9	0.266	71.2	0.249
76	0.00	22.93	2.08	34	9.5	0.73	50.3	0.271	72.2	0.253
77	0.00	23.28	2.34	35	9.1	0.78	49.5	0.255	69.7	0.244
78	0.00	23.61	2.12	35	9.7	0.25	50.3	0.285	73.5	0.257
79	0.00	24.13	2.64	36	9.4	0.76	49.6	0.265	70.3	0.246
80	0.00	23.98	1.92	36	9.7	1.20	50.0	0.279	78.8	0.276
81	0.00	23.39	1.97	35	9.0	0.94	49.4	0.260	73.6	0.258
82	0.00	23.61	1.88	35	9.7	0.89	50.3	0.287	74.2	0.260
	Average	22.59	2.95	34	9.2	0.74	50.2	0.252	67.2	0.235

Total number of blows analyzed: 82

Time Summary

Drive 1 minute 37 seconds 8:25:32 AM - 8:27:09 AM (2/7/2007) BN 1 - 82

June 27, 2007

Memorandum to File DCN VGCOL 107
From: Steve Kiser
Reviewed By: Pieter Depree

Subject: **Report of SPT Energy – MACTEC Atlanta CME 550 ATV Hammer Serial No. 337153 Automatic Hammer WORK INSTRUCTION VGCOL 107**
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on February 7, 2007, during drilling of Boring B-1193 at the referenced site. The testing was performed from approximately 10:20 to 11:10 AM under sunny skies and a temperature of about 55 degrees Fahrenheit. The boring was drilled with personnel and equipment from the Atlanta office of MACTEC. The drilling equipment consisted of a CME 550 model ATV-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of AW-J-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the boring below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Robert Banks. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. AW #144/1 and AW#144/2). An AW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.19 square inches and an outside diameter of approximately 1.75 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 1.75 and 1.375 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

15 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 266 foot-pounds to 307 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 76% to 88% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 286.9 foot-pounds, with a weighted average ETR of 82.0%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 107 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 15 PDIPLOT Output – 9 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 and 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
337153 (CME 550 ATV)	MACTEC Atlanta	Robert Banks	B-1193	AW-J	2/7/2007	63.5 - 65.0	5 - 20 - 15	36	307	87.7%
						68.5 - 70.0	14 - 32 - 15	61	266	76.0%
						73.5 - 75.0	7 - 10 - 13	31	297	84.9%
						78.5 - 80.0	8 - 9 - 11	29	295	84.3%
							Weighted Average for Rig:		**286.9**	**82.0%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By:	Date: 6-27-07	Checked By: WAL	Date: 7/31/07

Work Instructions – SPT Energy MACTEC CME-550 (Banks)
(Hammer #337153)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 12/20/06

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 12/20/06 To: 12/20/07

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 12/20/06

No. of Pages: 1 DCN: VGCOL 107

MACTEC

2801 YORKMONT ROAD, SUITE 100 D CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME
LOCATION:	Waynesboro, Georgia	MODEL:	550 ATV
PROJECT NO.:	6141-06-0286	SERIAL NO.:	337153
DATE:	2-7-07	HAMMER TYPE:	AUTOMATIC
WEATHER:	SUNNY - NICE 55°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	AW-J
DRILLING COMPANY:	MACTEC ATLANTA	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-1193		
DEPTH DRILLED:	150' PLANNED		
TIME DRIVEN:	11:20 AM		
RIG OPERATOR:	ROBERT BANKS		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.19 in²		
ACCEL. SERIAL NOS.:	P5953 / P5094		
STRAIN SERIAL NOS.:	144 AW 1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
63.5/65	5-20-15										
68.5/70	14-32-15										
73.5/75	7-10-13										
78.5/80	8-9-11										

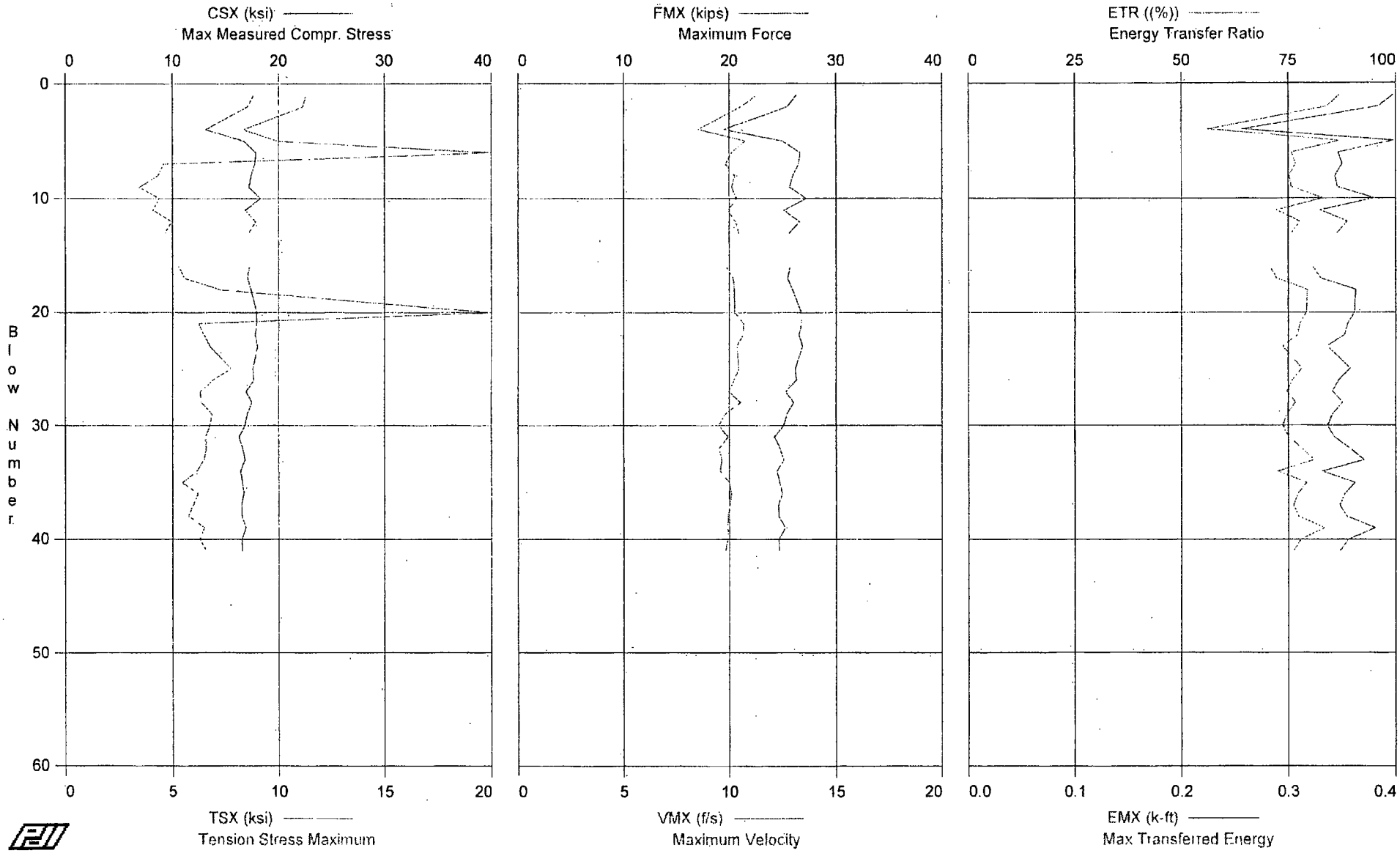
REMARKS:

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 10-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-1193; 63.5' - 65' Sample



Plant Vogtle COL Project - Boring B-1193; 63.5' - 65' Sample
OP: SEK

Rig Serial No. 337153 (MACTEC Atlanta CME 550 ATV)
Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 69.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	17.64	11.29	26	11.3	3.06	0.0	0.286	99.5	0.348
2	0.00	17.06	11.16	25	10.5	7.53	57.0	0.279	96.0	0.336
4	0.00	13.10	8.35	20	8.5	1.81	55.5	0.168	64.2	0.225
5	0.00	16.77	9.96	25	10.7	0.43	53.0	0.282	99.5	0.348
6	0.00	17.87	27.03	27	10.1	-6.71	56.0	0.267	86.7	0.303
7	0.00	17.76	4.58	26	9.8	1.25	54.4	0.257	87.6	0.307
8	0.00	17.41	4.31	26	10.3	0.54	55.4	0.254	86.0	0.301
9	0.00	17.21	3.45	26	10.1	0.86	54.7	0.238	86.5	0.303
10	0.00	18.26	4.37	27	10.4	1.13	54.9	0.265	95.2	0.333
11	0.00	16.86	4.09	25	9.9	1.59	55.5	0.225	82.4	0.289
12	0.00	17.83	4.97	27	10.3	0.98	54.8	0.256	88.8	0.311
13	0.00	17.18	4.63	26	10.5	0.88	55.0	0.247	86.5	0.303
16	0.00	17.24	5.32	26	9.9	0.20	54.7	0.237	80.8	0.283
17	0.00	17.08	5.56	25	10.2	0.20	54.9	0.241	82.5	0.289
18	0.00	17.40	7.25	26	10.2	1.64	55.5	0.255	90.8	0.318
20	0.00	17.94	27.62	27	10.3	-20.07	55.7	0.265	90.5	0.317
21	0.00	17.93	6.22	27	10.7	0.40	54.5	0.261	88.9	0.311
22	0.00	17.79	6.48	26	10.6	0.14	54.9	0.267	88.2	0.309
23	0.00	18.01	6.74	27	10.4	-0.42	54.9	0.269	84.2	0.295
25	0.00	17.56	7.74	26	10.4	1.28	54.4	0.253	89.4	0.313
26	0.00	17.64	6.86	26	10.2	0.61	54.6	0.255	86.8	0.304
27	0.00	16.95	6.30	25	10.0	0.89	53.9	0.235	85.3	0.299
28	0.00	17.48	6.35	26	10.5	0.97	55.0	0.248	87.8	0.307
29	0.00	17.03	6.86	25	9.8	1.45	55.9	0.240	85.4	0.299
30	0.00	16.84	6.73	25	9.5	1.15	54.4	0.241	84.2	0.295
31	0.00	16.24	6.54	24	9.9	0.26	53.5	0.255	85.7	0.300
32	0.00	16.60	6.57	25	9.5	0.90	54.9	0.249	89.4	0.313
33	0.00	16.83	6.48	25	9.6	1.19	55.4	0.250	92.7	0.324
34	0.00	16.41	6.15	24	9.6	0.73	54.2	0.239	82.9	0.290
35	0.00	16.59	5.48	25	10.0	0.93	55.3	0.246	90.5	0.317
36	0.00	16.73	6.20	25	10.1	0.82	54.5	0.251	88.2	0.309
37	0.00	16.48	5.97	25	10.0	1.16	54.7	0.241	87.0	0.305
38	0.00	16.53	5.75	25	9.9	1.51	54.4	0.239	88.7	0.310
39	0.00	16.92	6.48	25	9.9	1.34	55.5	0.254	95.3	0.334
40	0.00	16.52	6.28	25	9.9	1.33	54.6	0.242	89.0	0.312
41	0.00	16.55	6.58	25	9.8	1.24	53.6	0.247	87.1	0.305
	Average	17.06	7.57	25	10.1	0.37	54.9	0.250	87.8	0.307

Total number of blows analyzed: 36

Time Summary

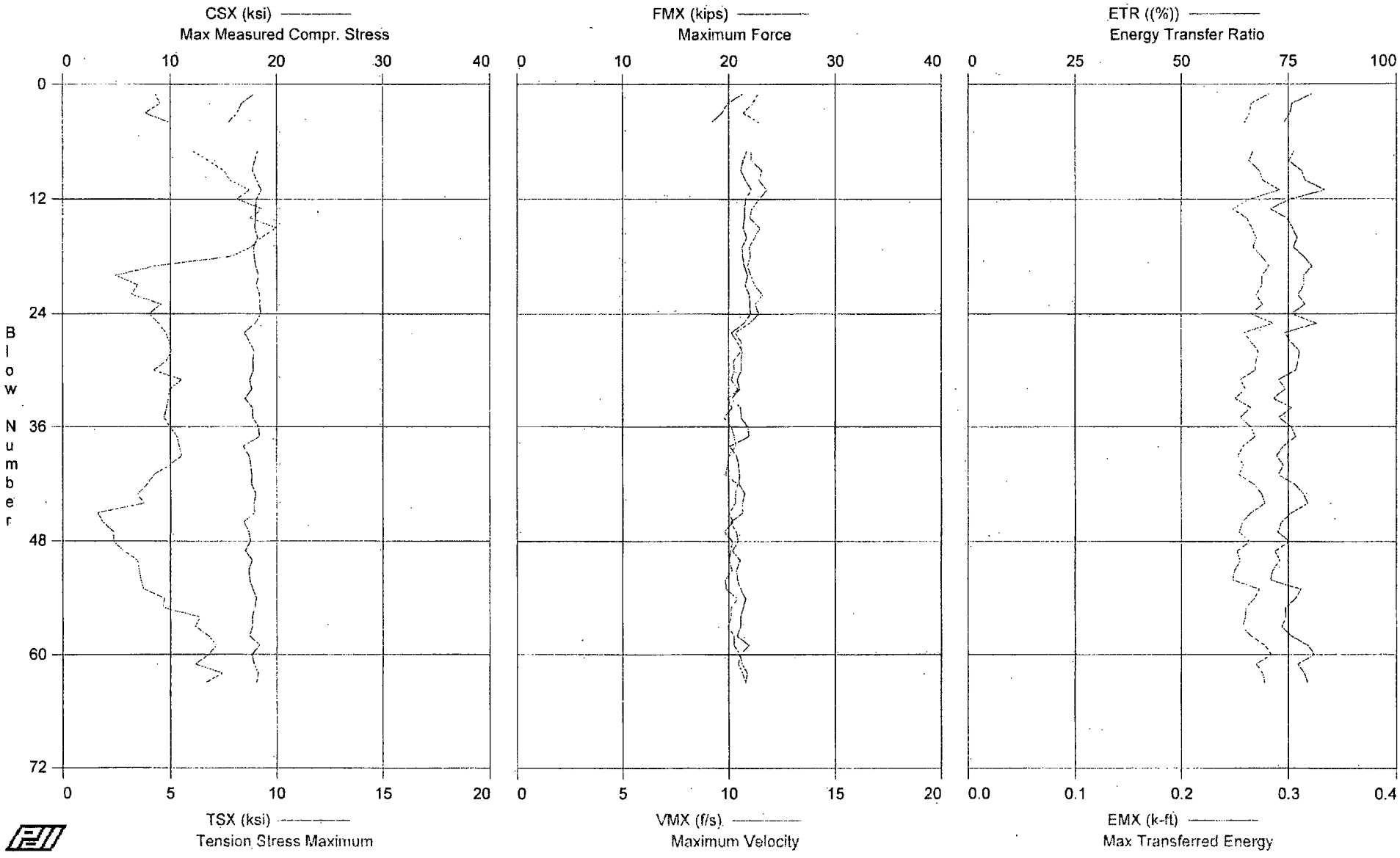
Drive 44 seconds 10:24:11 AM - 10:24:55 AM (2/7/2007) BN 1 - 41

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 10-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-1193; 68.5' - 70' Sample



Plant Vogtle COL Project - Boring B-1193; 68.5' - 70' Sample
OP: SEK

Rig Serial No. 337153 (MACTEC Atlanta CME 550 ATV)
Test date: 7-Feb-2007

AR: 1.19 in^2
LE: 74.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL# depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
16,928,926.00	17.88	4.31	21	11.4	1.06	0.0	0.208	80.5	0.282
26,928,926.00	16.72	4.53	20	11.1	1.17	54.7	0.194	75.8	0.265
36,928,926.00	16.29	3.81	19	10.7	1.06	55.2	0.192	75.4	0.264
46,928,926.00	15.44	5.00	18	11.4	0.87	53.6	0.193	74.0	0.259
76,928,926.00	18.21	6.05	22	11.0	1.56	54.0	0.207	76.3	0.267
86,928,926.00	17.93	6.80	21	11.1	1.17	54.4	0.203	75.1	0.263
96,928,926.00	17.74	7.51	21	11.6	1.37	54.6	0.207	78.1	0.273
106,928,926.00	18.13	7.81	22	11.4	0.87	53.4	0.215	78.9	0.276
116,928,926.00	18.57	8.73	22	11.8	1.29	53.7	0.223	83.5	0.292
126,928,926.00	18.11	8.13	22	11.4	0.76	54.4	0.213	75.4	0.264
136,928,926.00	18.03	9.31	21	11.1	0.82	54.1	0.204	70.8	0.248
146,928,926.00	18.03	8.75	21	11.0	0.72	54.0	0.214	74.6	0.261
156,928,926.00	17.93	10.00	21	11.4	0.44	54.4	0.214	76.0	0.266
166,928,926.00	18.21	9.28	22	11.2	1.89	53.9	0.214	77.0	0.270
176,928,926.00	17.85	8.80	21	10.9	1.46	53.4	0.212	76.2	0.267
186,928,926.00	17.90	7.88	21	11.0	0.77	54.0	0.211	78.6	0.275
196,928,926.00	18.02	4.31	21	10.9	1.31	53.8	0.213	80.5	0.282
206,928,926.00	18.30	2.44	22	11.0	0.60	54.3	0.216	78.6	0.275
216,928,926.00	18.09	3.47	22	11.2	0.93	54.1	0.216	78.6	0.275
226,928,926.00	18.42	3.19	22	11.6	0.67	52.8	0.205	77.2	0.270
236,928,926.00	18.43	4.58	22	11.2	0.85	53.2	0.207	78.9	0.276
246,928,926.00	18.51	4.02	22	11.4	0.91	54.3	0.201	75.7	0.265
256,928,926.00	18.00	4.46	21	11.0	0.44	54.2	0.216	81.7	0.286
266,928,926.00	17.00	4.78	20	10.3	0.69	54.0	0.195	74.1	0.259
276,928,926.00	17.48	4.97	21	10.6	0.91	54.1	0.201	75.6	0.265
286,928,926.00	17.88	5.05	21	10.6	0.38	54.0	0.216	77.6	0.272
296,928,926.00	17.77	4.82	21	10.2	1.15	54.3	0.209	77.3	0.270
306,928,926.00	17.80	4.23	21	10.3	0.36	54.1	0.214	76.7	0.269
316,928,926.00	17.48	5.53	21	10.1	0.22	54.0	0.205	72.8	0.255
326,928,926.00	17.68	4.96	21	10.4	0.21	53.8	0.207	74.3	0.260
336,928,926.00	17.05	4.93	20	9.9	0.39	53.9	0.196	71.5	0.250
346,928,926.00	17.75	4.83	21	10.1	0.19	54.0	0.209	75.9	0.265
356,928,926.00	17.76	4.72	21	9.8	0.86	53.7	0.203	72.8	0.255
366,928,926.00	18.33	4.98	22	10.1	0.47	54.5	0.211	75.7	0.265
376,928,926.00	18.41	5.32	22	10.3	0.48	53.6	0.211	76.8	0.269
386,928,926.00	16.88	5.42	20	10.3	1.28	54.1	0.199	73.8	0.258
396,928,926.00	17.43	5.54	21	10.0	0.37	53.8	0.191	72.3	0.253
406,928,926.00	17.59	4.98	21	9.9	0.81	54.2	0.200	73.8	0.258
416,928,926.00	17.68	4.24	21	9.9	0.77	54.2	0.199	72.7	0.254
426,928,926.00	17.65	3.93	21	10.4	0.63	54.0	0.202	76.5	0.268
436,928,926.00	18.07	3.46	21	10.3	1.46	54.3	0.205	78.5	0.275
446,928,926.00	17.87	3.75	21	10.3	1.10	53.6	0.206	79.5	0.278
456,928,926.00	17.91	1.62	21	10.0	0.96	53.6	0.202	75.7	0.265
466,928,926.00	16.94	1.84	20	10.2	0.84	54.1	0.190	73.3	0.257
476,928,926.00	17.38	2.33	21	9.8	1.22	53.6	0.194	72.6	0.254
486,928,926.00	17.55	2.34	21	10.2	1.20	54.0	0.202	75.3	0.264
496,928,926.00	17.07	2.78	20	10.1	1.22	53.8	0.195	71.9	0.252
506,928,926.00	17.73	3.44	21	10.0	1.11	53.7	0.196	73.0	0.255
516,928,926.00	17.41	3.55	21	10.2	1.05	54.2	0.192	71.4	0.250
526,928,926.00	17.49	3.61	21	9.8	1.17	53.8	0.190	70.8	0.248
536,928,926.00	17.74	3.75	21	9.9	1.56	54.1	0.196	78.0	0.273
546,928,926.00	18.14	4.73	22	10.4	1.93	53.5	0.208	76.6	0.268
556,928,926.00	17.95	4.66	21	10.1	0.83	54.2	0.202	74.4	0.260
566,928,926.00	17.74	6.37	21	10.1	1.21	53.6	0.201	74.4	0.260
576,928,926.00	17.72	6.17	21	10.0	1.29	54.2	0.200	73.5	0.257
586,928,926.00	17.46	6.78	21	10.3	1.65	53.5	0.203	75.7	0.265
596,928,926.00	18.41	7.14	22	10.2	1.17	53.9	0.215	79.5	0.278
606,928,926.00	17.68	6.79	21	10.5	1.13	53.9	0.206	81.0	0.284
616,928,926.00	17.87	6.16	21	10.4	1.34	54.0	0.205	77.2	0.270
626,928,926.00	18.25	7.45	22	10.7	0.92	54.0	0.211	78.7	0.276
636,928,926.00	18.13	6.63	22	10.8	1.06	53.8	0.206	79.5	0.278
Average	17.75	5.27	21	10.6	0.96	54.0	0.205	76.0	0.266

Total number of blows analyzed: 61

Plant Vogtle COL Project - Boring B-1193; 68.5' - 70' Sample
OP: SEK

Rig Serial No. 337153 (MACTEC Atlanta CME 550 ATV)
Test date: 7-Feb-2007

Time Summary

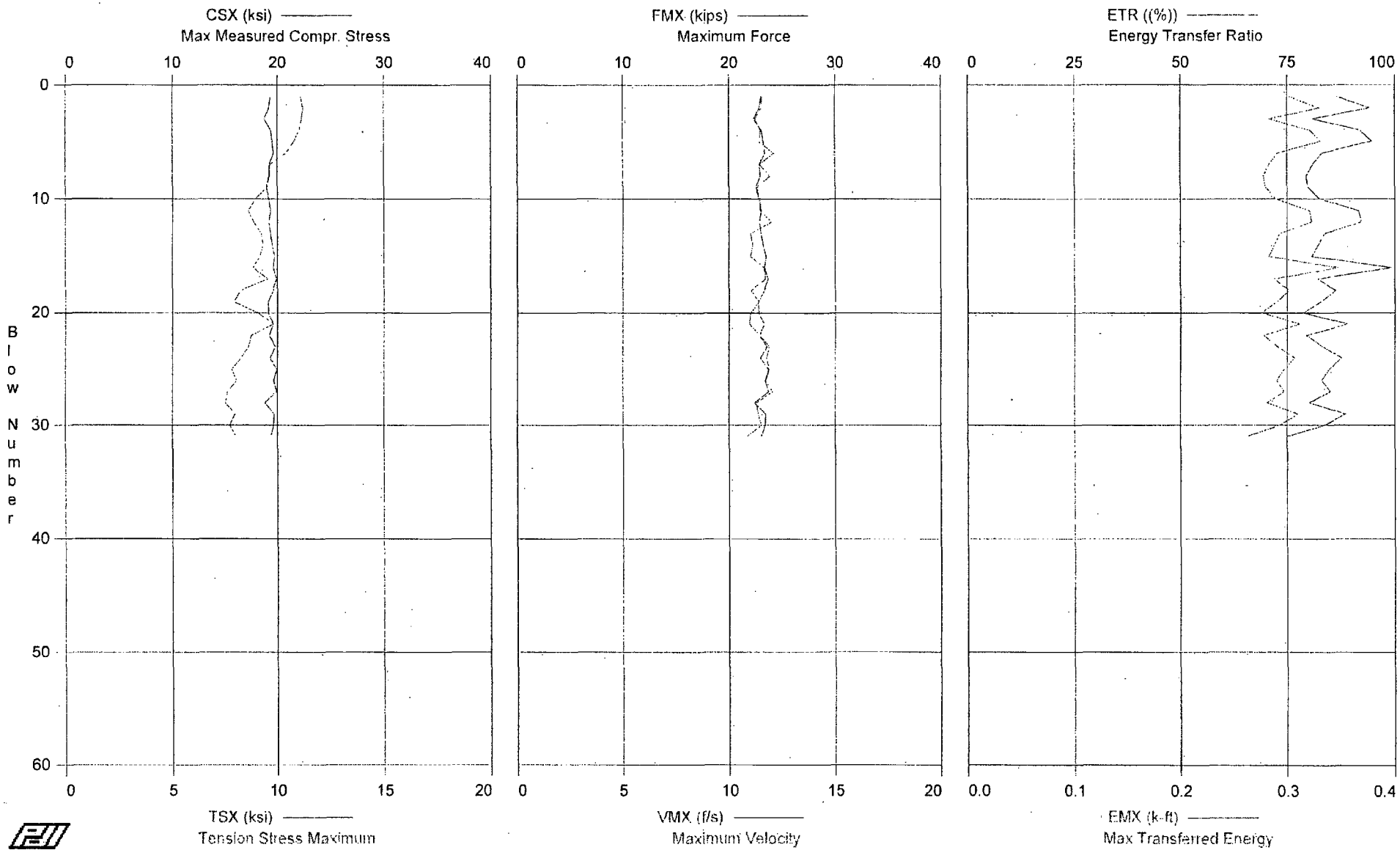
Drive	1 minute 9 seconds	10:39:50 AM - 10:40:59 AM (2/7/2007) BN 1 - 63

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 10-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-1193; 73.5' - 75' Sample



Plant Vogtle COL Project - Boring B-1193; 73.5' - 75' Sample
OP: SEK

Rig Serial No. 337153 (MACTEC Atlanta CME 550 ATV)
Test date: 7-Feb-2007

AR: 1.19 in^2
LE: 79.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

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TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	19.36	11.10	23	11.6	1.70	0.0	0.233	86.4	0.302
2	0.00	19.20	11.21	23	11.5	2.13	54.1	0.229	94.3	0.330
3	0.00	18.77	11.14	22	11.2	2.00	54.6	0.218	80.9	0.283
4	0.00	19.39	11.02	23	11.5	2.91	54.3	0.229	92.0	0.322
5	0.00	19.52	10.78	23	11.4	2.83	54.3	0.235	94.7	0.331
6	0.00	19.68	10.42	23	12.1	1.96	54.3	0.230	83.2	0.291
7	0.00	19.22	9.66	23	11.4	1.95	54.9	0.225	81.0	0.283
8	0.00	19.30	9.60	23	11.9	1.68	54.0	0.218	79.6	0.278
9	0.00	18.95	9.50	23	11.3	2.62	53.9	0.214	79.9	0.280
10	0.00	19.16	8.95	23	11.5	2.00	53.5	0.220	82.5	0.289
11	0.00	19.37	8.62	23	11.5	2.70	54.9	0.224	91.6	0.321
12	0.00	19.21	8.86	23	12.0	3.40	54.2	0.221	92.2	0.323
13	0.00	19.35	9.22	23	11.0	4.65	53.7	0.220	83.7	0.293
14	0.00	19.50	9.32	23	11.1	2.06	53.9	0.226	82.2	0.288
15	0.00	19.75	9.19	24	11.0	1.33	53.9	0.231	80.8	0.283
16	0.00	19.64	8.84	23	11.7	2.29	54.3	0.239	99.4	0.348
17	0.00	19.91	9.55	24	11.7	2.47	54.3	0.230	82.2	0.288
18	0.00	19.59	8.26	23	11.0	2.19	53.5	0.228	86.2	0.302
19	0.00	19.12	7.91	23	11.4	1.73	54.4	0.216	82.8	0.290
20	0.00	19.14	9.06	23	11.0	1.78	54.0	0.221	78.7	0.276
21	0.00	19.59	9.82	23	10.9	3.88	54.2	0.217	89.1	0.312
22	0.00	19.23	8.75	23	11.5	2.46	54.6	0.213	79.5	0.278
23	0.00	19.80	8.62	24	11.9	1.55	53.8	0.222	83.2	0.291
24	0.00	19.29	8.27	23	11.8	1.43	53.9	0.230	87.6	0.307
25	0.00	19.93	7.82	24	11.9	1.32	54.3	0.228	84.8	0.297
26	0.00	19.66	8.05	23	11.7	1.93	54.2	0.226	83.0	0.290
27	0.00	19.92	7.64	24	12.0	1.29	53.7	0.222	85.0	0.297
28	0.00	18.81	7.52	22	11.3	1.44	54.3	0.210	80.2	0.281
29	0.00	19.70	7.98	23	11.4	1.55	54.4	0.227	88.5	0.310
30	0.00	19.66	7.74	23	11.5	0.76	54.0	0.227	83.7	0.293
31	0.00	19.36	8.02	23	10.9	1.51	53.8	0.212	75.2	0.263
	Average	19.42	9.11	23	11.5	2.11	54.1	0.224	85.0	0.297

Total number of blows analyzed: 31

Time Summary

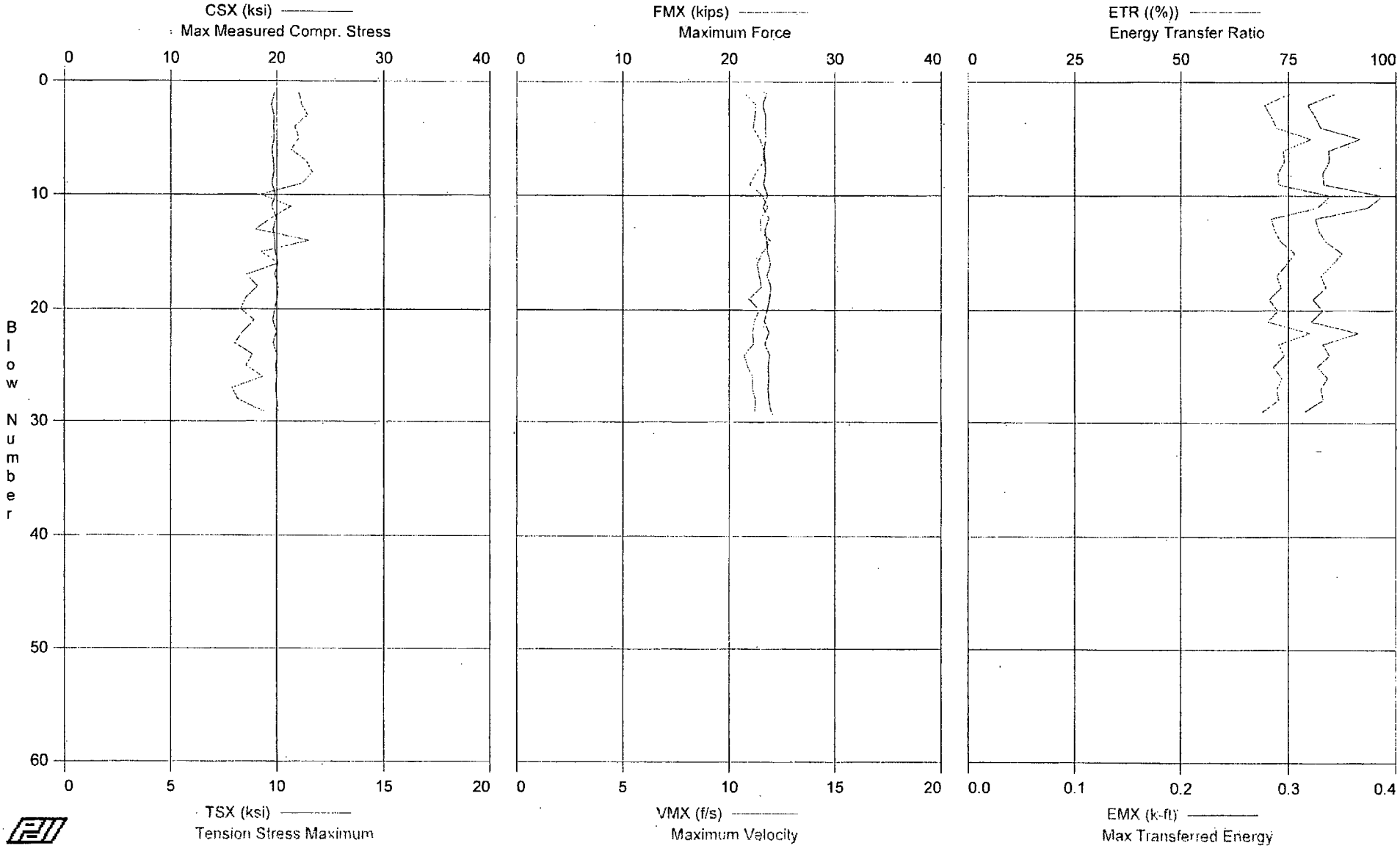
Drive 33 seconds 10:54:40 AM - 10:55:13 AM (2/7/2007) BN 1 - 31

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 10-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-1193; 78.5' - 80' Sample



Plant Vogtle COL Project - Boring B-1193; 78.5' - 80' Sample
OP: SEK

Rig Serial No. 337153 (MACTEC Atlanta CME 550 ATV)
Test date: 7-Feb-2007

AR: 1.19 in^2
LE: 84.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	19.80	11.05	24	10.7	1.99	0.0	0.234	86.0	0.301
2	0.00	19.50	11.15	23	11.3	1.77	55.4	0.225	79.5	0.278
3	0.00	19.72	11.44	23	11.2	4.48	53.7	0.226	81.2	0.284
4	0.00	19.70	10.84	23	11.2	2.93	54.2	0.228	82.5	0.289
5	0.00	19.75	11.04	23	11.5	3.02	53.4	0.228	91.7	0.321
6	0.00	19.57	10.68	23	11.6	1.95	54.3	0.222	84.4	0.295
7	0.00	19.69	11.37	23	11.6	2.75	54.6	0.225	84.4	0.296
8	0.00	19.71	11.67	23	11.3	1.82	54.1	0.228	83.0	0.290
9	0.00	19.56	11.17	23	11.0	2.86	53.6	0.225	83.2	0.291
10	0.00	19.89	9.25	24	11.6	2.86	53.6	0.231	96.9	0.339
11	0.00	19.51	10.68	23	11.8	2.44	54.8	0.236	93.5	0.327
12	0.00	19.97	9.79	24	11.5	0.56	54.2	0.229	81.3	0.284
13	0.00	19.64	8.99	23	11.5	2.07	53.9	0.219	82.0	0.287
14	0.00	19.81	11.51	24	12.0	4.37	53.9	0.224	83.7	0.293
15	0.00	19.88	9.24	24	11.6	2.11	54.3	0.225	87.5	0.306
16	0.00	20.11	10.09	24	11.3	2.81	53.8	0.230	85.2	0.298
17	0.00	19.83	8.58	24	11.4	1.12	54.2	0.220	82.6	0.289
18	0.00	20.13	9.10	24	11.5	0.38	53.9	0.227	83.8	0.293
19	0.00	20.04	8.55	24	10.9	1.89	54.0	0.224	80.7	0.282
20	0.00	19.85	8.32	24	11.4	1.19	53.7	0.221	83.0	0.290
21	0.00	19.61	8.95	23	11.2	1.49	54.5	0.220	80.3	0.281
22	0.00	20.00	8.42	24	11.1	1.81	54.2	0.234	91.3	0.320
23	0.00	19.65	8.04	23	11.2	2.28	54.0	0.220	83.1	0.291
24	0.00	20.04	8.87	24	10.7	1.70	53.7	0.229	84.6	0.296
25	0.00	19.92	8.57	24	10.9	0.82	54.2	0.221	81.7	0.286
26	0.00	19.98	9.34	24	11.1	1.84	53.7	0.231	84.1	0.294
27	0.00	19.92	7.93	24	11.1	1.67	54.2	0.223	82.6	0.289
28	0.00	19.98	8.17	24	11.3	0.92	53.7	0.234	83.1	0.291
29	0.00	20.18	9.30	24	11.2	0.53	54.6	0.227	78.8	0.276
	Average	19.82	9.73	24	11.3	2.01	54.1	0.226	84.3	0.295

Total number of blows analyzed: 29

Time Summary

Drive 31 seconds 11:08:23 AM - 11:08:54 AM (2/7/2007) BN 1 - 29

June 27, 2007

Memorandum to File DCN VGCOL 154
From: Steve Kiser SL
Reviewed By: Pieter Depree PDP

Subject: **Report of SPT Energy – Gregg Drilling Fraste Track Hammer Serial No. XO2958 Automatic Hammer WORK INSTRUCTION VGCOL 154**
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on February 7, 2007, during drilling of Boring B-3014 at the referenced site. The testing was performed from approximately 4:25 to 5:05 PM under sunny skies with breezy conditions and a temperature of about 60 degrees Fahrenheit. The boring was drilled with personnel and equipment from Gregg Drilling. The drilling equipment consisted of a Fraste model track-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of NW-J-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the boring below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Marshall Burnett. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and P5094) and strain gages (Serial Nos. NW #146/1 and NW#146/2). An NW-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.49 square inches and an outside diameter of approximately 2.625 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 2.625 and 2.25 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

12 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 273 foot-pounds to 278 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 78% to 79% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 276.0 foot-pounds, with a weighted average ETR of 78.9%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 154 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 12 PDIPLOT Output – 6 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 and 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
XO2958 (Fraste Track)	Gregg Drilling	Marshall Burnett	B-3014	NW-J	2/7/2007	13.5 - 15.0	13 - 15 - 18	43	273	78.0%
						18.5 - 20.0	16 - 16 - 16	45	278	79.4%
						23.5 - 25.0	15 - 12 - 10	38	277	79.1%
							Weighted Average for Rig:		**276.0**	**78.9%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By: [illegible]	Date: 6-27-07	Checked By: WNL	Date: 7/31/07

Work Instructions – SPT Energy Gregg Drilling FRASTE (Poole)
(Hammer #XO2958)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 1/17/07

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 1/17/07 To: 1/17/08

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 1/17/07

No. of Pages: 1 DCN: VGCOL 154

MACTEC

2801 YORKMONT ROAD, SUITE 100 D CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	FRASTE
LOCATION:	Waynesboro, Georgia	MODEL:	TRACK
PROJECT NO.:	6141-06-0286	SERIAL NO.:	X0 2158
DATE:	2-7-07	HAMMER TYPE:	AUTOMATIC
WEATHER:	SUNNY-BREEZY 60°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	NW-J
DRILLING COMPANY:	GREGG DRILLING	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-3014		
DEPTH DRILLED:	150' PLANNED		
TIME DRIVEN:	2:40 PM		
RIG OPERATOR:	MARSHALL BURNETT		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.49 in²		
ACCEL. SERIAL NOS.:	P5753 / P5094		
STRAIN SERIAL NOS.:	146 NW 1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
13.5/15'	13-15-13										
18.5/20'	16-16-16										
23.5/25'	15-12-10										

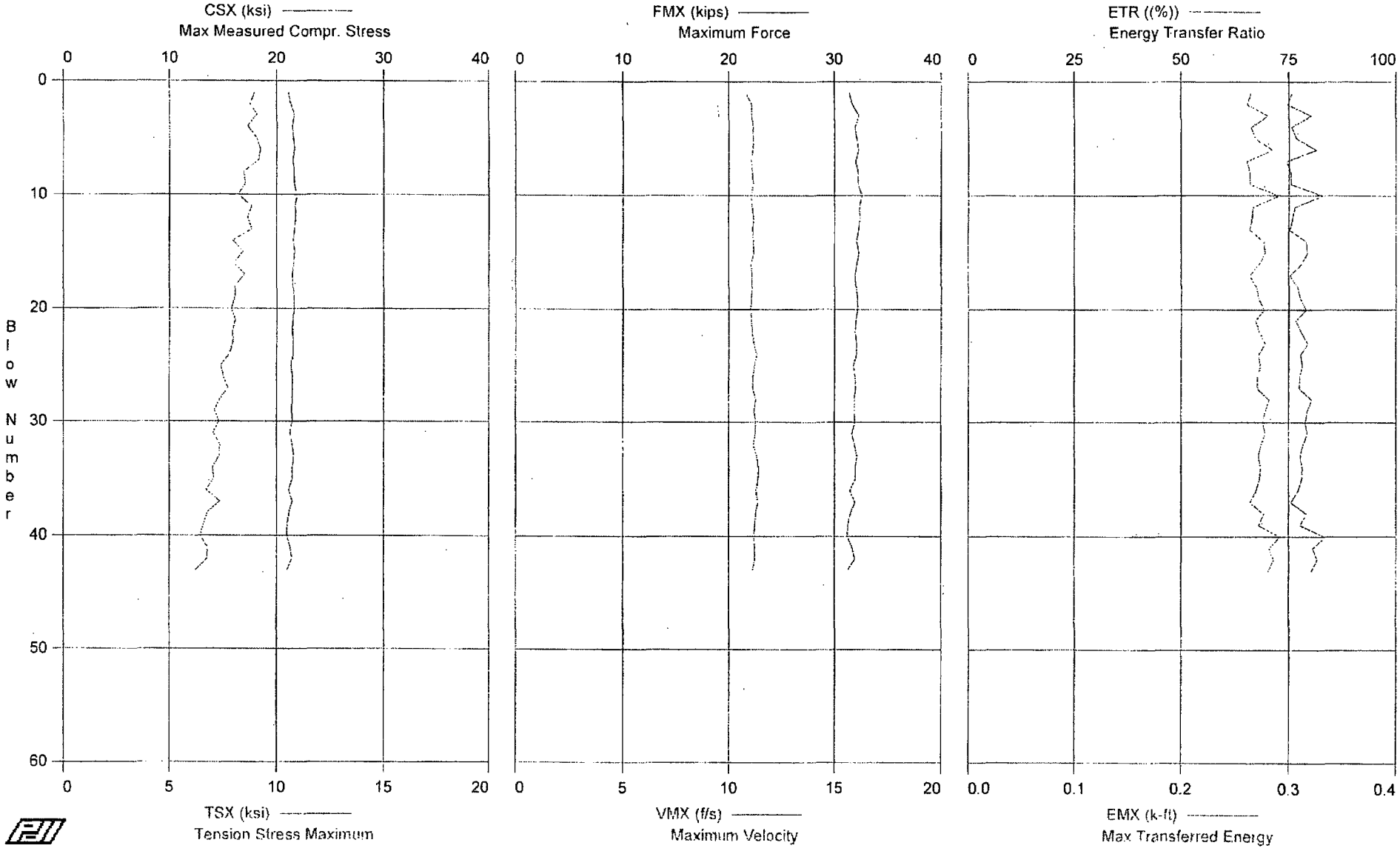
REMARKS:

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 9-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-3014; 13.5' - 15' Sample



Plant Vogtle COL Project - Boring B-3014; 13.5' - 15' Sample
OP: SEK

Rig Serial No. XO2958 (Gregg Drilling Fraste Track)
Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 19.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	21.09	9.01	31	10.8	1.56	0.0	0.279	75.8	0.265
2	0.00	21.28	8.78	32	11.1	1.33	44.6	0.272	74.8	0.262
3	0.00	21.69	9.12	32	11.1	1.40	44.6	0.277	80.3	0.281
4	0.00	21.43	8.65	32	11.2	0.82	44.7	0.272	75.7	0.265
5	0.00	21.54	9.08	32	11.2	1.43	44.5	0.272	76.8	0.269
6	0.00	21.65	9.25	32	11.2	1.35	44.6	0.280	81.5	0.285
7	0.00	21.48	9.16	32	11.1	1.54	44.8	0.272	74.6	0.261
8	0.00	21.62	8.48	32	11.1	0.98	44.5	0.273	75.5	0.264
9	0.00	21.63	8.58	32	11.2	1.26	44.6	0.273	75.6	0.264
10	0.00	21.87	8.23	33	11.1	1.18	44.7	0.281	83.0	0.291
11	0.00	21.71	8.86	32	11.1	1.15	44.7	0.275	76.4	0.267
12	0.00	21.76	8.66	32	11.2	1.73	44.5	0.276	75.9	0.266
13	0.00	21.65	8.87	32	11.1	1.23	44.7	0.274	75.3	0.264
14	0.00	21.54	7.99	32	11.2	1.58	44.6	0.274	79.1	0.277
15	0.00	21.67	8.48	32	11.2	1.17	44.8	0.275	79.5	0.278
16	0.00	21.57	8.04	32	11.1	1.28	44.5	0.273	78.0	0.273
17	0.00	21.46	8.55	32	11.1	1.00	44.7	0.270	75.3	0.264
18	0.00	21.50	8.09	32	11.1	1.38	44.7	0.270	77.1	0.270
19	0.00	21.58	8.07	32	11.1	1.41	44.6	0.272	77.7	0.272
20	0.00	21.61	7.89	32	11.0	1.34	44.6	0.273	79.1	0.277
21	0.00	21.50	8.09	32	11.1	1.29	44.7	0.268	76.7	0.269
22	0.00	21.43	7.97	32	11.1	1.58	44.6	0.268	77.9	0.273
23	0.00	21.54	7.98	32	11.2	1.50	44.6	0.272	79.5	0.278
24	0.00	21.53	7.82	32	11.3	0.81	44.7	0.269	77.8	0.272
25	0.00	21.34	7.43	32	11.2	1.76	44.6	0.269	78.2	0.274
26	0.00	21.45	7.52	32	11.1	1.24	44.6	0.268	77.5	0.271
27	0.00	21.47	7.74	32	11.2	1.12	44.6	0.270	77.5	0.271
28	0.00	21.42	7.39	32	11.3	1.03	44.7	0.272	80.5	0.282
29	0.00	21.40	7.11	32	11.2	1.27	44.7	0.269	79.4	0.278
30	0.00	21.44	7.31	32	11.3	0.98	44.7	0.269	78.9	0.276
31	0.00	21.25	7.04	32	11.3	1.68	44.7	0.269	79.3	0.278
32	0.00	21.41	7.36	32	11.2	1.58	44.5	0.267	78.4	0.274
33	0.00	21.57	7.34	32	11.3	0.95	44.8	0.271	77.7	0.272
34	0.00	21.45	7.03	32	11.4	1.01	44.5	0.268	78.2	0.274
35	0.00	21.46	7.08	32	11.4	1.29	44.7	0.269	78.1	0.273
36	0.00	21.13	6.72	31	11.3	0.96	44.6	0.266	77.2	0.270
37	0.00	21.45	7.35	32	11.4	0.85	44.7	0.265	75.5	0.264
38	0.00	21.15	6.78	32	11.3	0.97	44.7	0.268	79.3	0.277
39	0.00	20.99	6.61	31	11.2	1.10	44.6	0.265	77.7	0.272
40	0.00	20.95	6.44	31	11.2	1.14	44.8	0.270	83.6	0.292
41	0.00	21.28	6.78	32	11.2	1.16	44.6	0.267	80.7	0.282
42	0.00	21.43	6.77	32	11.2	1.17	44.7	0.271	81.7	0.286
43	0.00	20.95	6.22	31	11.1	1.53	44.6	0.268	80.3	0.281
	Average	21.45	7.85	32	11.2	1.26	44.7	0.271	78.1	0.273

Total number of blows analyzed: 43

Time Summary

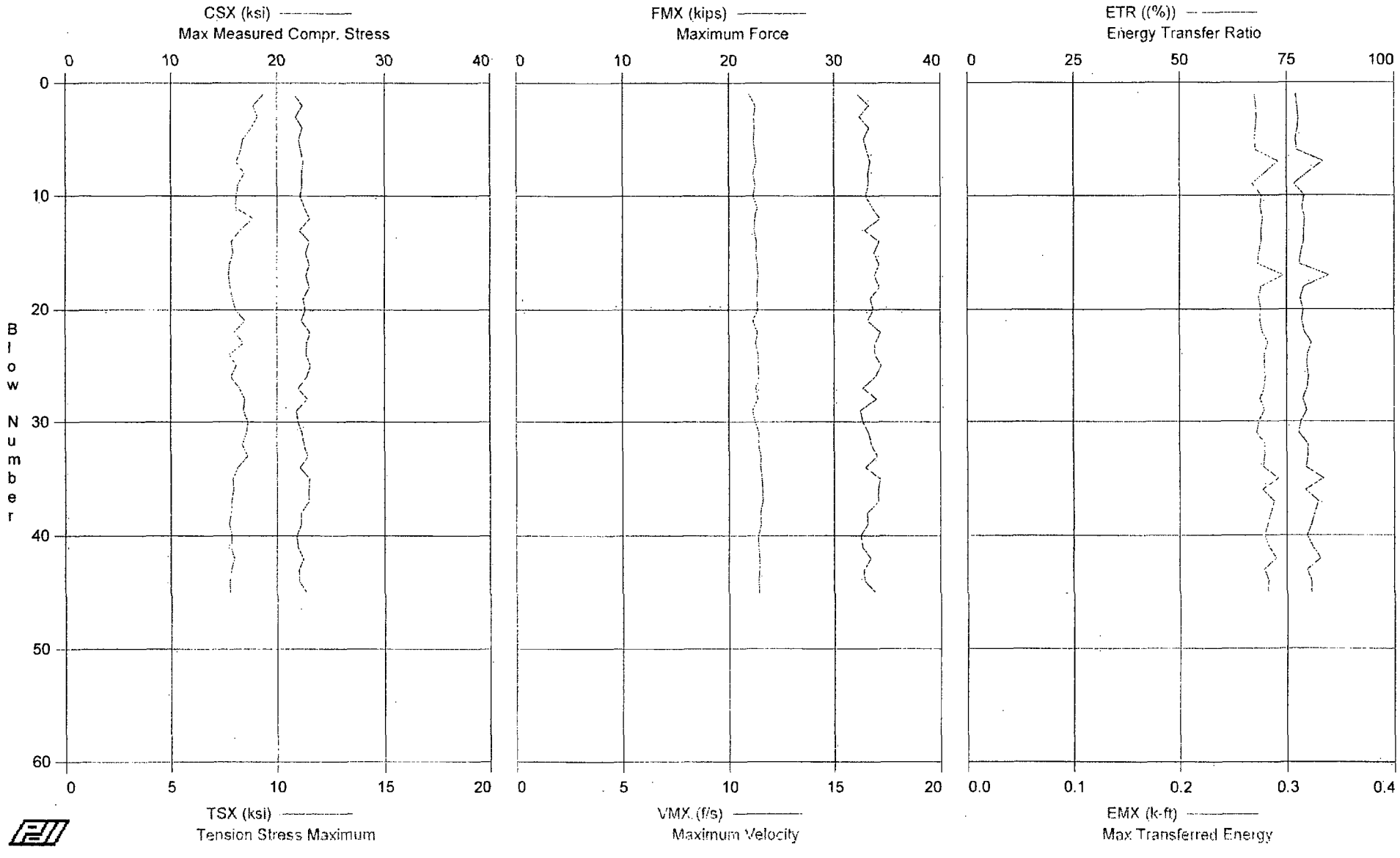
Drive 56 seconds 4:26:45 PM - 4:27:41 PM (2/7/2007) BN 1 - 43

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 9-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-3014; 18.5' - 20' Sample



Plant Vogtle COL Project - Boring B-3014; 18.5' - 20' Sample
OP: SEK

Rig Serial No. XO2958 (Gregg Drilling Fraste Track)
Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 24.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	21.63	9.38	32	11.0	1.26	0.0	0.289	77.1	0.270
2	0.00	22.36	8.89	33	11.3	1.05	44.2	0.290	77.4	0.271
3	0.00	21.75	9.09	32	11.2	0.57	44.6	0.289	77.6	0.272
4	0.00	22.35	8.82	33	11.2	1.17	44.6	0.293	77.6	0.271
5	0.00	22.03	8.40	33	11.2	1.08	44.8	0.288	77.1	0.270
6	0.00	22.23	8.30	33	11.2	1.07	44.5	0.290	77.3	0.271
7	0.00	22.44	8.08	33	11.3	1.21	44.6	0.296	83.4	0.292
8	0.00	22.31	8.48	33	11.2	0.94	44.8	0.294	79.9	0.280
9	0.00	22.33	8.17	33	11.3	1.40	44.8	0.287	76.7	0.268
10	0.00	22.13	8.07	33	11.2	1.08	44.6	0.293	79.0	0.276
11	0.00	22.53	8.05	34	11.4	1.55	44.7	0.293	78.5	0.275
12	0.00	23.03	8.90	34	11.2	0.98	44.7	0.295	79.1	0.277
13	0.00	22.07	8.24	33	11.2	0.83	44.8	0.295	78.9	0.276
14	0.00	22.98	7.85	34	11.3	1.03	44.8	0.297	78.9	0.276
15	0.00	22.66	7.93	34	11.3	1.02	44.7	0.294	78.3	0.274
16	0.00	22.98	7.77	34	11.4	1.00	44.8	0.295	77.9	0.273
17	0.00	22.70	7.72	34	11.4	1.54	44.9	0.297	84.7	0.297
18	0.00	23.01	7.80	34	11.4	1.17	44.6	0.298	78.9	0.276
19	0.00	22.43	7.91	33	11.3	0.62	44.8	0.293	78.1	0.274
20	0.00	22.64	8.05	34	11.4	0.87	44.7	0.294	78.8	0.276
21	0.00	22.27	8.50	33	11.2	0.76	44.8	0.292	78.5	0.275
22	0.00	23.08	8.00	34	11.4	0.89	44.8	0.297	79.2	0.277
23	0.00	22.73	8.42	34	11.3	1.40	44.9	0.295	80.7	0.282
24	0.00	22.70	7.75	34	11.4	1.69	44.6	0.292	79.7	0.279
25	0.00	23.11	8.09	34	11.4	1.02	44.6	0.296	79.7	0.279
26	0.00	22.75	7.83	34	11.4	1.21	44.8	0.295	80.0	0.280
27	0.00	21.97	8.24	33	11.3	1.49	44.9	0.293	79.7	0.279
28	0.00	22.82	8.48	34	11.4	1.11	44.8	0.291	78.7	0.275
29	0.00	21.81	8.43	32	11.1	1.27	44.7	0.293	79.7	0.279
30	0.00	21.97	8.65	33	11.3	1.33	44.8	0.289	78.3	0.274
31	0.00	22.33	8.56	33	11.4	1.24	44.7	0.289	77.8	0.272
32	0.00	22.51	8.37	34	11.4	1.27	44.9	0.289	79.9	0.280
33	0.00	22.85	8.61	34	11.5	1.43	44.7	0.292	79.8	0.279
34	0.00	22.12	8.13	33	11.5	1.08	44.8	0.288	79.4	0.278
35	0.00	23.03	7.93	34	11.6	1.40	44.8	0.296	83.4	0.292
36	0.00	22.91	7.94	34	11.6	1.04	44.7	0.293	79.2	0.277
37	0.00	22.94	7.86	34	11.6	0.91	44.7	0.297	82.3	0.288
38	0.00	22.23	7.82	33	11.5	1.39	44.8	0.294	81.4	0.285
39	0.00	22.26	7.74	33	11.5	1.19	44.8	0.292	80.7	0.282
40	0.00	21.83	7.88	33	11.4	1.32	44.8	0.289	79.7	0.279
41	0.00	21.94	7.83	33	11.4	1.50	44.7	0.293	80.9	0.283
42	0.00	22.46	8.00	33	11.5	1.05	44.7	0.298	82.8	0.290
43	0.00	22.03	7.85	33	11.5	1.22	44.7	0.289	79.7	0.279
44	0.00	22.09	7.79	33	11.4	1.54	44.7	0.290	80.7	0.283
45	0.00	22.77	7.79	34	11.5	1.64	44.8	0.291	80.7	0.282
	Average	22.45	8.19	33	11.4	1.17	44.7	0.293	79.5	0.278

Total number of blows analyzed: 45

Time Summary

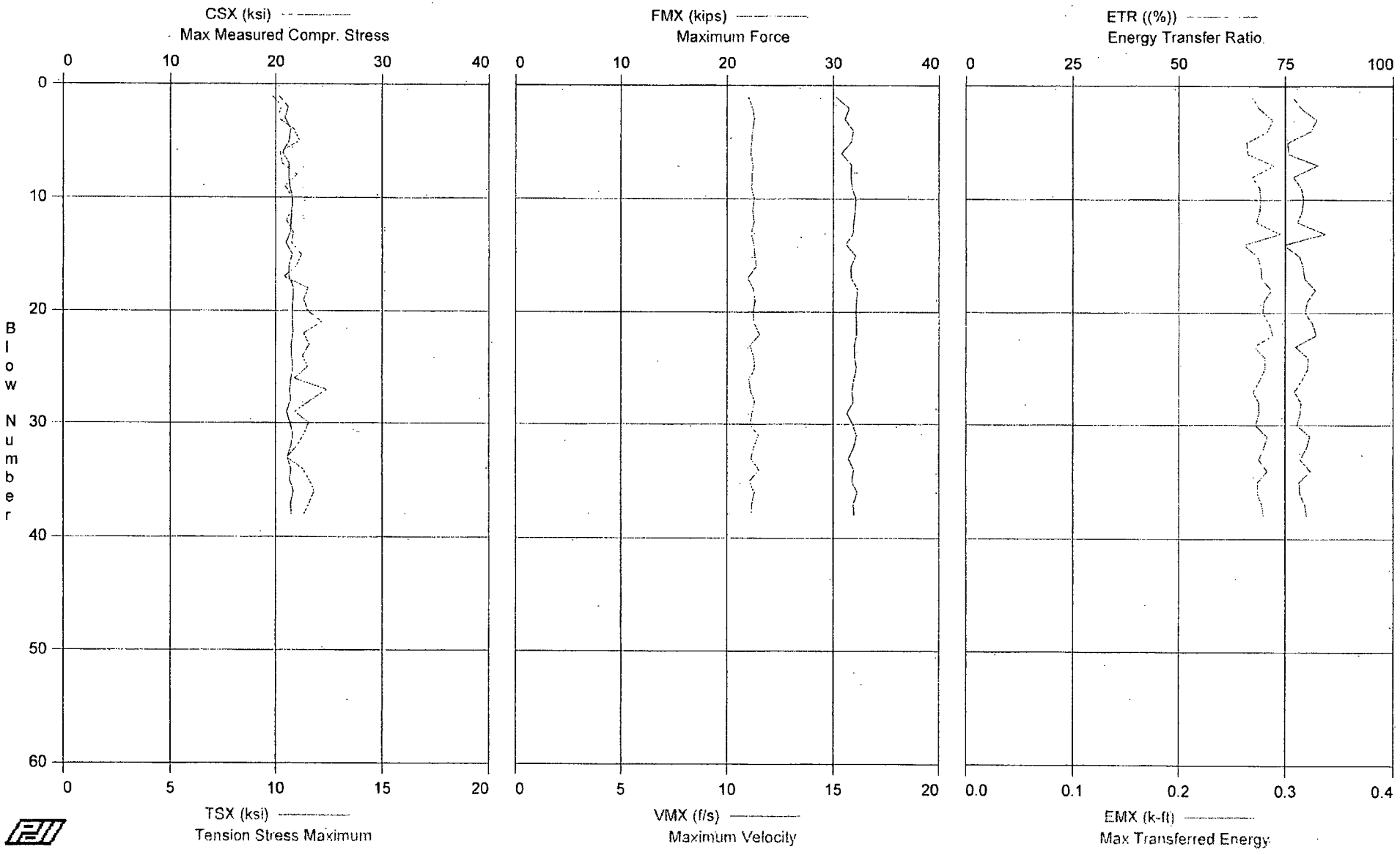
Drive 59 seconds 4:50:14 PM - 4:51:13 PM (2/7/2007) BN 1 - 45

PDIPLOT Ver. 2005.2 - Printed: 9-May-2007

MACTEC Engineering and Consulting, Inc. - Case Method Results

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-3014; 23.5' - 25' Sample



Plant Vogtle COL Project - Boring B-3014; 23.5' - 25' Sample
Rig Serial No. XO2958 (Gregg Drilling Fraste Track)
OP: SEK
Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 29.00 ft
WS: 16,807.9 f/s
SP: 0.492 k/ft3
EM: 30,000.0 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement
BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	20.29	9.84	30	11.0	1.08	0.0	0.292	76.8	0.269
2	0.00	21.16	10.27	32	11.2	1.47	44.1	0.290	79.0	0.276
3	0.00	20.89	10.11	31	11.3	1.42	44.4	0.295	82.3	0.288
4	0.00	21.42	10.87	32	11.2	1.96	44.4	0.293	80.9	0.283
5	0.00	21.29	11.13	32	11.1	0.56	44.6	0.293	75.5	0.264
6	0.00	20.66	10.21	31	11.1	0.75	44.6	0.286	75.9	0.265
7	0.00	21.29	10.32	32	11.2	1.52	44.6	0.294	82.6	0.289
8	0.00	21.26	11.01	32	11.2	1.22	44.5	0.293	76.9	0.269
9	0.00	21.33	10.45	32	11.1	1.06	44.7	0.289	78.8	0.276
10	0.00	21.58	10.81	32	11.3	1.25	44.5	0.295	79.3	0.277
11	0.00	21.52	10.77	32	11.2	1.11	44.5	0.296	78.9	0.276
12	0.00	21.45	10.50	32	11.3	0.76	44.6	0.298	77.9	0.273
13	0.00	21.41	10.83	32	11.1	1.32	44.7	0.294	84.2	0.295
14	0.00	20.95	10.75	31	11.3	0.55	44.6	0.289	74.6	0.261
15	0.00	21.54	11.21	32	11.3	1.32	44.4	0.296	78.3	0.274
16	0.00	21.25	10.99	32	11.4	1.48	44.7	0.294	79.2	0.277
17	0.00	21.28	10.39	32	11.0	1.76	44.5	0.292	79.6	0.278
18	0.00	21.69	11.52	32	11.2	1.41	44.6	0.298	82.0	0.287
19	0.00	21.63	11.32	32	11.3	1.08	44.4	0.299	80.1	0.280
20	0.00	21.58	11.52	32	11.2	1.17	44.7	0.296	79.7	0.279
21	0.00	21.61	12.17	32	11.3	2.00	44.4	0.296	81.4	0.285
22	0.00	21.63	11.32	32	11.5	2.17	44.6	0.292	82.2	0.288
23	0.00	21.48	11.58	32	11.1	0.76	44.4	0.297	77.4	0.271
24	0.00	21.48	11.27	32	11.2	1.40	44.4	0.292	80.3	0.281
25	0.00	21.63	11.51	32	11.3	1.87	44.7	0.292	80.2	0.281
26	0.00	21.45	10.88	32	11.0	1.45	44.5	0.293	78.8	0.276
27	0.00	21.33	12.41	32	11.1	1.71	44.5	0.291	77.1	0.270
28	0.00	21.40	11.63	32	11.3	1.33	44.5	0.295	78.7	0.275
29	0.00	21.02	10.90	31	11.2	1.14	44.7	0.289	78.5	0.275
30	0.00	21.37	11.55	32	11.1	1.35	44.4	0.292	77.7	0.272
31	0.00	21.61	11.32	32	11.5	1.60	44.7	0.291	80.8	0.283
32	0.00	21.45	11.02	32	11.3	1.46	44.4	0.293	79.9	0.280
33	0.00	21.11	10.54	31	11.1	1.14	44.5	0.289	78.5	0.275
34	0.00	21.45	11.28	32	11.5	1.44	44.6	0.289	80.8	0.283
35	0.00	21.32	11.58	32	11.0	1.23	44.5	0.292	78.3	0.274
36	0.00	21.67	11.81	32	11.3	1.64	44.5	0.290	78.4	0.274
37	0.00	21.42	11.59	32	11.2	1.48	44.5	0.297	79.5	0.278
38	0.00	21.45	11.33	32	11.1	1.90	44.4	0.292	79.9	0.280
	Average	21.35	11.07	32	11.2	1.35	44.5	0.293	79.2	0.277

Total number of blows analyzed: 38

Time Summary

Drive 50 seconds 5:03:14 PM - 5:04:04 PM (2/7/2007) BN 1 - 38

June 27, 2007

Memorandum to File DCN VGCOL 153
From: Steve Kiser SK
Reviewed By: Pieter Depree PDP

Subject: **Report of SPT Energy – A.E. Drilling Services CME 750 ATV Hammer Serial No. 328848 Automatic Hammer**
WORK INSTRUCTION VGCOL 153
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Steve Kiser, of MACTEC Engineering and Consulting, Inc. (MACTEC), performed energy measurements on the drill rig at the subject site per the referenced Work Instructions. This memorandum summarizes the field testing activities and presents the results of the energy measurements.

SPT Energy Field Measurements

SPT energy measurements were made on February 7, 2007, during drilling of Boring B-4029 at the referenced site. The testing was performed from approximately 8:40 to 9:40 AM under sunny skies and a temperature of about 55 degrees Fahrenheit. The boring was drilled with personnel and equipment from A.E. Drilling Services. The drilling equipment consisted of a CME 750 model ATV-mounted drill rig with an SPT automatic hammer. The drilling tools consisted of NW-J-sized drilling rods and a 2-foot long split tube sampler. Mud rotary drilling techniques were used to advance the boring below the depth at which groundwater was encountered at the time of energy testing. The drill rig operator during sampling was Mr. Kevin Warren. Energy measurements were recorded during sampling at the depth intervals shown in Table 1.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK (Serial No. 1430), and calibrated accelerometers (Serial Nos. P5953 and K0686) and strain gages (Serial Nos. NW #146/1 and NW#146/2). An NW-J-sized steel 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 hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod. The instrumented rod insert had a cross-sectional area of approximately 1.49 square inches and an outside diameter of approximately 2.625 inches at the gage location. The drill rods included in the drill rod string were hollow rods in 5 to 10 foot long sections, with an outside and inside diameter of approximately 2.625 and 2.25 inches, respectively. The recommended operation rate of the hammer is not known. Due to the closed hammer system, the hammer lubrication condition and anvil dimensions could not be observed.

Calibration Records

The calibration records for all the above are filed in DCN VGCOL-14.

13 Pages Total

Calculations for EFV

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 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 are tabulated in the attached PDIPLOT tables and are also shown graphically in the PDIPLOT charts.

Calculations for ETR

The ratio of the measured transferred energy (EFV) to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the ETR. The ETR values (as percent of the theoretical value) are shown in Table 1.

Comparison of ETR to Typical Energy Transfer Ratio Range

Based on a research report published by the Florida Department of Transportation (FDOT) (Report WPI No. 0510859, 1999), the average ETR measured for automatic hammers is 79.6%. The standard deviation was 7.9%; therefore, the range of ETRs within one standard deviation of the average was reported to be 71.7% to 87.5%. This range of ETRs was also consistent with other research that was cited in the FDOT research paper; however, maximum and minimum ETR values of up to 98% and 56%, respectively, were reported in the literature. The ETR values shown in Table 1 are generally within the range of typical values for automatic hammers as reported in the literature.

Discussion

Based on the field testing results, observations from the SPT energy measurements are summarized below:

- The data obtained by the PDA are consistent between individual hammer blows and between the sample depths tested. In general, the first and last one (and sometimes two) hammer blow records recorded by the PDA produced poor quality data (which is relatively common) and, as such, the record(s) was(were) not used in the data reduction.

- The average energy transferred from the hammer to the drill rods for each individual depth interval using the EFV method ranged from 291 foot-pounds to 298 foot-pounds. These average energy transfers correspond to energy transfer ratios (ETR) of 83% to 85% of the theoretical energy (350 foot-pounds) of the SPT hammer.

- The average at each depth interval was calculated as the transferred energy for each analyzed blow of the depth intervals divided by the total number of hammer blows analyzed. The overall weighted average energy transfer of the SPT system (for all the depth intervals tested) was 294.0 foot-pounds, with a weighted average ETR of 84.0%.

Attachments: Page 4 Table 1 - Summary of SPT Energy Measurements – 1 Page
Page 5 Work Instruction – DCN VGCOL 153 – 1 Page
Page 6 Record of SPT Energy Measurement – 1 Page
Pages 7 - 13 PDIPLOT Output – 7 Pages

TABLE 1
SUMMARY OF SPT ENERGY MEASUREMENTS (ASTM D4633-05)
Vogtle Units 3 & 4 COL Project
Burke County, Georgia
MACTEC Project No. 6141-06-0286

Rig Serial No.	Rig Owner	Rig Operator	Boring No. Tested	Rod Size	Date Tested	Sample Depth (feet)	SPT Blow Count (blows per six inches)	No. of Blows Analyzed	Average Measured Energy (Average EFV) (ft-lbs)[a]	Energy Transfer Ratio (%)[b] (Average ETR)
328848 (CME 750 ATV)	A.E. Drilling	K. Warren	B-4029	NW-J	2/7/2007	118.5 - 120.0	14 - 23 - 27	65	291	83.1%
						123.5 - 125.0	50/5"	50	298	85.1%
						128.5 - 130.0	50/5"	51	294	84.0%
							Weighted Average for Rig:		**294.0**	**84.0%**

[a]Measured 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 and final one to two blows produced poor quality data, and were not used to calculate the Average Measured Energy.

EFV = EMX * 1000 lbs/kip, where EMX equals the maximum transferred energy measured by the PDA (see attached PDA data).

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

The average ETR values may differ slightly and insignificantly from those in the PDIPLOT tables due to roundoff.

Prepared By: GL Date: 6-27-07	Checked By: WAC Date: 7/31/07

Work Instructions – SPT Energy AE Drilling CME 750 (K. Warren)
(Hammer #328848)
Vogtle COL Project
Project No. 6141-06-0286

Issued To: Steve Kiser

Location: Vogtle COL Project Field Office Date: 1/17/07

Issued By: Matthew F. Cooke, Site Coordinator

Valid From: 1/17/07 To: 1/17/08

Task Description: Measurement of energy transferred to the drill string rods from a Standard Penetration Test (SPT) automatic hammer mounted on a drill rig. Testing will be performed using a Pile Driving Analyzer (PDA) model PAK at various depth intervals below a depth of approximately 10 feet below the ground surface for the above referenced rig drilling SPT borings at the Vogtle COL Site.

Applicable Technical Procedures or Plans, or other reference: ASTM D4633-05 Standard Test Method for Energy Measurement for Dynamic Penetrometers.

Specific Instructions (note attachments where necessary): Obtain energy measurements with the PDA at various depth intervals below a depth of about 10 feet below the ground surface in general accordance with ASTM D4633-05. Perform energy measurement testing for the above referenced drill rig.

Report Format: Written report documenting results of field testing in general accordance with ASTM D4633-05, to include completed Summary of Daily Observations and Testing, Record of SPT Energy Measurement sheet(s), and PDIPLOT output data.

Specific Quality Assurance Procedures Applicable: None

Hold Points or Witness Points: Direction to perform energy measurements received from the Site Coordinator.

Records: All records generated shall be considered QA Records.

Reviewed and Approved By (Note: Only One Signature is Required to Issue):

Project Manager: Date:

Project Principal: Date:

Site Coordinator: Date: 1/17/07

No. of Pages: 1 DCN: VGCOL 153

MACTEC

2801 YORKMONT ROAD, SUITE 100 D CHARLOTTE, NC 28208
Telephone: (704) 357-8600 / Facsimile: (704) 357-8638

RECORD OF SPT ENERGY MEASUREMENT

GENERAL INFORMATION		DRILL RIG DATA	
PROJECT:	ALWR Vogtle COL Site	MAKE:	CME
LOCATION:	Waynesboro, Georgia	MODEL:	750 ATV
PROJECT NO.:	6141-06-0286	SERIAL NO.:	328848
DATE:	2-7-07	HAMMER TYPE:	AUTOMATIC
WEATHER:	SUNNY - COOL 55°	ROPE CONDITION:	N/A
INSPECTOR:	Steve Kiser	ROD SIZE:	NW-J
DRILLING COMPANY:	AE DRILLING	NO. OF SHEAVES:	N/A

BORING DATA			
BORING NUMBER:	B-4029		
DEPTH DRILLED:	150' PLANNED		
TIME DRIVEN:	9:45 AM		
RIG OPERATOR:	KEVIN WARREN		
HAMMER OPERATOR:	N.R.		
PDA PAK SERIAL NO.:	1430	1430	1430
INSTR. ROD AREA:	1.49 in²		
ACCEL. SERIAL NOS.:	P5953 / P5094		
STRAIN SERIAL NOS.:	146 NW 1/2		

SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)	SAMPLE DEPTH (feet)	SPT N-VALUE (bpf)	DEPTH cont. (feet)	SPT N-VALUE (bpf)
118.5/120'	14-23-27										
123.5/125	50/5"										
128.5/130	50/5"										

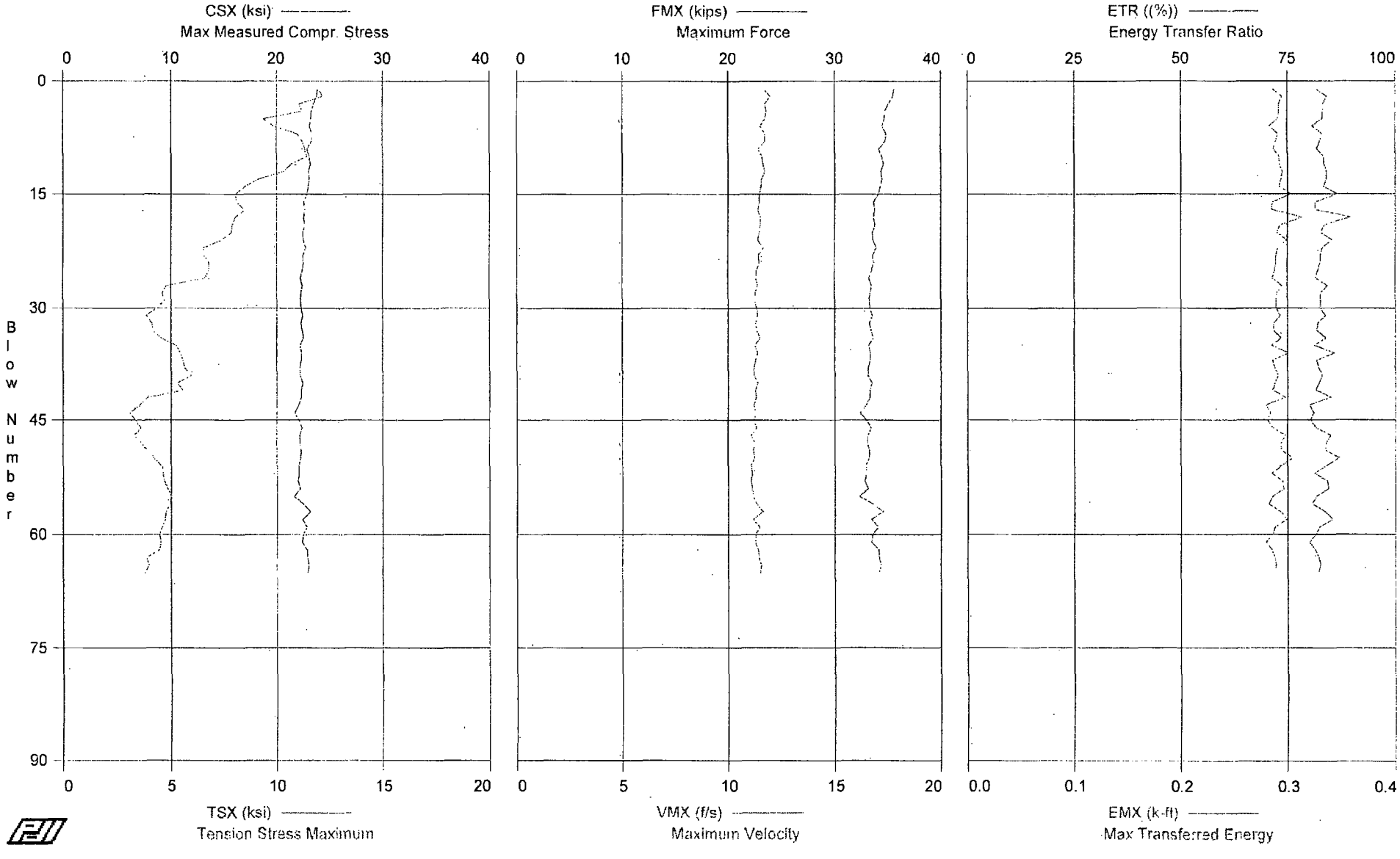
REMARKS:

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 1-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-4029; 118.5' - 120' Sample



MACTEC Engineering and Consulting, Inc.
Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 1-May-2007

Plant Vogtle COL Project - Boring B-4029; 118.5' - 120' Sample

Rig Serial No. 328848 (AE Drilling CME 750 ATV)

OP: SEK

Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 124.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	23.91	12.04	36	11.7	1.44	0.0	0.303	81.6	0.286
2	0.00	23.84	12.19	36	12.0	1.21	52.8	0.297	84.2	0.295
3	0.00	23.54	11.08	35	11.7	0.93	52.7	0.298	83.3	0.292
4	0.00	23.32	11.23	35	11.8	0.94	52.5	0.298	83.3	0.292
5	0.00	23.29	9.39	35	11.7	0.52	52.4	0.300	83.1	0.291
6	0.00	23.14	9.87	34	11.5	0.68	52.7	0.295	80.9	0.283
7	0.00	23.40	11.00	35	11.7	1.17	52.3	0.302	83.1	0.291
8	0.00	23.36	11.24	35	11.7	1.03	52.5	0.300	82.6	0.289
9	0.00	22.94	11.36	34	11.4	0.53	52.3	0.294	81.9	0.287
10	0.00	23.09	11.44	34	11.6	1.40	52.5	0.293	83.3	0.292
11	0.00	23.21	10.69	35	11.6	1.07	52.4	0.298	83.4	0.292
12	0.00	23.05	10.32	34	11.7	1.02	52.4	0.301	84.2	0.295
13	0.00	23.12	9.15	34	11.6	2.51	52.5	0.298	84.1	0.294
14	0.00	23.01	8.51	34	11.5	1.27	52.2	0.297	83.4	0.292
15	0.00	22.89	8.05	34	11.5	2.52	52.3	0.295	86.7	0.303
16	0.00	22.58	8.10	34	11.5	0.83	52.4	0.292	81.6	0.286
17	0.00	22.67	8.52	34	11.4	1.13	52.4	0.290	81.4	0.285
18	0.00	22.57	8.04	34	11.5	2.01	52.3	0.296	89.7	0.314
19	0.00	22.69	7.90	34	11.5	1.84	52.4	0.294	83.6	0.293
20	0.00	22.51	7.87	34	11.5	1.72	52.2	0.291	82.8	0.290
21	0.00	22.55	7.38	34	11.4	1.12	52.4	0.296	85.4	0.299
22	0.00	22.78	6.55	34	11.7	1.03	52.2	0.294	83.2	0.291
23	0.00	22.53	6.56	34	11.4	1.38	52.4	0.291	82.7	0.289
24	0.00	22.57	6.82	34	11.5	0.98	52.2	0.291	82.7	0.289
25	0.00	22.46	6.79	33	11.3	1.40	52.4	0.291	82.2	0.288
26	0.00	22.29	6.61	33	11.3	1.03	52.1	0.289	81.6	0.286
27	0.00	22.46	4.79	33	11.4	1.07	52.2	0.296	84.4	0.295
28	0.00	22.37	4.62	33	11.3	0.98	52.4	0.292	82.9	0.290
29	0.00	22.29	4.70	33	11.3	0.86	52.3	0.292	82.7	0.289
30	0.00	22.34	4.35	33	11.3	0.57	52.1	0.292	82.6	0.289
31	0.00	22.48	3.86	34	11.4	0.64	52.5	0.296	83.9	0.293
32	0.00	22.30	4.14	33	11.3	1.01	52.3	0.290	82.1	0.287
33	0.00	22.43	4.17	33	11.3	0.66	52.3	0.292	81.9	0.287
34	0.00	22.56	4.56	34	11.5	1.00	52.3	0.293	84.0	0.294
35	0.00	22.26	5.26	33	11.3	1.00	52.3	0.290	81.3	0.285
36	0.00	22.39	5.44	33	11.4	1.16	52.1	0.293	86.0	0.301
37	0.00	22.35	5.58	33	11.3	0.99	52.3	0.291	81.8	0.286
38	0.00	22.25	5.67	33	11.2	0.88	52.2	0.291	82.3	0.288
39	0.00	22.22	5.95	33	11.2	0.83	52.1	0.293	83.1	0.291
40	0.00	22.48	5.29	33	11.4	0.67	52.3	0.292	82.4	0.288
41	0.00	22.33	5.55	33	11.3	0.95	52.1	0.289	81.6	0.286
42	0.00	22.33	3.92	33	11.3	1.14	52.2	0.294	85.1	0.298
43	0.00	22.11	3.54	33	11.2	0.74	52.1	0.284	80.1	0.280
44	0.00	21.71	3.11	32	11.3	0.68	51.9	0.282	81.1	0.284
45	0.00	22.13	3.37	33	11.2	0.55	52.3	0.286	80.3	0.281
46	0.00	22.42	3.61	33	11.3	0.80	52.0	0.288	81.6	0.286
47	0.00	22.21	3.29	33	11.1	0.72	52.4	0.292	85.1	0.298
48	0.00	22.19	3.66	33	11.2	0.99	52.3	0.286	84.0	0.294
49	0.00	22.32	3.89	33	11.2	0.84	52.1	0.290	83.9	0.294
50	0.00	22.30	4.24	33	11.2	0.92	51.9	0.289	87.0	0.305
51	0.00	22.09	4.57	33	11.1	0.76	52.1	0.290	84.0	0.294
52	0.00	22.09	4.63	33	11.1	1.06	52.1	0.286	81.3	0.285
53	0.00	22.02	4.70	33	11.1	1.18	52.2	0.286	84.2	0.295
54	0.00	22.21	4.86	33	11.1	0.96	52.1	0.287	84.5	0.296
55	0.00	21.65	5.01	32	11.1	1.05	52.3	0.286	81.8	0.286
56	0.00	22.52	4.97	34	11.3	0.91	52.2	0.285	80.7	0.282
57	0.00	23.19	4.77	35	11.6	0.74	52.2	0.293	83.7	0.293
58	0.00	22.44	4.73	33	11.2	0.95	52.0	0.291	85.5	0.299
59	0.00	22.86	4.59	34	11.5	0.67	52.2	0.294	82.4	0.288
60	0.00	22.50	4.48	34	11.3	0.66	52.2	0.290	81.6	0.286
61	0.00	22.43	4.54	33	11.3	0.89	52.0	0.285	80.1	0.280
62	0.00	22.90	4.47	34	11.4	0.41	52.2	0.289	81.4	0.285
63	0.00	22.92	3.86	34	11.4	0.57	52.1	0.294	82.3	0.288
64	0.00	23.06	3.99	34	11.5	0.56	52.1	0.295	82.7	0.289
65	0.00	22.95	3.82	34	11.5	0.31	52.0	0.290	82.3	0.288

Plant Vogtle COL Project - Boring B-4029; 118.5' - 120' Sample
Rig Serial No. 328848 (AE Drilling CME 750 ATV)
OP: SEK
Test date: 7-Feb-2007

	CSX	TSX	FMX	VMX	DFN	BPM	EF2	ETR	EMX
	ksi	ksi	kips	f/s	in	**	k-ft	(%)	k-ft
Average	22.62	6.36	34	11.4	1.00	52.3	0.292	83.0	0.291

Total number of blows analyzed: 65

Time Summary

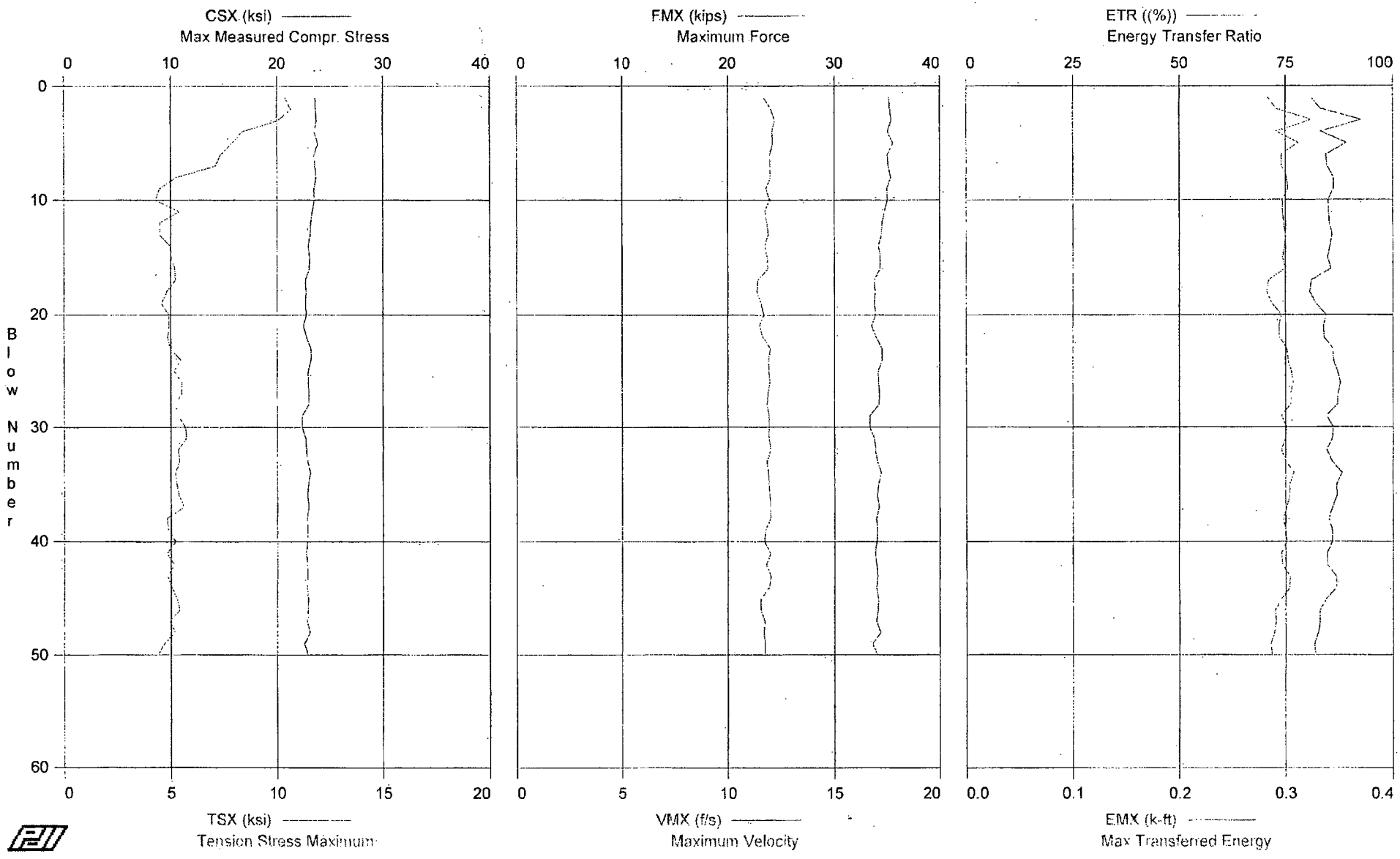
Drive 1 minute 13 seconds 8:47:29 AM - 8:48:42 AM (2/7/2007) BN 1 - 65

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 1-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-4029; 123.5' - 125' Sample



MACTEC Engineering and Consulting, Inc.
Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 1-May-2007

Plant Vogtle COL Project - Boring B-4029; 123.5' - 125' Sample

Rig Serial No. 328848 (AE Drilling CME 750 ATV)

OP: SEK

Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 129.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	23.61	10.39	35	11.7	1.24	0.0	0.301	80.9	0.283
2	0.00	23.67	10.67	35	12.0	1.07	53.1	0.301	83.1	0.291
3	0.00	23.76	10.06	35	12.2	1.32	52.5	0.305	92.6	0.324
4	0.00	23.52	8.36	35	12.1	0.80	52.6	0.299	83.2	0.291
5	0.00	23.85	7.86	36	12.1	1.31	52.4	0.305	89.1	0.312
6	0.00	23.50	7.33	35	12.0	0.57	52.6	0.300	84.5	0.296
7	0.00	23.57	7.10	35	12.0	1.05	52.2	0.301	84.6	0.296
8	0.00	23.72	5.24	35	12.0	1.14	52.8	0.303	86.1	0.301
9	0.00	23.47	4.48	35	11.8	0.80	52.2	0.300	86.2	0.302
10	0.00	23.52	4.30	35	12.0	0.12	52.5	0.296	84.9	0.297
11	0.00	23.34	5.41	35	11.7	0.30	52.6	0.295	85.0	0.297
12	0.00	23.17	4.50	35	11.8	0.35	52.2	0.297	85.2	0.298
13	0.00	23.13	4.47	34	11.9	0.74	52.5	0.293	85.8	0.300
14	0.00	22.93	4.97	34	11.7	0.54	52.2	0.294	85.4	0.299
15	0.00	23.07	5.03	34	11.9	0.70	52.2	0.296	84.8	0.297
16	0.00	23.05	5.20	34	11.9	0.95	52.2	0.297	85.6	0.300
17	0.00	22.66	5.22	34	11.4	0.38	52.3	0.290	81.1	0.284
18	0.00	22.73	4.81	34	11.4	0.09	52.4	0.290	80.6	0.282
19	0.00	22.67	4.56	34	11.6	0.69	52.2	0.287	82.1	0.287
20	0.00	22.77	4.92	34	11.7	0.46	52.2	0.293	84.5	0.296
21	0.00	22.51	4.92	34	11.5	0.57	52.3	0.292	83.9	0.294
22	0.00	22.79	4.86	34	11.6	0.93	52.1	0.291	83.9	0.294
23	0.00	23.17	4.98	35	12.0	0.67	52.1	0.296	86.0	0.301
24	0.00	23.19	5.46	35	11.9	0.92	52.3	0.301	86.2	0.302
25	0.00	22.92	5.15	34	11.9	0.78	52.2	0.295	87.0	0.305
26	0.00	22.93	5.53	34	12.0	0.94	52.2	0.293	87.8	0.307
27	0.00	23.01	5.51	34	11.9	0.84	52.4	0.293	87.2	0.305
28	0.00	22.97	5.23	34	11.8	0.49	52.2	0.294	87.1	0.305
29	0.00	22.39	5.34	33	11.9	0.33	52.1	0.291	84.5	0.296
30	0.00	22.38	5.68	33	11.9	0.68	52.2	0.288	86.0	0.301
31	0.00	22.68	5.72	34	11.9	-0.11	52.2	0.294	85.8	0.300
32	0.00	22.75	5.35	34	12.0	0.55	52.2	0.291	84.6	0.296
33	0.00	22.87	5.42	34	11.8	1.04	52.0	0.289	85.8	0.300
34	0.00	23.11	5.22	34	11.9	0.78	52.1	0.299	88.1	0.308
35	0.00	22.93	5.27	34	11.9	0.75	52.3	0.296	86.9	0.304
36	0.00	22.85	5.37	34	12.0	0.92	51.9	0.295	86.9	0.304
37	0.00	22.97	5.62	34	12.0	0.89	52.1	0.296	85.9	0.301
38	0.00	22.81	4.81	34	12.0	0.73	52.2	0.293	85.0	0.298
39	0.00	22.87	4.89	34	11.8	0.75	52.1	0.295	85.9	0.300
40	0.00	22.84	5.24	34	11.7	1.05	52.2	0.292	85.9	0.301
41	0.00	22.73	4.81	34	12.0	1.16	52.2	0.290	84.6	0.296
42	0.00	22.82	5.15	34	11.8	0.67	52.1	0.291	84.7	0.297
43	0.00	22.87	4.83	34	12.0	1.37	52.2	0.296	86.8	0.304
44	0.00	22.80	5.05	34	11.9	1.59	52.1	0.293	86.8	0.304
45	0.00	22.92	5.28	34	11.5	1.17	52.2	0.293	84.5	0.296
46	0.00	22.91	5.41	34	11.5	0.63	52.0	0.292	83.0	0.290
47	0.00	22.80	4.94	34	11.7	0.98	52.1	0.293	83.0	0.291
48	0.00	23.07	5.19	34	11.7	0.76	52.1	0.293	82.6	0.289
49	0.00	22.54	4.68	34	11.7	0.44	52.3	0.289	81.7	0.286
50	0.00	22.88	4.38	34	11.7	0.33	52.3	0.293	82.0	0.287
	Average	23.02	5.60	34	11.8	0.76	52.3	0.295	85.1	0.298

Total number of blows analyzed: 50

Time Summary

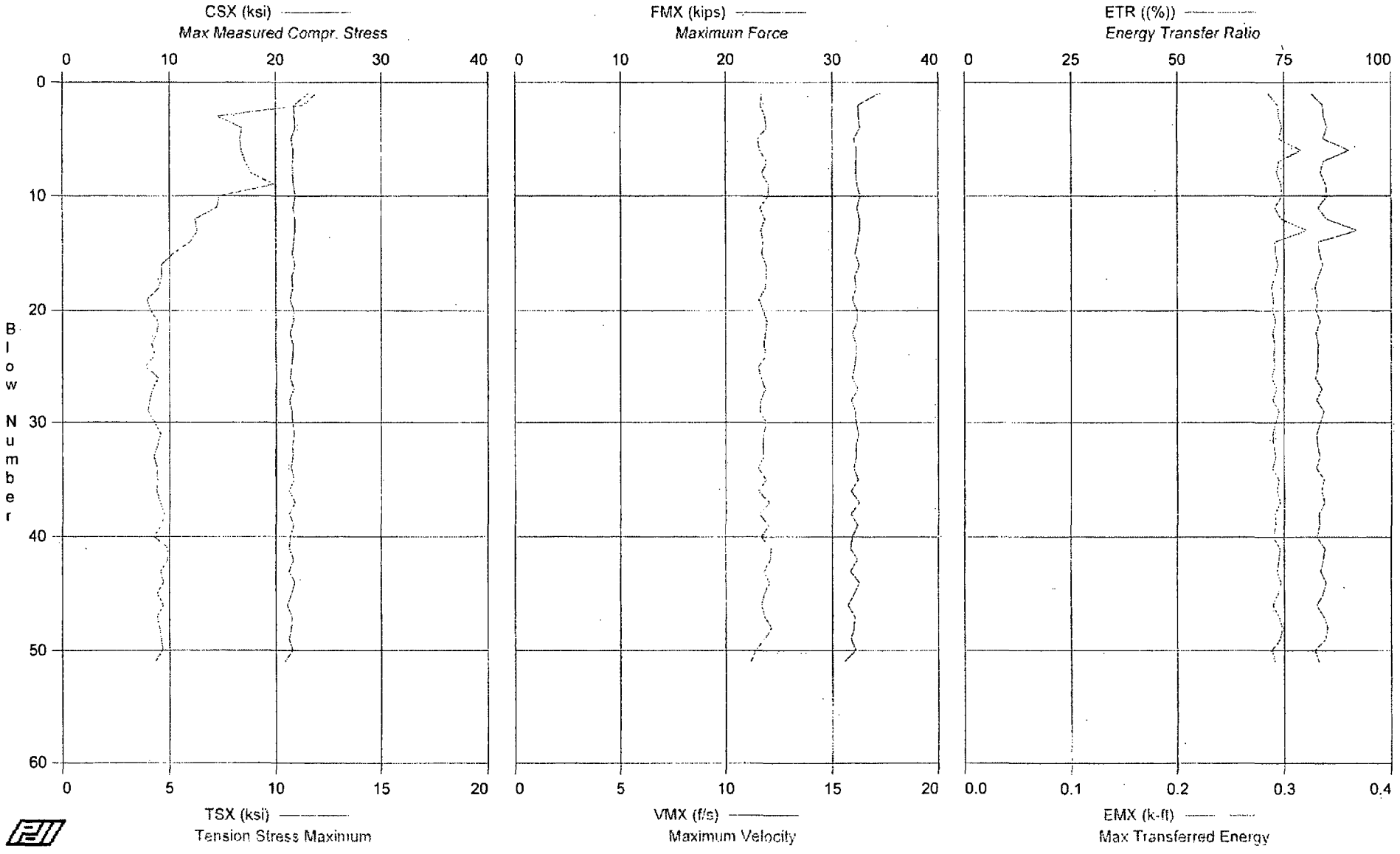
Drive 56 seconds 9:10:02 AM - 9:10:58 AM (2/7/2007) BN 1 - 50

MACTEC Engineering and Consulting, Inc. - Case Method Results

PDIPLOT Ver. 2005.2 - Printed: 1-May-2007

Test date: 7-Feb-2007

Plant Vogtle COL Project - Boring B-4029: 128.5' - 130' Sample



Plant Vogtle COL Project - Boring B-4029; 128.5' - 130' Sample
OP: SEK

Rig Serial No. 328848 (AE Drilling CME 750 ATV)
Test date: 7-Feb-2007

AR: 1.49 in^2
LE: 134.00 ft
WS: 16,807.9 f/s

SP: 0.492 k/ft3
EM: 30,000 ksi
JC: 0.60

CSX: Max Measured Compr. Stress
TSX: Tension Stress Maximum
FMX: Maximum Force
VMX: Maximum Velocity
DFN: Final Displacement

BPM: Blows per Minute
EF2: Energy of F^2
ETR: Energy Transfer Ratio
EMX: Max Transferred Energy

BL#	depth ft	CSX ksi	TSX ksi	FMX kips	VMX f/s	DFN in	BPM **	EF2 k-ft	ETR (%)	EMX k-ft
1	0.00	23.06	11.91	34	11.7	1.30	0.0	0.292	81.4	0.285
2	0.00	21.76	11.33	32	11.6	1.63	52.8	0.289	84.1	0.294
3	0.00	21.79	7.25	32	11.8	0.71	52.6	0.287	84.3	0.295
4	0.00	21.89	8.41	33	11.9	0.44	52.5	0.287	85.1	0.298
5	0.00	21.50	8.32	32	11.5	1.07	52.7	0.283	84.2	0.295
6	0.00	21.66	8.38	32	11.6	0.87	52.7	0.293	90.2	0.316
7	0.00	21.63	8.56	32	12.0	1.30	52.8	0.283	84.2	0.295
8	0.00	21.62	8.86	32	11.7	1.03	52.4	0.284	83.6	0.293
9	0.00	21.69	9.93	32	12.0	1.22	52.6	0.287	84.8	0.297
10	0.00	21.89	7.35	33	12.0	0.73	52.6	0.287	85.1	0.298
11	0.00	21.68	7.22	32	11.6	0.26	52.5	0.288	83.1	0.291
12	0.00	21.84	6.20	33	11.8	0.91	52.7	0.286	84.9	0.297
13	0.00	21.84	6.31	33	11.6	1.56	52.3	0.292	92.1	0.322
14	0.00	21.71	5.98	32	11.8	0.07	52.6	0.278	83.0	0.291
15	0.00	21.57	5.18	32	11.7	0.25	52.4	0.282	83.3	0.292
16	0.00	21.84	4.63	33	11.9	0.45	52.2	0.283	84.1	0.294
17	0.00	21.54	4.63	32	11.9	0.72	52.6	0.281	83.0	0.291
18	0.00	21.62	4.52	32	11.9	0.55	52.3	0.279	82.3	0.288
19	0.00	21.39	3.97	32	11.6	0.26	52.3	0.279	82.9	0.290
20	0.00	21.71	4.15	32	11.8	0.19	52.4	0.279	82.5	0.289
21	0.00	21.68	4.45	32	11.9	0.46	52.3	0.277	83.5	0.292
22	0.00	21.39	4.42	32	11.9	1.16	52.4	0.278	82.5	0.289
23	0.00	21.65	4.19	32	11.8	0.00	52.3	0.279	83.0	0.291
24	0.00	21.63	4.33	32	11.9	0.85	52.2	0.276	83.0	0.290
25	0.00	21.54	3.88	32	11.5	0.08	52.1	0.286	83.0	0.291
26	0.00	21.38	4.48	32	11.7	0.12	52.5	0.278	82.4	0.288
27	0.00	21.73	4.23	32	11.9	0.71	52.2	0.285	83.8	0.293
28	0.00	21.32	4.09	32	11.7	0.16	52.4	0.277	82.6	0.289
29	0.00	21.57	4.00	32	11.6	0.69	52.2	0.285	84.4	0.295
30	0.00	21.61	4.30	32	11.9	0.68	52.3	0.277	83.5	0.292
31	0.00	21.76	4.58	32	11.8	0.74	52.3	0.279	82.7	0.289
32	0.00	21.61	4.45	32	11.8	0.24	52.3	0.276	82.9	0.290
33	0.00	21.62	4.29	32	11.8	0.80	52.2	0.279	83.4	0.292
34	0.00	21.47	4.42	32	11.5	0.81	52.4	0.278	82.6	0.289
35	0.00	21.74	4.44	32	11.9	0.64	52.3	0.281	84.4	0.295
36	0.00	21.29	4.39	32	11.5	0.27	52.3	0.280	83.7	0.293
37	0.00	21.82	4.56	33	12.0	0.54	52.1	0.281	84.5	0.296
38	0.00	21.28	4.76	32	11.6	0.83	52.3	0.281	83.2	0.291
39	0.00	21.72	4.64	32	12.0	0.41	52.3	0.282	83.3	0.292
40	0.00	21.37	4.28	32	11.7	0.29	52.0	0.280	82.8	0.290
41	0.00	21.27	4.93	32	12.1	1.43	52.0	0.277	84.5	0.296
42	0.00	21.69	4.92	32	12.1	0.28	52.2	0.279	84.2	0.295
43	0.00	21.26	4.58	32	11.8	0.95	52.2	0.275	83.6	0.293
44	0.00	21.83	4.72	33	12.1	1.00	52.1	0.288	84.8	0.297
45	0.00	21.49	4.42	32	11.8	0.81	52.2	0.281	84.1	0.294
46	0.00	21.10	4.72	31	11.7	0.48	52.3	0.270	82.7	0.289
47	0.00	21.53	4.43	32	11.8	1.13	52.2	0.283	84.3	0.295
48	0.00	21.50	4.55	32	12.1	1.15	52.1	0.281	85.1	0.298
49	0.00	21.29	4.61	32	11.8	1.07	52.3	0.278	84.6	0.296
50	0.00	21.59	4.68	32	11.4	0.67	52.0	0.279	82.2	0.288
51	0.00	20.86	4.33	31	11.2	1.12	52.2	0.279	83.2	0.291
	Average	21.60	5.51	32	11.8	0.71	52.3	0.282	83.9	0.294

Total number of blows analyzed: 51

Time Summary

Drive 57 seconds 9:38:10 AM - 9:39:07 AM (2/7/2007) BN 1 - 51